No. 73-93

CHARLES CRENSHAW, M.D. and GARY SHAW,	)	IN THE DISTRICT COURT OF
	)	JOHNSON COUNTY, TEXAS
vs.	)	
LAWRENCE SUTHERLAND, GEORGE LUNDBERG, DENNIS BREO, THE AMERICAN MEDICAL ASSOCIATION D/B/A JOURNAL OF AMERICAN MEDICAL ASSOCIATION, THE DALLAS MORNING NEWS AND DAVID W. BELIN	)	18TH JUDICIAL DISTRICT

The continued video deposition of GEORGE LUNDBERG, M.D., called for examination, taken before KAREN L. PILEGGI, a Notary Public within and for the County of DuPage, State of Illinois, and a Certified Shorthand Reporter of said state, at Suite 1400, 515 North State Street, Chicago, Illinois, on the 28th day of December, 1993, at the approximate hour of 10:00 a.m.

PART II

APPEARANCES:

STRASBURGER & PRICE, L.L.P.
Suite 4300
901 Main Street
Dallas, Texas 75202
BY: MR. D. BRADLEY KIZZIA
appeared on behalf of the Plaintiffs;

JACKSON & WALKER
Suite 6000
901 Main Street
Dallas, Texas 75202
BY: MR. CHARLES L. BABCOCK
appeared on behalf of the Defendants George Lundberg, Dennis Breo and the American Medical Association;

AMERICAN MEDICAL ASSOCIATION
Corporate Counsel
515 North State Street
Chicago, Illinois 60610
BY: MR. WAYNE G. HOPPE
appeared on behalf of the American Medical Association;

JENKINS & GILCHRIST
Suite 3200
1445 Ross Avenue
Dallas, Texas 75202
BY: MR. PAUL C. WATLER
appeared on behalf of the Defendant Dallas Morning News;

GIBSON, DUNN & CRUTCHER
Suite 5400
1717 Main Street
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BY: MR. ALAN R. RICHEY
appeared on behalf of the Defendant David W. Belin.

ALSO PRESENT: John C. Shelton (Video technician)

REPORTED BY: KAREN L. PILEGGI, C.S.R.

I N D E X

E X H I B I T S

THE VIDEO OPERATOR: We are on the record. This is the beginning of the deposition of Dr. Lundberg. The date is December 28th, 1993, and the time is approximately 10:08 a.m.

MR. KIZZIA: Actually it's a continuation of the deposition that we began last week on December 21st, 1993.

GEORGE LUNDBERG, M.D.,

called as an expert herein, having been first duly sworn, was examined and testified as follows:

EXAMINATION (Resumed)

BY MR. KIZZIA:

Q Do you understand that, Dr. Lundberg?

A I understand.

Q You understand you are still under oath just as you were last week?

A I do.

Q Did you do anything to prepare for the continuation of your deposition today between the time that we finished last week and the beginning of the deposition today?

A I provided responses to the several questions brought by attorney Kizzia through Mr. Hoppe to me for counsel.

Q What questions were those, do you recall?

MR. BABCOCK: He's talking about your supplemental request for documents.

MR. KIZZIA: Let me show you what I've had marked for identification purposes as Exhibit 47.

(Document tendered to the deponent.)

BY MR. KIZZIA:

Q I ask you to take a look at it. That is a copy of the supplemental notice scheduling the continuation of your deposition for today and requesting that you bring to your deposition today certain items which are shown on Exhibit A to the supplemental notice.

Have you seen that document before?

A I saw a facsimile of it.

Q When you said that you endeavored to provide some information to your counsel in response to my request, were you referencing the items requested that are listed on that document?

A I didn't say my counsel. I said to counsel meaning whichever counsel has a right to the information.

THE VIDEO OPERATOR: Go off the record for a second.

(Discussion held off the record.)

THE VIDEO OPERATOR: We are back on the record.

THE WITNESS: These are the items, and this is the supplemental notice to which I referred.

BY MR. KIZZIA:

Q You will recall that at your deposition last week you identified two types of publications or two publications regarding journalistic or editorial ethics that you felt were authoritative?

A Yes.

MR. BABCOCK: Wait a minute. I'm not sure that's what you said. The question last week was about editing, and you responded to that. And he now has transferred that into journalistic ethics so be careful to listen to what he says.

THE WITNESS: Thank you, counsel.

BY MR. KIZZIA:

Q Do you wish to qualify your answer?

A I wish to hear the question again so I can be alert to its implication.

MR. BABCOCK: Just read the question back if you could, please.

(Record read.)

BY MR. KIZZIA:

Q Do you wish to qualify your answer?

A I have not given an answer. Or if I gave one, I wish to qualify it.

Q Here is your opportunity. Go ahead. Qualify it if you want to.

A I recall providing two references in response to whatever questions were specified as the record will show from December 21.

My memory does not allow me to recall the exact wording of your questions on December 21, and I have not been provided with a copy of the transcript so I have no way to recall this morning the exact words.

Q Well, item number 25 that's attached to the supplemental deposition notice requested you to produce copies of the two publications regarding journalistic and/or editorial ethics that you identified as authoritative during your deposition testimony in this case on December 21st, 1993.

Do you have --

A Are you asking me --

MR. BABCOCK: Wait a minute. He hadn't finished his question yet. He doesn't have a question. Let him ask one.

BY MR. KIZZIA:

Q My question is, do you have anything to produce

here today responsive to that request?

MR. BABCOCK: Yeah. And, Brad, let me interpose here. Without agreeing or disagreeing with your characterization of his testimony because that will speak for itself, Dr. Lundberg has provided to me this morning documents that I believe are responsive to number 25.

I have not had a chance to review them, but I will at the break and will furnish them to you unless there's some reason not to, which I don't expect there is.

BY MR. KIZZIA:

Q Look at item number 26. It requested production of a copy of the text or notes reflecting the speech or presentation that you made on the JFK assassination at the conference in Chicago in April of '93.

Do you have anything to produce here today responsive to that request?

A I do.

MR. KIZZIA: Is that another thing that you haven't had a chance to review yet?

MR. BABCOCK: I haven't reviewed anything. He handed me a pile of documents, so.

MR. KIZZIA: Okay. So at some point in today's deposition assuming that you don't have any objection to lodge you expect you'll be able to produce a copy of that?

MR. BABCOCK: Right.

BY MR. KIZZIA:

Q Item number 27 asked you to produce copies of all versions of JAMA's instructions for authors that have been in effect since January 1st, 1992.

Do you have anything to produce at the deposition today responsive to that request?

A I do.

Q Has that been given to counsel for review and possible production later today?

A It has.

Q On that point let me ask you this. Have the instructions for authors that JAMA utilizes been modified since January 1st, 1992?

A They have.

Q How many times have they been modified?

A I'm not sure.

Q How many versions of the instructions for authors that have been in effect since January 1st, 1992, are you going to be able to produce?

A Four.

Q Looking at item 28 it requested production of all versions of JAMA's letters policies that have been in effect since January 1st, 1992.

Do you have anything to produce responsive to that request?

A Yes.

Q Has that been given to counsel for review and hopeful later production during today's deposition?

A Yes.

Q Has JAMA's letters policy been revised or modified since January 1st, 1992?

A Yes.

Q How many times has it been revised or modified?

A I think once.

Q How many versions of JAMA's letter policies do you think that you will be in a position to produce today?

A Two.

Q Two?

A Two.

Q Looking at item 29 it requested production of all versions of JAMA's corrections policy that had been in effect since January 1st, 1992.

Have you produced anything to counsel for review and hopeful later production during today's deposition responsive to that request?

A Yes.

Q Does JAMA have a written corrections policy?

A In a sense.

Q Please explain your answer to that question and what you mean by in a sense?

A There is a correction policy in the AMA manual on style which we followed.

Q Has the corrections policy followed by JAMA been modified or revised since January 1st, 1992?

A No.

Q So will you have one policy to produce in response to the request for the corrections policy?

A Yes.

Q Dr. Lundberg, were there any confidential sources utilized for the two articles written by Mr. Breo and published in JAMA on May 27th, 1992?

A Yes.

Q Were there any of confidential sources utilized by Mr. Breo in connection with the second article or part two article that he wrote that was published in JAMA on May 27th, 1992?

THE WITNESS: Time.

THE VIDEO OPERATOR: Off.

(Discussion held off the record.)

THE VIDEO OPERATOR: Back on the record. It's 10:19.

THE WITNESS: I cannot testify to what Mr. Breo did or did not do. I can only testify of my own personal knowledge.

BY MR. KIZZIA:

Q Let me ask you the question this way. Do you know whether or not Mr. Breo relied upon any confidential sources in writing the two articles on the JFK case that appeared in the May 27th, 1992, edition of JAMA?

A Yes.

Q What do you know about that?

MR. BABCOCK: Don't tell him who the sources are.

THE WITNESS: They are confidential.

MR. BABCOCK: Right. So don't answer that.

THE WITNESS: And will remain such.

MR. BABCOCK: Okay. Good.

BY MR. KIZZIA:

Q Well, then if you know that he did rely upon a confidential source or sources I don't understand your

answer to my question about the second part of the article where I ask whether or not he had relied upon any confidential sources in connection with writing that second article or the second part of the article.

MR. BABCOCK: That's not a question. That's a statement.

BY MR. KIZZIA:

Q Would you explain your prior answer on that where you said that you cannot -- you cannot testify as to what Mr. Breo did or didn't do when you have now said that you know that he did rely upon a confidential source or sources?

A I only know what I know as to his reliance, and I can't -- I am unable to state how many or which or which applied to which article.

And, of course, I cannot reveal the names of any confidential sources.

Q But you are saying that you know that Mr. Breo relied upon a confidential source or sources in his writing one or both of the two articles that were published in JAMA on May 27th, 1992?

A Did you say one or both?

Q Right.

A Yes.

Q Was it one confidential source or more than one confidential source that you know about?

A More than one.

Q How many confidential sources would you say?

A More than one.

Q Can you be any more specific than that?

A Not really.

Q From your point of view as editor in chief of JAMA could you explain what you mean by a confidential source?

A A confidential source is a source available to a writer or editor that is protected by our policy of ethics of editing and parenthetically by law.

Q Is a confidential source a person?

A It may be.

Q Based upon what you know in this case is the confidential source used by Mr. Breo or confidential sources used by Mr. Breo in writing the two articles, one or both of the articles that were published in JAMA on May 27th, 1992, a person or persons?

A Yes.

Q You said that a confidential source is one that is available to a writer or editor. Was one or more of the confidential sources used by Mr. Breo in writing his

articles available to you?

MR. BABCOCK: Available in what sense? Well, I'll object to the form of the question. It's one question if you mean available did he talk to them or did he meet with them, that's one thing.

Available meaning that there are 15 secretaries in this building that are available to him, but that doesn't mean he met them or talked with them.

BY MR. KIZZIA:

Q Well, I was just using the language you used, Dr. Lundberg. You said it's a confidential source that's available to a writer or editor.

MR. BABCOCK: Sure. But when you turn that definition in a global sense into a specific sense, it could be confusing. It doesn't matter. You can ask him both questions.

MR. KIZZIA: Let's start off with this, Dr. Lundberg.

BY MR. KIZZIA:

Q Did you personally speak with the confidential sources that Mr. Breo supposedly relied upon in writing the articles that were published in JAMA on May 27th, 1992?

A Mr. Kizzia, I've already testified to the

effect that I cannot speak for Mr. Breo, and I cannot speak for what sources he did or did not rely on.

Q But you said that you know that he did rely on confidential sources; is that right?

A That is right.

Q What is the basis for your knowledge of that?

A My personal knowledge by having had such contact with sources myself.

Q What kind of contact are you referring to?

A Verbal contact.

Q Over the telephone, in letter communications?

A Verbal contact.

Q So a face-to-face meeting?

A Yes.

Q How many confidential sources did you have face-to-face meetings with?

THE WITNESS: Time.

THE VIDEO OPERATOR: Audio off, 10:26.

MR. BABCOCK: Read back the question.

THE VIDEO OPERATOR: Back on the record, 10:28.

(Record read.)

MR. BABCOCK: Just for the purposes of the record keep that question in mind, but I'll object to it because it's not confined to the articles or to time

which is why the witness is having a problem with it.

MR. KIZZIA: Well, I meant, and I'll just restate the question.

BY MR. KIZZIA:

Q How many face-to-face meetings with confidential sources did you have pertaining to the articles that were written by Mr. Breo and published in JAMA on May 27th, 1992?

A More than one.

Q Can you be any more specific than that?

A Fewer than ten.

Q Were there multiple meetings with the same people or same person or are you talking about one meeting with each confidential source?

A Neither.

Q Well, could you explain your answer?

A In one instance there was one meeting with one source. In another there may have been more than one meeting.

Q There may have been more than one meeting with one source?

A Yes.

Q And you had one meeting with one other source?

A Yes.

Q So then are you saying there are basically two confidential sources that you had face-to-face meetings with pertaining to the articles that Mr. Breo wrote that were published in JAMA on May 27th, 1992?

A I am not saying that.

Q What are you saying then?

MR. BABCOCK: He said what he said. If you want to ask him about what he said, go ahead.

BY MR. KIZZIA:

Q Are you saying that you don't know whether or not or you don't recall whether or not you had meetings with other confidential sources?

A I can't recall a specific number of sources or meetings.

Q Do you remember what the subject matter of the meetings were?

A Yes.

Q Please tell us what the subject matters of the meetings were?

THE WITNESS: Time.

THE VIDEO OPERATOR: Audio off, 10:31.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back on, 10:32.

MR. BABCOCK: Brad, as you know, we have

consistently lodged an objection throughout discovery to -- discovery on confidential sources.

As you probably know from our pleadings there is a statute in Illinois that protects not only the identity but communications between somebody such as Dr. Lundberg and a confidential source.

However, I will instruct him or I'll ask him. Maybe instruct is the wrong word. But I'll ask him to reveal to you not the identity or anything tending to reveal the identity of a confidential source but any conversations relating to the information in the articles relating to your clients.

And, of course, we take the position that Mr. Shaw is not referred to in the articles, but obviously Dr. Crenshaw is named.

So to that extent I'm going to ask the witness to respond, but otherwise not. Does that make sense?

MR. KIZZIA: Okay.

MR. BABCOCK: So now, I think, Mr. Kizzia is at least for the moment accepting my limitation. So you can tell him about any conversations that you had with any confidential source relating to information in either of the two articles about Dr. Crenshaw, okay.

MR. KIZZIA: I, of course, am not agreeing with your objection, but I'm --

MR. BABCOCK: I said for the moment.

MR. KIZZIA: I understand that his answer is going to be so limited.

MR. BABCOCK: Okay. Yeah.

THE WITNESS: I had a conversation with a confidential source regarding what was alleged to me to be invalid observations and statements from Dr. Crenshaw as incorporated in his book JFK: Conspiracy of Silence.

BY MR. KIZZIA:

Q Was it one conversation, one such conversation?

A It was more than one conversation.

Q Would the same confidential source?

A With the same confidential source.

Q Was this a face-to-face meeting?

A Yes.

Q Or face-to-face meetings?

A Yes.

Q Where did these meetings take place?

A By my recollection in Chicago.

Q At the AMA offices?

A By my recollection not at the AMA offices.

Q Where?

MR. BABCOCK: Well, that might tend to reveal the identity of the source unless it was at the Soldier Field or something.

BY MR. KIZZIA:

Q Would revealing the location of your meeting or meetings with this confidential source reveal who he or she is?

A I don't think so.

Q Where did the meetings take place?

A An eating establishment.

Q A restaurant?

A That's one word for it.

Q What's the name of the restaurant?

A I don't recall.

Q Were there more than one meeting at this restaurant or eating establishment?

A No.

Q Did any meeting take place other than at the eating establishment?

A Yes.

Q Where else did the meeting take place?

A I don't recall exactly.

Q Who was present during these meetings?

A I don't recall.

Q Was anyone present other than you and the confidential source?

A Possibly, but I'm not sure.

Q Did the meeting or meetings take place prior to your trip to Florida to interview Dr. Humes and Dr. Boswell?

A No.

Q Did your meeting or meetings with the confidential source take place prior to the press conference on May 19th, 1992?

A Yes.

Q All of the meetings?

THE WITNESS: Time.

THE VIDEO OPERATOR: Audio off, 10:38.

(Discussion held off the record.)

THE VIDEO OPERATOR: Back on, 10:38.

THE WITNESS: My counsel narrowed the question to state meetings with this confidential source about this subject?

MR. KIZZIA: Right.

THE WITNESS: No others.

BY MR. KIZZIA:

Q So all of such meetings took place prior to the press conference of May 19th, 1992?

A That is true.

Q Let me show you what I've had marked for identification purposes Exhibit 3HH.

MR. BABCOCK: That's a prior exhibit, right?

MR. KIZZIA: Right.

MR. BABCOCK: We got it.

BY MR. KIZZIA:

Q While you are looking it up before I get to that let me ask you this. Did all of the meetings that you had with this confidential source take place in Chicago?

A I don't recall.

Q Do you recall traveling to meet with any confidential source in connection with the May 27th, 1992 articles that were written by Mr. Breo?

A No.

Q Referring to Exhibit 3HH, you see down in the left-hand corner where you have listed certain points alleged to be errors, Crenshaw errors, do you see that?

A I do.

Q Was that list of alleged errors based upon your conversation or conversations with the confidential source?

A No.

Q Do you know what the last item listed there as an alleged Crenshaw error is?

MR. BABCOCK: You mean can he read it?

MR. KIZZIA: No. Obviously he can't read it.

BY MR. KIZZIA:

Q Do you know what it is?

MR. BABCOCK: The part that's been --

BY MR. KIZZIA:

Q See that last item is cut off under no autopsy.

A Do I know what's not written here?

Q What's the last item listed there that you can read?

A No autopsy dash check box.

Q Do you know what else you may have listed on the original document?

A No.

MR. KIZZIA: Can we find that out during the break, Chip?

MR. BABCOCK: If Rick Nelson were here, we probably could. And maybe even without him we can.

MR. KIZZIA: Let's see if we can find that out.

MR. BABCOCK: You give me a lot of assignments during the break, Brad.

MR. KIZZIA: We'll take a long break if you want to.

Even at the lunch break would be fine.

BY MR. KIZZIA:

Q With regard to this so-called confidential source, is this the same source supposedly relied upon by Mr. Breo?

MR. BABCOCK: Object to the form of the question.

THE WITNESS: I don't know.

BY MR. KIZZIA:

Q Do you know whether or not Mr. Breo ever spoke to this so-called confidential source?

MR. BABCOCK: Object to the form of the question, so-called.

THE WITNESS: I don't know who Mr. Breo spoke to.

BY MR. KIZZIA:

Q Do you really know whether or not he himself personally relied upon any confidential sources in writing the two articles that he wrote that were published in JAMA on May 27th, 1992?

A Yes.

Q What do you know, that he did or that he didn't?

A He did.

Q Are you saying then that you know that he relied upon at least one confidential source other than

the confidential source that you have referred to as someone that you met with and that shared with you some alleged invalid observations or statements made in Dr. Crenshaw's book?

MR. BABCOCK: I don't think you meant to put your alleged where you put it, but I'll object to the form of the question. That's not what he said before.

Go ahead and respond to it if you can.

THE WITNESS: As best I understand the question, I think the answer is yes.

BY MR. KIZZIA:

Q How is it that you know that Mr. Breo supposedly relied upon some other confidential source?

A I provided him with the information.

Q You mean you provided him with the information from a confidential source or you provided him with the identity of the confidential source so that Mr. Breo could talk to the confidential source?

A Information.

Q Are you saying that based upon your conversations with your confidential source and as a result of those conversations you passed on information to Mr. Breo for use in his writing of the articles?

A For use in his study of the issues, not

necessarily for the writing, per se.

Q Do you know whether or not Mr. Breo himself talked with or met with any other confidential source?

A I don't know.

Q As far as the information that you shared with Mr. Breo, was that from one confidential source or multiple confidential sources?

A Multiple.

Q With regard to Dr. Crenshaw and his book JFK: Conspiracy of Silence, how many confidential sources did you obtain information from that you shared with Mr. Breo?

A Several.

Q Can you be any more specific?

A Fewer than ten.

Q And more than how many? More than one?

A More than one.

Q More than two?

A More than two.

Q More than three?

A More than three.

Q More than four?

A I'm not sure.

Q Did you meet with each of these confidential

sources in Chicago?

A No.

Q Let me ask the question again.

Did you meet with each of these confidential sources in Chicago?

A No.

Q You've told us about one confidential source that you met with in Chicago at an eating establishment, right?

A Right.

Q Did you have meetings with the other confidential sources, face-to-face meetings?

A No.

Q Did you have telephone conversations with the other confidential sources?

A Yes.

Q Did you call them or did they call you?

A I don't recall.

Q Was anyone else a party to the telephone conversations other than you and the confidential sources?

A No.

Q Were those telephone conversations -- Strike that.

Did those telephone conversations occur prior to your meeting and interviews with Dr. Humes and Boswell in Florida in April of 1992?

A Some.

Q Were those telephone conversations specifically intended to provide information to be used in writing the articles that were published in JAMA on May 27th, 1992?

MR. BABCOCK: Object to the form of the question. Intended by whom?

Go ahead and answer it if you can.

THE WITNESS: No.

BY MR. KIZZIA:

Q Do you know whether or not the information that you obtained from the confidential sources in the telephone conversations that you referred to was actually used by Mr. Breo in writing the articles that that were published in JAMA on May 27th, 1992?

A Yes.

Q What what do you know about that?

A Some was and some wasn't.

Q How do you know that?

A I know what information I provided to Mr. Breo personally, and I know what's in the articles.

Q When you say you provided information to Mr. Breo, did you do it in the form of a memo or in an oral conversation or what?

A A conversation.

Q Does JAMA have a written policy pertaining to the use of confidential sources?

A No.

Q Was anything in writing obtained from any confidential source?

A No.

Q Were there any written notes made pertaining to any meeting or conversation with a confidential source?

A I don't know.

Q Did you personally make any notes pertaining to any meeting or resulting from any meeting or conversation that you had with a confidential source?

A No.

Q Can you tell me what information you received from any confidential source pertaining to Dr. Crenshaw or the book JFK: Conspiracy of Silence?

MR. BABCOCK: Outside of what he's already testified to.

THE WITNESS: I stand on my prior testimony in response to the same question.

MR. KIZZIA: Well, I don't believe I asked the same question.

MR. BABCOCK: In fairness he asked you about one specific conversation. He wants to now know if there are any others.

THE WITNESS: Please restate the question.

BY MR. KIZZIA:

Q Can you tell me any information concerning Dr. Crenshaw or the book JFK: Conspiracy of Silence that you obtained from any confidential source?

THE WITNESS: Time out.

THE VIDEO OPERATOR: Audio off, 10:53.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back on, 10:54.

MR. BABCOCK: Do you want the question back or do you remember it?

THE WITNESS: I think I remember it. I received from confidential source or sources information that statements contained in the Crenshaw book JFK: Conspiracy of Silence were suspect, were not soundly based on science, were worrisome in that they were in conflict with observations and beliefs of others who had more knowledge and experience in forensic medicine than did Dr. Crenshaw, and that statements in his book

regarding key elements of the autopsy were subject to extreme doubt.

BY MR. KIZZIA:

Q Dr. Lundberg, earlier you said that you had a conversation with a confidential source probably at a meeting at an eating establishment in Chicago where he or she told you about allegedly invalid statements in Dr. Crenshaw's book?

MR. BABCOCK: Statements and observations in Crenshaw's book is what he said.

MR. KIZZIA: Okay.

BY MR. KIZZIA:

Q Do you recall saying that?

A Yes.

Q Are you now saying that there were other meetings or conversations with different confidential sources where you obtained other allegations challenging statements made in Dr. Crenshaw's book?

MR. BABCOCK: He didn't say meetings I don't think, but I think he did say conversations.

THE WITNESS: If you said meetings or conversations, the answer is yes.

BY MR. KIZZIA:

Q Had you already read Dr. Crenshaw's book before

you received information from a confidential source or sources pertaining to allegedly invalid statements made in Dr. Crenshaw's book?

A Attempting to be responsive the answer is yes and no depending upon which sources.

Q Let's talk first about the meeting that you had at an eating establishment in Chicago with one confidential source wherein you were told about allegedly invalid statements made in Dr. Crenshaw's book.

Is that before or after you had read Dr. Crenshaw's book?

A I don't recall the date of that meeting, so I can't really say.

Q But you do know or do you know whether or not the telephone conversations with other confidential sources about Dr. Crenshaw's book occurred before or after you read the book?

A My recollection is some before and some after.

Q What statements were you told from confidential sources were suspect?

A I was told that one should doubt the scientific validity of much of the substance of the book without specifics for the most part.

Q Why were you told that you should doubt the scientific validity -- Let me restate the question.

What was your understanding as to the reasons that you should doubt the scientific validity of statements in the book?

MR. BABCOCK: I object to the form of the question. Assumes facts not in evidence.

Go ahead.

THE WITNESS: My understanding was that others who had reason to have more knowledge about the subject disagreed fundamentally with statements in the book.

BY MR. KIZZIA:

Q What persons are you saying should have had more knowledge than Dr. Crenshaw?

MR. BABCOCK: Without identifying the confidential source.

BY MR. KIZZIA:

Q Would that identify confidential source?

A Yes.

Q Can you tell me anything specific in Dr. Crenshaw's book that you were told by one of your confidential sources that you should doubt?

MR. BABCOCK: You mean something in Crenshaw's book that he should doubt?

MR. KIZZIA: Right.

MR. BABCOCK: Not that he should doubt the confidential source?

MR. KIZZIA: Right.

THE WITNESS: I can't recall any one specific thing.

BY MR. KIZZIA:

Q Can you recall any specific thing?

A No.

Q You said that you found or maybe it was one of your confidential sources that found statements in Dr. Crenshaw's book worrisome because there was conflict with statements of others who may have also had knowledge, maybe even more knowledge about certain aspects of the JFK case?

A What is the question?

Q My question is why would that be worrisome to you, the fact that Dr. Crenshaw may have said or made points in his book that were in conflict with things that had been said by others?

MR. BABCOCK: Object to the form of the question.

MR. WATLER: I'll join the objection.

MR. BABCOCK: He didn't say it was worrisome to him.

MR. KIZZIA: Let's clarify.

BY MR. KIZZIA:

Q When you used the word "worrisome" to describe the conflict between what Dr. Crenshaw had said in his book and what others had said, were you talking about worrisome to you, you found it worrisome or worrisome to your confidential sources?

MR. BABCOCK: Or worrisome to somebody else.

THE WITNESS: When I used the word worrisome, it was in relation to confidential sources.

BY MR. KIZZIA:

Q Was the doubt communicated to you about statements made in Dr. Crenshaw's book by one or more of your confidential sources based upon any such confidential source's personal knowledge?

A Yes.

Q Was it based upon personal knowledge of all your confidential sources? In other words, did all of your confidential sources have personal knowledge about information pertaining to the JFK case?

MR. BABCOCK: You just changed the question from the book to the JFK case.

THE WITNESS: What is personal knowledge?

MR. KIZZIA: Based upon their own observation, not based upon what somebody told them.

THE WITNESS: Would you rephrase the question.
BY MR. KIZZIA:
Q Was the information provided to you by any of your confidential sources based upon personal knowledge of the JFK case?
A Yes.
Q Was the information provided to you by confidential sources based upon personal knowledge of Dr. Crenshaw?
A Yes.
Q What was the basis for the personal knowledge of Dr. Crenshaw as you understood it?
MR. BABCOCK: In answering this be careful not to respond in such a way that it would tend to reveal the identity of the source.
THE WITNESS: Their personal observations.
BY MR. KIZZIA:
Q Of what?
A Of Dr. Crenshaw.
Q At Parkland Hospital in 1963?
A I decline to answer so as not to potentially reveal my confidential sources.
Q Did all of your confidential sources have personal knowledge of Dr. Crenshaw?

A No.

Q Did all of your confidential sources have personal knowledge of the JFK case?

A No.

Q How many of your confidential sources had personal knowledge of Dr. Crenshaw?

A More than one and fewer than six, and I can't be more specific.

Q Did you receive any information about Dr. Crenshaw from any confidential source other than pertaining to his book?

A Yes.

Q What information did you receive from confidential sources about Dr. Crenshaw other than his book?

A I heard he was sick.

Q In what way sick?

A Some form of thinking or behavior abnormality.

Q Can you be more specific than that?

A Only by hearsay.

Q Well, you talked about generally based on hearsay. You are talking about what somebody told you, right?

A I've been testifying to what somebody told me.

Q Because you yourself have never met Dr. Crenshaw?

A That is true.

Q Have you ever reviewed any of his medical records?

A No.

Q So you don't based upon your own personal knowledge know anything about Dr. Crenshaw's medical condition; is that right?

A That is right.

Q But you said that somebody told you that he had some sort of abnormality; is that right?

MR. BABCOCK: He said behavior abnormality.

BY MR. KIZZIA:

Q Is that what you were told?

A Some sort of abnormality, yes.

Q Can you be more specific about what you were told about that?

A That he may have had a stroke, that he may not be functioning very well.

Q Now is this something that you were told prior to the press conference on May 19th, 1992?

A Yes.

Q Dr. Lundberg, last Tuesday during your

deposition I asked you what information you had about Dr. Crenshaw prior to your delivering your remarks at the press conference on May 19th, 1992, and you didn't mention this.

In fact, you didn't mention any of your confidential sources. Why is that?

MR. BABCOCK: Now wait a minute. Brad, that was a long deposition, and I don't remember that question. You may very well have asked it, but let's not get into comparing the deposition last week. He's telling you about it.

MR. KIZZIA: If it is his testimony that he doesn't think he was asked that question, then fine. But if he knows that he was asked that question or questions along those lines and he withheld this information, I'm entitled to know why.

MR. BABCOCK: Ask him if he withheld any information from you last week.

BY MR. KIZZIA:

Q Do you remember questions along those lines at your deposition last week, Dr. Lundberg?

MR. BABCOCK: Object to the form of the question, along those lines. It's unprecise.

THE WITNESS: Should I answer that?

MR. BABCOCK: Yeah, if you can remember.

THE WITNESS: I remember no questions about confidential sources or confidential information except our discussion or questions that made it clear that our ethics did provide for confidentiality of sources and information.

BY MR. KIZZIA:

Q Do you remember questions about what information you had about Dr. Crenshaw prior to the press conference on May 19th, 1992?

A Vaguely.

Q Did you intend to withhold at that time the information that you now say you obtained from confidential sources about Dr. Crenshaw?

MR. BABCOCK: I'm going to object to this question, Brad. Look, your questions are skillfully framed and the witness has been very carefully in trying to respond to the precise question.

I don't remember that you asked him a question last time that called for him to respond in the way that you suggest and to even ask a question to suggest that he was withholding evidence I don't think is fair based upon your recollection of some questions that you may have asked him.

I guess I'll let him answer it, but I really do object. I'm not going to let him answer much more about this comparing today's answers versus last week's answers.

So I think you can answer whether you intended to withhold any information, but I'm going to object for the record very strenuously the implications of the question. Okay.

THE WITNESS: There is no intent, was no intent to withhold information, but rather to be specifically responsive to questions while preserving confidentiality as is ethically required and legally supported.

BY MR. KIZZIA:

Q Was it your understanding that the information that you say that you were told about Dr. Crenshaw's health was based upon the personal knowledge of the confidential source?

A Yes.

Q Why is that source confidential?

A Author/editor reviewer/editor relationships in our system of ethical behavior are confidential between those people and not to be shared with others.

Q Well, did this person ask to be -- ask to remain confidential?

A That was my understanding.

Q Based upon what?

A Conversation.

Q With regard to the other confidential sources that you refer to did each of those persons ask that they remain confidential?

THE WITNESS: Time.

THE VIDEO OPERATOR: Audio off, 11:16.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back, 11:16 a.m.

THE WITNESS: Yes.

BY MR. KIZZIA:

Q Is it JAMA's policy to grant confidentiality to any source of information that requests it?

MR. BABCOCK: Object to the form of the question.

Go ahead and answer it.

THE WITNESS: No, not necessarily.

BY MR. KIZZIA:

Q Why was confidentiality granted to these particular sources?

A Because they requested it and because we honor that request.

Q Well, you said that JAMA doesn't always honor such requests; is that right?

A That is true.

Q In what circumstances or under what set of facts would JAMA not honor such requests for confidentiality?

MR. BABCOCK: Are you asking to speculate about something in the future?

MR. KIZZIA: No. I'm asking him to elaborate on the types of situations where in the past they have not honored a request for confidentiality.

MR. BABCOCK: If he's aware of any such instances he can answer.

Don't speculate about the future.

THE WITNESS: We have made mistakes in which information was provided by secretarial error or a clerical error of some kind and thereby breaching confidentiality.

BY MR. KIZZIA:

Q Have there ever been any circumstances or cases where a source of information asked to remain confidential yet you or some other representative of JAMA decided not to grant the request of confidentiality?

A Yes.

Q Under what circumstances would that occur?

A Circumstances in which the conversation would end at that point, and we would not receive the information.

Q Did you personally know all of the persons upon whom you relied as confidential sources in connection with the two articles written by Mr. Breo that were published in JAMA on May 27th, 1992?

MR. BABCOCK: Will you read that back again. I didn't hear the first part. Sorry.

(Record read.)

THE WITNESS: What does counsel mean by know, personally know?

BY MR. KIZZIA:

Q Did you know the persons?

A I don't know what that means.

Q When you met with the one confidential source at the eating establishment in Chicago, had you known that person before you met with him that day or her that day?

A Yes.

Q With regard to the confidential sources with whom you had a conversation over the telephone, had you ever met such confidential sources?

A Yes.

Q Had you met all of your confidential sources face-to-face before you received the information from them?

A No.

Q With regard to the confidential source who told you that Dr. Crenshaw had some medical abnormality, did you know that person before you had that telephone conversation?

THE WITNESS: Time.

THE VIDEO OPERATOR: Audio off, 11:22.

(Discussion held off the record.)

THE VIDEO OPERATOR: Back on, 11:22 a.m.

THE WITNESS: The question was in the singular. I can't answer it accurately. There was more than one person.

BY MR. KIZZIA:

Q How many persons?

A More than one and fewer than ten.

Q Can you be any more specific than that?

A Fewer than six.

Q Can you be any more specific than that?

A No.

Q Did you know or had you met personally all of the persons who you say shared that information with you

over the telephone?

A Yes.

Q When you refer to these persons as confidential sources, is that because they asked you to keep their identities confidential?

A Yes.

Q Did any of these persons ask you to keep the information that they provided to you confidential?

A Yes and no.

Q Please explain your answer.

A Some parts yes and other parts no.

Q Was any of the information provided to you which you were asked to keep confidential utilized in writing Mr. Breo's articles of May 27th, 1992?

A Not to my knowledge.

Q Did you pass that information on to Mr. Breo, any information that you were asked to keep confidential?

A I don't recall.

Q Did you disclose to Mr. Breo the identity of any of your confidential sources?

A Yes.

Q Did you disclose the identity of all of your confidential sources?

A No.

Q Why did you keep some confidential personally and some you shared with Mr. Breo?

A I provided him what I thought he needed to know of such confidential nature and withheld things I felt he did not need to know.

Q Why did you think that Mr. Breo would need to know the identity of some confidential sources and not others?

A I thought it would aid him in his study to have that information.

Q How would it aid him or why did you think it would aid him?

A Perhaps he could talk to the person if he needed to.

Q Do you know whether or not he did, whether or not Mr. Breo followed up and talked to any of your confidential sources?

A I don't know.

Q Did you disclose the identity of any of your confidential sources to anyone other than Mr. Breo?

A I may have. I don't recall for sure.

Q What makes you think that you may have?

A Dr. Glass and I worked closely together in the

editing process and Dr. Glass and I work together every day on all manner of confidentiality material.

We frequently share confidential information in confidence. It would have made sense to have shared some of this with him, but I don't recall exactly.

Q Other than Dr. Glass do you think that you may have revealed or disclosed the identities of any of your confidential sources?

A Yes.

Q To whom else may you have disclosed your confidential sources or revealed the identities of your confidential sources?

A To legal counsel.

Q Anyone else?

A Not that I can recall.

Q You said that you were told that Dr. Crenshaw may not be functioning well because he may have had a stroke; is that right?

A That is true.

MR. BABCOCK: He didn't say that. He was quoting others as saying that.

MR. KIZZIA: Right.

BY MR. KIZZIA:

Q You were told that?

A I was told that.

Q When you -- What was your understanding as to what was meant by not functioning well? Physically, mentally or what?

A I was told that he was not functioning well medically, mentally, physically and in terms of his job.

Q What job was that?

A Surgeon.

Q What was your understanding at that time as to where Dr. Crenshaw was working?

A I don't know, but the implication from my sources was that perhaps he was not working at all. But I don't know that.

Q Will you reveal any of your confidential sources today?

MR. BABCOCK: No, he won't.

BY MR. KIZZIA:

Q Is that your answer?

A No, Mr. Kizzia, I will not.

Q As editor in chief for JAMA do you have a boss?

A Yes.

Q Who is your boss?

A My supervisor is Mr. Larry Joyce.

Q Who is Mr. Joyce or what is his position?

A He's senior vice president for communication and publishing of the American Medical Association.

Q How long has he been in that capacity or been in that position?

A Three or four years.

Q By the way, have you ever been deposed before?

MR. BABCOCK: The question has been asked and answered.

MR. KIZZIA: I don't think so. Believe it or not I don't think I actually asked that question.

THE WITNESS: Yes.

BY MR. KIZZIA:

Q How many times?

A Many, but I don't recall how many.

Q Have you ever been deposed in a case involving allegations of defamation against JAMA?

A No.

Q How about any case involving allegations of defamation against any other AMA publication?

A No.

Q I believe that you said that you did not know the purpose of the press conference on May 19th, 1992;

is that right?

MR. BABCOCK: You asked him in his prior deposition. If it's a predicate to another question?

MR. KIZZIA: It is.

MR. BABCOCK: Okay.

BY MR. KIZZIA:

Q Did any representative of the AMA or JAMA tell you what the purpose of the press conference was?

THE WITNESS: Time out.

THE VIDEO OPERATOR: Audio off, 11:33.

(Discussion held off the record.)

THE VIDEO OPERATOR: Back on, 11:33.

THE WITNESS: I don't recall.

BY MR. KIZZIA:

Q Did you think that the press conference or the idea of a press conference was a good idea?

A Yes.

Q Why did you think it was a good idea?

A Because of the regular embargo system of the AMA.

Q What is the regular embargo system of the AMA?

A All articles published in JAMA and our specialty journals are by ethical gentlemen's agreement considered embargoed by the public media until a

specific time agreed to between the publisher and the media.

At that moment in time which for JAMA is middle afternoon on Tuesday each week, at that time the information can be provided to the public at large by public media.

Prior to that time it may not be. It must be kept secret or embargoed until the prearranged time of publication.

That prearranged time routinely is for JAMA, as I said, Tuesday afternoon for a Wednesday publication date.

The public media voluntarily adhered to this concept of embargoes almost always although there are no laws or rules to make them do so.

Occasionally some article in the Journal has something about it which causes the press relations people here to believe that the embargo should be altered for date or changed.

When that occurs, such an embargo change is accomplished. It is my understanding that it was the opinion of the communications people, the professionals in that area here at AMA that an embargo date change for Mr. Breo's two articles would be appropriate because

they felt that the public media would not adhere to the embargo system for those articles as it normally would for scientific articles.

So it's my understanding they decided to set a different embargo date concurrent with a press conference so as to be fair to all media rather than unfair to all who would obey the embargo when those who wouldn't obey it would run with the information.

I thought that was a good idea because among the principal purposes of the embargo system is fairness to all members of the public media and fairness to the public through that process.

Q Is it the normal embargo policy of AMA that the media or information regarding JAMA articles is not released to the media for publication until the articles are published in JAMA?

A No.

Q Did you say that JAMA editions are published on Wednesdays?

A Yes.

Q Did you say that generally speaking the AMA policy is that the information is not released to the media for publication concerning articles until Tuesday afternoon before publication?

A I did not say that.

Q What was it that you said about Tuesday afternoon prior to Wednesday publication?

A I said that the AMA establishes an embargo date and time for all of its publications. For JAMA that is usually Tuesday afternoon.

Q Before publication on Wednesday?

A Well, yes and no because when you use the term published, one might be confused by the question of whether published means printed and bound and distributed or whether published means the date on the cover.

It may mean either. The cover date is the official publication date, but the printing, binding and mailing is accomplished many days in advance of the date on the cover.

Q When are JAMA issues distributed to its subscribers?

A The day they're printed, bound and addressed, generally eight days or so prior to the date on the cover.

Q Did you know anything about Gary Shaw before making your remarks at the press conference on May 19th, 1992?

A No.

Q Did you obtain any information about him from your confidential sources?

A No.

Q Did you try to find out anything about him prior to your remarks at the press conference on May 19th, 1992?

A No.

Q Why not?

A I can't really say why not. Dr. Crenshaw seemed to be the principal author. The problems with the book seemed to be medical scientific problems.

Dr. Crenshaw was a physician. I didn't know what Mr. Shaw's role had been, but I did not know him to be a physician.

I saw neither M.D., Ph.D. nor other graduate degree attached to his name, so I believe that the medical forensic scientific aspects of the book would have been Dr. Crenshaw's responsibility.

Q Did any of the confidential sources that you relied upon tell you that Dr. Crenshaw was not on the trauma team that was involved in the effort to save President Kennedy in trauma room one at Parkland Hospital on November 22nd, 1963?

A No.

Q Do you know whether or not any surgical procedures were performed at Parkland Hospital on President Kennedy on November 22nd, 1963?

MR. BABCOCK: You mean personal knowledge or stuff he's read?

BY MR. KIZZIA:

Q Obviously you don't have personal knowledge. You weren't there, right?

A I was not there, right.

Q So you don't have personal knowledge as to what was done?

A That is true.

Q Do you have any information to indicate or are you aware of any information to indicate that any surgical procedures were performed on President Kennedy at Parkland Hospital on November 22nd, 1963?

A Yes.

Q What information do you have?

A The information I have from multiple sources is that a tracheostomy was performed, cut downs into veins to provide a port for blood or fluids were performed, artificial respiration of a sort was performed, and there were efforts to put tubes into his chest cavities.

Q Would you describe any of those procedures as major surgical procedures?

A Yes.

Q Would you describe all of them as major surgical procedures?

A No.

Q Which ones would you describe as major surgical procedures?

A Tracheostomy, efforts to place tubes into the chest. Whether the method of ventilation and the cut downs would be called major or minor depends upon your point of view.

Q What do you mean?

A I suspect if Mr. Kizzia were having this done to him at this moment he would think it was quite major.

Q Was a public relations agency used to distribute press releases or other information concerning the May 27th, 1992, JAMA articles on the JFK case?

MR. BABCOCK: Object to the form of the question, other information.

THE WITNESS: I don't know.

BY MR. KIZZIA:

Q Do you know whether or not JAMA or the AMA

utilizes from time to time a public relations agency to distribute press releases about JAMA articles?

A I don't know.

MR. KIZZIA: Let's go off the record for a minute.

THE VIDEO OPERATOR: Camera stopped.

(Discussion held off the record.)

(Recess had.)

(Resuming at 1:00 p.m.)

No. 73-93

CHARLES CRENSHAW, M.D. and GARY SHAW,	)	IN THE DISTRICT COURT OF
	)	
	)	JOHNSON COUNTY, TEXAS
vs.	)	
	)	
LAWRENCE SUTHERLAND, GEORGE LUNDBERG, DENNIS BREO, THE AMERICAN MEDICAL ASSOCIATION D/B/A JOURNAL OF AMERICAN MEDICAL ASSOCIATION, THE DALLAS MORNING NEWS AND DAVID W. BELIN	)	

December 28, 1993

1:00 p.m.

The video deposition of GEORGE LUNDBERG, M.D., resumed pursuant to adjournment at Suite 1400, 515 North State Street, Chicago, Illinois.

PRESENT:

STRASBURGER & PRICE, L.L.P.
Suite 4300
901 Main Street
Dallas, Texas 75202
BY: MR. D. BRADLEY KIZZIA
appeared on behalf of the Plaintiffs;

JACKSON & WALKER
Suite 6000
901 Main Street
Dallas, Texas 75202
BY: MR. CHARLES L. BABCOCK
appeared on behalf of the Defendants George Lundberg, Dennis Breo and the American Medical Association;

AMERICAN MEDICAL ASSOCIATION
Corporate Counsel
515 North State Street
Chicago, Illinois 60610
BY: MR. WAYNE G. HOPPE
appeared on behalf of the American Medical Association;

JENKINS & GILCHRIST
Suite 3200
1445 Ross Avenue
Dallas, Texas 75202
BY: MR. PAUL C. WATLER
appeared on behalf of the Defendant Dallas Morning News;

GIBSON, DUNN & CRUTCHER
Suite 5400
1717 Main Street
Dallas, Texas 75201
BY: MR. ALAN R. RICHEY
appeared on behalf of the Defendant David W. Belin.

ALSO PRESENT: John C. Shelton (Video technician)

REPORTED BY: KAREN L. PILEGGI, C.S.R.

THE VIDEO OPERATOR: We are back on the record. The time is approximately 1:03 p.m.

BY MR. KIZZIA:

Q Dr. Lundberg, did anyone put you in touch with any of your confidential sources concerning Dr. Crenshaw or his book?

A No.

Q There was no intermediary or go between between you and your confidential sources?

A May I consult with counsel?

THE VIDEO OPERATOR: Audio off, 1:03.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back on, 1:04.

THE WITNESS: No.

BY MR. KIZZIA:

Q Did anyone suggest that you contact any of your confidential sources?

A No.

Q Did anyone provide you with the name or names of the confidential sources?

A No.

Q Was the first time that you learned of Dr. Crenshaw's book when you were in Florida participating in the discussions with Drs. Humes

and Boswell?

A I'm not sure.

Q Do you have any reason to believe that you were aware of Dr. Crenshaw's book prior to the time that you were in Florida having your discussions with Drs. Humes and Boswell?

A Not that I recall.

Q After you learned of Dr. Crenshaw's book did you set about contacting people looking for sources of information on Dr. Crenshaw and/or his book?

A No.

Q Why did you contact your confidential sources?

A May I consult with counsel?

THE VIDEO OPERATOR: Audio off, 1:06.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back on, 1:06.

THE WITNESS: I contacted sources to get background information to help us in our study.

BY MR. KIZZIA:

Q Background information on what?

A Any information that might be helpful in studying the situation of the autopsies.

Q Did you contact any of your confidential sources with a specific purpose of obtaining information

on Dr. Crenshaw or his book?

A No.

Q Are you saying then that during your conversations with your confidential sources about matters relevant to the JFK autopsy, the subject of Dr. Crenshaw or his book just came up?

A Yes.

Q Was that something that you brought up?

A No.

Q It was something that your confidential sources brought up?

A Yes.

Q Were your confidential sources completely confidential sources or were they confidential sources only with regard to part of the information that they provided to you?

A I've answered that question when phrased a different way. I don't believe I wish to change my answer unless you wish to ask the question in a way that I can answer unambiguously.

Q Well, you said that you contacted your confidential sources to discuss matters pertaining to the JFK autopsy; is that correct?

A Yes and no.

MR. BABCOCK: It's not exactly what he said, but generally.

BY MR. KIZZIA:

Q Could you explain what you mean by yes and no?

A The process of which I'll have to rephrase the question myself.

Q Okay.

MR. BABCOCK: Sure.

THE WITNESS: Communication may be uni or bidirectional. And when you say I contacted a source, the implication is that I personally contacted rather than I was contacted by a source, and this is muddying up the questions.

BY MR. KIZZIA:

Q Are you saying then that sometimes you contacted the confidential sources and in some cases you were contacted by your confidential sources?

A That is correct.

Q Let's focus on the occasions that you contacted your confidential sources. Did you do so with the purpose of obtaining information regarding Dr. Crenshaw or his book?

A Not specifically.

Q Did you do so to obtain information relevant to

the JFK autopsy?

A Yes.

Q Were such confidential sources confidential as to anything they discussed with you pertaining to the JFK autopsy or were they confidential sources solely as to what information they related to you concerning Dr. Crenshaw or his book?

A Anything.

Q And that was your understanding at the outset of your conversations with such sources?

A That is correct.

Q With regard to those sources who contacted you, did they provide you information pertaining to the JFK autopsy that had nothing to do with Dr. Crenshaw or his book?

A Yes.

Q Was such information expected to be confidential, such other information. I'm talking about information other than that which pertained to Dr. Crenshaw's book?

A Yes.

Q How did such persons or such sources know to contact you?

MR. BABCOCK: Objection, calls for speculation as to

what they might know.

BY MR. KIZZIA:

Q Dr. Lundberg, was it common knowledge --

MR. BABCOCK: That's going to draw an objection, too.

BY MR. KIZZIA:

Q I'm asking what you know now. Do you know whether or not it was common knowledge among people in the American Medical Association that JAMA was going to publish articles pertaining to the JFK assassination in 1992?

MR. BABCOCK: Objection, calls for speculation.

THE WITNESS: I don't know what counsel means by common knowledge.

BY MR. KIZZIA:

Q Do you know how sources who contacted you came to know that JAMA was working on articles in 1992 pertaining to the JFK assassination?

MR. BABCOCK: Objection to the form of the question. It assumes they did.

Go ahead and answer if you can.

THE WITNESS: Yes, I know.

BY MR. KIZZIA:

Q How do you know?

A I will not say because that would disclose -- that would threaten the confidentiality relationship.

Q How would that threaten the confidential relationship?

A It might be possible to sift through relationships and ways to know that that could come at who the person or persons might have been, and I can't take that chance.

Q When you were contacted by sources that you are relying upon as confidential sources, do you know whether or not the sources who contacted you knew that you and/or JAMA were working on articles pertaining to the JFK assassination?

A Yes.

Q Did such sources know?

A Yes and no.

Q Please explain your answer.

A Some did and some didn't.

Q And you do know how those who did know about the articles came to know about it?

A Yes.

Q But you are not willing to say how they came to know about it?

A That is correct.

Q All right.

What was your understanding as to the reasons why you were contacted by persons who didn't know that JAMA was working on articles pertaining to the JFK assassination?

A I don't know.

Q You mean you just received calls out of the blue from certain people?

A Yes.

Q Did your communications with your confidential sources and your passing on of that information to Mr. Breo occur prior to the time that Mr. Breo wrote the two JAMA articles that were published on May 27th, 1992?

A Yes.

Q Do you have any reason to believe that Mr. Breo disclosed any of your confidential sources to anyone?

A I don't know.

Q Do you have any reason to believe that any other representative of JAMA may have disclosed any of your confidential sources to anyone?

MR. BABCOCK: Object to the form of the question.

THE WITNESS: I don't know.

BY MR. KIZZIA:

Q Did you receive any of your information from

your confidential sources prior to the time that you met with Dr. Boswell and Dr. Humes in Florida in April of 1992?

MR. BABCOCK: That question has been asked and answered.

Go ahead.

THE WITNESS: The question precisely as stated and the answer is yes.

BY MR. KIZZIA:

Q Did you disclose your confidential sources or any of your confidential sources to Dr. Humes or Dr. Boswell?

A No.

Q Did you personally speak with any of the other physicians that Mr. Breo interviewed for his articles that were published in JAMA on May 27th, 1992?

MR. BABCOCK: What do you mean? Do you mean the Dallas physicians or any of them? He was in Florida for them.

MR. KIZZIA: I'm sorry?

MR. BABCOCK: He was in Florida.

MR. KIZZIA: Right. I didn't limit it to any city.

BY MR. KIZZIA:

Q The articles that were published in JAMA on May

27th, 1992 that were written by Mr. Breo refer to his interviews with Dr. Humes, Dr. Boswell, Dr. Carrico, Dr. Jenkins, Dr. Baxter, Dr. McClelland, Dr. Rose --

MR. BABCOCK: A bunch of doctors.

BY MR. KIZZIA:

Q Can you remember any others off the top of your head?

A No.

Q Did you personally interview or take part in any of the interviews other than the interviews with Dr. Boswell and Dr. Humes?

A I did not.

Q Did you speak with any of those doctors who are identified in the articles as having been interviewed by Mr. Breo?

A When? In my life? For that presentation?

MR. BABCOCK: I think he's excluding Boswell and Humes.

MR. KIZZIA: Right.

THE WITNESS: I know. But my question remains. Did I speak is open ended. In my lifetime? In their lifetime? In preparation for that article? When? Ever?

BY MR. KIZZIA:

Q All right. Let's start with in preparation for the articles. Did you speak with any of those doctors other than Dr. Humes and Dr. Boswell?

A Yes.

Q Which doctors did you speak to?

A Dr. Rose.

Q Did you speak with any of the other doctors who Mr. Breo mentions in his articles as having been interviewed by him other than Dr. Boswell, Dr. Humes and Dr. Rose?

A No, assuming your question still applies to in preparation for that article.

Q Right.

Since January 1st, 1992, have you spoken with any of the physicians mentioned in the two articles published in JAMA on May 27th, 1992, that were written by Mr. Breo and which he states in the articles that he interviewed other than Dr. Humes, Dr. Boswell and Dr. Rose?

A No.

Q Did you disclose any of your confidential sources to Dr. Rose?

A No.

Q What is your understanding of the purpose of the AMA's media embargo policy regarding release of information concerning JAMA articles?

A The first purpose is to be fair to all media people so that all press have an equal chance to report on articles from JAMA to the public. With a common embargo date no one can get a jump in their reporting on the articles.

The second is to provide the public media whenever possible with time to study the articles and to write -- to do additional interviews if needed and to write responsible articles as accurately as possible for the public based upon what they read in our Journal.

Q You mean before the articles are actually published in JAMA?

A Before the date on the cover.

So the main purpose is to -- And third, to not produce any level of favoritism on the part of the publisher or the editor or authors for one media versus any other which could occur if there were not an embargo date.

Those are the three main reasons. Embargoes go back at least to the war between the states. They may even go back to Napoleonic wars.

It's a common process, and we simply apply the traditional embargo approach to our articles.

Q Is one of the purposes for the media embargo policy to allow an opportunity for JAMA subscribers to read JAMA articles before the press or the media does stories on them?

A That is not the purpose of the embargo, but that is the reason for us binding and mailing the Journal so many days in advance of the embargo so that doctors have a chance to have the Journal and generally do have the Journal available to them to read before their patients see the same articles reported in the public media so when the patients come to the doctor the next day or call him on the phone about their disease or their treatment, if there's something in the Journal that's different from that, the doctor has a chance to see the full article and respond to the patient rather than be confused. But that's not the embargo. That's the mailing date.

Q How was the AMA media embargo policy altered if it was with regard to the two articles written by Mr. Breo that were published in JAMA on May 27th, 1992?

A The embargo time was altered and moved up by telling all the media that there was a change in the

embargo date and that it would be a specific date or time which was a Tuesday concurrent with the press conference in New York rather than a later time which would have been the normal time for that issue of JAMA.

Q So the result was that the media received information concerning the articles and could report concerning the articles before subscribers to JAMA received the articles?

A The date that was set was the same day as the general mailing. We don't know when subscribers receive the Journal, but some receive it very quickly, for some its longer.

And the press conference was set at the date of the approximate mailing within a day or so of the mailing rather than waiting for a week and a half for the usual embargo time.

Q But in this particular case then in all likelihood there were reports in the media about the press conference that occurred on May 19th, 1992, before some of the subscribers to JAMA received the articles?

A That is true.

THE VIDEO OPERATOR: Going off the record. This is the end of tape one, December 28th. The time is 1:24 p.m.

MR. BABCOCK: Pursuant to a supplemental notice to take the videotaped deposition of Dr. George Lundberg dated December 21, 1993, in which my client received on the 23rd of December we are producing certain documents identified as follows: A document called, "Instructions For Authors" dated January 1, 1992, which is seven pages long; a document entitled, "Instructions For Authors" dated July 1, 1992, which is seven pages; a document entitled, "Instructions For Authors" dated January 6th 1993, which is seven pages long; a document entitled, "Instructions For Authors" dated July 7, 1993, which is seven pages long; a set of mostly -- Well, I won't say mostly. Of handwritten and typewritten notes consisting of 15 pages; a single document which is page 84 out of the American Medical Association Manual of Style, the eighth edition.

MR. KIZZIA: Wayne, would there be any problem with making a copy of the cover of that? Is that a good idea, Chip?

MR. BABCOCK: Sure.

Off the record for a second.

(Discussion held off the record.)

MR. BABCOCK: Back on the record.

A single document with the heading,

"Letters" dated December 15th, 1993; another document, single document, entitled "Letters" dated October 21, 1992; and another single document labeled "Letters" dated January 1, 1992; and then an original document called, "Uniform Requirements For Manuscripts Submitted To Biomedical Journals And Supplemental Statements From the International Committee of Medical Journal Editors, 1993."

And we don't have a copy of this, Brad, but you are welcome to look at it today. And then the manual of style that is also an original document that you are welcome to look at.

MR. KIZZIA: Would you mind if we allowed this original document that's entitled, "Uniform Requirements For Manuscripts Submitted To Biomedical Journals" to go with the court reporter today for the purpose of copying and with the understanding that the original will be returned to you?

MR. BABCOCK: It's okay with me if it's all right with the witness.

THE WITNESS: I have no objection.

MR. BABCOCK: All right. That's fine.

MR. KIZZIA: Can we proceed then?

MR. BABCOCK: Yeah.

THE VIDEO OPERATOR: We're back on the record. This is the beginning of tape two on December 28th. The time is 1:31 p.m.

BY MR. KIZZIA:

Q Dr. Lundberg, during our break your counsel produced to me some copies of some documents, but before getting to those documents I just wanted to finish up on one train of thought that I had, and that is, you said that in this particular case it is likely that members of the AMA or subscribers to JAMA may have seen comments in the media about the May 27th, 1992, JAMA articles that were written by Mr. Breo before such physicians actually got their copies of the JAMA articles.

And my question for you is why was that allowed to happen in this particular case?

A The reason for the mailing date prior to the embargo date was, as I explained earlier, so that patients who were under the care of doctors for given diseases will not have a confusion between the doctor and patients about their disease and its treatment produced by research reports in the lay literature based upon articles in our Journal without the doctor having the full information from the Journal article.

There's nothing in the two Breo articles

that has anything whatever to do with how doctors are taking care of patients on a day-to-day basis, so it was irrelevant from the standpoint of protecting doctors and their patients from confusion or mistreatment for there to be such a gap time.

Q Any other reason that the normal approach wasn't taken in this particular case?

A Yes.

Q Please elaborate.

A It was believed I am told by the communication group that because of the nature of the public figure of the president and the nature of the information within the articles written by Mr. Breo that public media would probably almost certainly fail to honor the embargo and some newspaper, magazine, wire service, radio or television reporter would report on the content of the Breo articles as soon as they were received.

And when one media person breaks the embargo, it puts great pressure on the entire system, and it goes like a flock of dominoes which causes great confusion and consternation.

So the professionals handling it in their good judgment believe that the embargo would fail to stand so they chose to release it to all the media at

the same time at a press conference with the embargo release at that time to be fair to all media. And since there was no patient care concern it was felt nothing would be hurt.

Q Dr. Lundberg, I'll hand you what I have marked for identification purposes Exhibit 48 and ask you if you can identify that document?

A Exhibit 48 is instructions for authors dated January 1, 1992, from the Journal of the American Medical Association, volume 267, number one, page 41.

Q Let me show you what I've had marked for identification purposes Exhibit 49.

Can you identify that document for me?

A It is instructions for authors from JAMA July 1, 1992, volume 268, number one beginning on page 41.

Q Were the instructions for authors revised between January 1st, 1992, and July 1st, 1992?

A I don't know.

Q Do you know whether or not the instructions for authors that is shown in Exhibit 49 is different in any respect from the instructions to authors that is shown in Exhibit 48?

A I don't know. I'd have to compare them side by side. I don't have that in my memory.

Q Let me show you what I've had marked for identification purposes as Exhibit 50.

Can you identify that document for me?

A Exhibit 50 is instructions for authors, JAMA, January 6, 1993, volume 269 beginning on page 152.

Q Do you know whether or not the instructions for authors that is marked as Exhibit 50 which was published in JAMA on January 6, 1993, is different in any respect from the instructions for authors that were previously published and which were marked as Exhibits 48 and 49?

A I do not.

Q Let me show you what I've had marked for identification purposes Exhibit 51.

Can you identify that document for me?

A Exhibit 51 is instructions for authors for JAMA , July 7, 1993, volume 270 number one beginning on page 33.

Q Dr. Lundberg, do you know whether or not the instructions for authors that was published in JAMA on July 7th, 1993, is different in any respect from the instructions for authors that were previously published in JAMA which are shown in Exhibits 48, 49 and 50?

A I do not.

Q Did you participate in preparation of the

instructions for authors for JAMA?

A Yes.

Q What was your participation?

A Number one, to decide that they would exist.

Number two, to decide that they would be published once each volume of the Journal in an early time in that volume.

Number three, that they consist of sections that deal with major issues and what those sections are.

Number four, that highly competent qualified editors on my staff would write them, rewrite them, revise them as needed and republish them as needed.

Fifth, that I would review final copy and make questions or changes as needed prior to final publication.

Q Did you participate in the drafting of the particular instructions for authors that are shown in Exhibits 48, 49, 50, and 51?

A No.

Q Did you participate in any revisions that may have been made to the instructions for authors that are shown in Exhibits 48, 49, 50 and 51?

A Yes.

Q What was your participation?

A Approval authority.

Q But as you sit here today, you don't recall whether or not you approved any revisions for the instructions to authors since January 1st, 1992?

A Anything that's in there I approved. They speak for themselves.

MR. KIZZIA: Objection, nonresponsive.

BY MR. KIZZIA:

Q Do you recall approving any instructions for authors for JAMA since January 1st, 1992?

A Yes.

Q Do you recall how many times you approved revisions to the instructions for authors for JAMA since January 1st, 1992?

A No.

Q Do you recall any specific revisions that may have been made for instructions for authors for JAMA since January 1st, 1992?

A No.

Q Dr. Lundberg, let me show you what I've had marked for identification purposes as Exhibit 52.

Can you identify Exhibit 52?

A Exhibit 52 is labeled, "Letters, JAMA, January 1, 1992, volume 267, number one, page 51."

Q Does Exhibit No. 52 contain JAMA's guidelines for letters as they existed on January 1st, 1992?

A Yes.

Q Let me show you what I've had marked for identification purposes Exhibit 53.

Can you identify Exhibit 53?

A Yes.

Q What is Exhibit 53?

A One page called "Letters" dated JAMA, October 21, 1992, volume 268, number 15, page 2029.

Q Does Exhibit 53 contain JAMA's guidelines for letters as they existed on October 21, 1992?

A It does.

Q Do you know whether or not JAMA's guidelines for letters changed between January 1st, 1992, and January -- I'm sorry. And July -- Well, shoot. Let me rephrase the question.

Do you know whether or not JAMA's guidelines for letters changed between January 1st, 1992, and October 21st, 1992?

A I do not.

Q Do you know whether or not the guidelines for

letters that are stated in Exhibits 52 and 53 are different in any regard?

A Yes.

Q What do you know about any differences that may exist between --

A On Exhibit 52 the guidelines for letters is laid out in a three-column format and Exhibit 52 it's laid out in a two-column format.

Q Do you know of any other distinctions?

A No, but then again I haven't read them lately.

Q Let me show you what I've had marked for identification purposes Exhibit 54?

A It is letters, JAMA, December 15, 1993, volume 270, number 23, page 2805.

Q Does Exhibit 54 contain the requirements for letters to JAMA as they existed on December 15th, 1993?

A It does.

Q Do you know whether or not those requirements or guidelines were revised between October 21st, 1992, and December 15th, 1993?

A Yes.

Q Were they revised?

A They were.

Q How were they revised?

A They have a different title. One is called, "Guidelines." The other is called, "Requirements."

Q Any other changes?

A I don't know about the others. Looking at them at this moment I see that the most recent one says, "See also instructions for authors, (July 7, 1993)."

And the earlier ones didn't say that. But short of comparing them word for word, I don't know if there are any differences.

Q Did you participate in the preparation of the guidelines for letters or requirements for letters to JAMA?

A I did not.

Q Who at JAMA was responsible for preparation of the guidelines for letters or requirements for letters and any revisions thereto?

A Dr. Drummond Rennie is in charge of letters. Currently Dr. Margaret Winker works with Dr. Rennie. And prior to Dr. Winker Dr. Bruce Dan, D-a-n, was the editor of letters with Dr. Rennie.

MR. BABCOCK: We have been all over this a couple times?

THE WITNESS: This is all repeated information from prior questions and answers.

BY MR. KIZZIA:

Q Is Dr. Dan still with JAMA?

A No. He left sometime ago.

Q Who would have been responsible for any revisions to the instructions for authors that were made between January 1st, 1992, and today as may be shown in Exhibits 48, 49, 50 and 51?

A Any and all of the editorial staff.

Q Nobody had primary responsibility for that?

A I had primary responsibility. I'm responsible for everything.

Q But you couldn't recall any revisions. So is there anyone that would have been secondarily responsible?

A Well, as I testified, instruction for authors are looked at and reviewed every six months and revised in response to input from any and all editors and staff all of whose suggestions are taken, considered, correlated, interpreted, put in place, reviewed, and signed off on by many individuals.

Q But you wouldn't single out any JAMA representative other than yourself as having more responsibility than others for revisions to the instructions for authors?

A I suppose that there are four or five or six people more responsible than the other 20 or 30. That's not singling out.

Q Let me show you what I've had marked for identification purposes as Exhibit 55.

Can you identify that for me?

A Exhibit 55 is a photocopy of the cover of the American Medical Association Manual of Style, eighth edition.

The second page is page 84 from that book entitled at the top, "Typesetting/proofreading 4.5 through 4.10."

Q Does the second page of Exhibit 55 state JAMA's correction policy?

A Yes and no.

Q Please explain your answer.

A It states the policy of corrections of the AMA manual on style. JAMA's policy is to include this information as part of its policy for corrections.

Q So it's AMA policy that is followed by JAMA?

A It may or may not be followed by JAMA.

Q Why would it not be followed by JAMA?

A Because we do a lot of individualization.

Q Well, I notice that in the second sentence of

the paragraph referencing corrections on page two of Exhibit 55 it's stated, "In JAMA corrections are printed at the end of the letters to the editor column."

Did I read that correctly?

A Yes, you did.

Q Is there anything stated in the paragraph regarding corrections on page two of Exhibit 55 that you do not think applies to JAMA?

A No.

Q Let me show you what I've had marked for identification purposes Exhibit 56.

Can you identify that for me, please?

A Exhibit 56 is a booklet entitled "Uniform Requirements for Manuscripts Submitted to Biomedical Journals and Supplemental Statements from the International Committee of Medical Journal Editors dated 1993."

Q Last week during the first part of your deposition you identified two publications as being authoritative in your opinion with regard to journalistic or editorial ethics.

Was that one of the documents or publications that you referred to that's marked as Exhibit 56?

MR. BABCOCK: Object to the form of the question.

THE WITNESS: Having not reviewed the testimony from last week having not been provided with it, I do not recall the exact phraseology so I will not corroborate your statement that I said such and such.

BY MR. KIZZIA:

Q Do you consider the Uniform Requirements for Manuscripts Submitted to Biomedical Journals and Supplemental Statements from the International Committee of Medical Journal Editors 1993, which is marked as Exhibit 56, authoritative on editorial ethics?

A I do.

Q Do you consider the American Medical Association Manual of Style, eighth edition, as authoritative on editorial and journalistic ethics?

A I do not.

Q Do you consider the American Medical Association Manual of Style, eighth edition, authoritative on anything?

A I do.

Q What do you consider it to be authoritative on?

A Style.

Q Was there or is there any other publication other than that marked as Exhibit 56 which you consider

to be authoritative on editorial or journalistic ethics?

A No.

Q Let me show you what I've had marked for identification purposes Exhibit 57.

Would you please identify Exhibit 57 for me.

A Exhibit 57 is the photocopy of the written text from which I spoke on April 3, 1993, at a conference in Chicago.

Q The first nine pages of Exhibit 57 are in handwriting. Do you see that?

A Yes.

Q Is that your handwriting?

A It is.

Q Is there any portion of the handwriting contained on the first nine pages of Exhibit 57 that is not in your handwriting?

A No.

Q The last two pages of Exhibit 57 are also in handwriting. Do you see that?

A I do.

Q Are those last two pages in your handwriting?

A They are.

Q Is there any handwriting on the last two pages

of Exhibit 57 that is not yours?

A There is not.

Q The four typewritten pages in between the pages of handwriting appear similar to the written remarks that you prepared for your May 19th, 1992, press conference with some revisions.

Would that be a fair description of those typewritten pages?

A That's fair.

MR. BABCOCK: Read that question back, please.

THE WITNESS: Sorry.

MR. BABCOCK: That's all right.

(Record read.)

THE WITNESS: It would.

BY MR. KIZZIA:

Q You said last week that JAMA is published in multiple countries in multiple languages; is that right?

A That is right.

Q Is that true then of the May 27th, 1992, articles that were written by Mr. Breo, that they were published in multiple countries in multiple languages?

A Yes.

Q You indicated last week that there probably were some copy editors that worked on the two articles

written by Mr. Breo that were published in JAMA on May 27th, 1992. Do you have any recollection of who the copy editors were?

A No.

Q You have not been to any school of journalism, have you?

A I have not.

Q Do you have any formal training as an editor?

A No.

Q You mentioned last week that you are a host of a television program on CNBC called JAMA Medical Rounds?

A That is true.

Q Is that a program that's broadcast nationwide?

A It is.

Q And that is broadcast nationwide weekly?

A Weekly.

Q Since you've been a host has that program had a show that's focused on any aspect of the JFK assassination?

A I need to consult with counsel.

THE VIDEO OPERATOR: Audio off, 1:59 p.m.

(Discussion held off the record.)

THE VIDEO OPERATOR: Back on, 2:00 p.m.

THE WITNESS: Since I have been hosting the program

called JAMA Medical Rounds there's been no discussion regarding the JFK assassination or autopsy.

BY MR. KIZZIA:

Q Has there been any other host of that program?

A Yes.

Q Prior to May 1st of 1993?

A No.

Q Did you say that the program started on May 1st, 1993?

A My testimony is that JAMA Medical Rounds started on May 1st, 1993.

Q Prior to May 1st, 1993, did you appear on any program for CNBC that focused on any aspect of the JFK assassination?

A Yes.

Q What program was that?

A As testified to last week a nighttime talk show out of New York City or Fort Lee, New Jersey, immediately after the press conference in New York.

Q Did you participate in any program regarding any aspect of the JFK assassination on CNBC following the remarks that you made at a conference in Chicago on April 3rd, 1993?

A Yes.

Q What program was that?

A Medical Rounds.

Q Was this before you became host of that program?

A No.

Q Are you saying that Medical Rounds was a different program from JAMA Medical Rounds?

A Yes.

Q How were the programs different?

A I'm responsible for editorial content on JAMA Medical Rounds. I was not responsible for editorial content on the program before it became JAMA Medical Rounds.

Q Before you became responsible for the editorial comment --

MR. BABCOCK: Content.

BY MR. KIZZIA:

Q Content of Medical Rounds, did you participate in a program that focused on the JFK assassination?

A Yes.

Q When was that?

A In, I think, April of 1993. I don't recall the date.

Q Who was the host of the program?

A I was.

Q What was the name of the program?

A Medical Rounds.

Q Were you the host of Medical Rounds before it became JAMA Medical Rounds?

A Yes.

Q What was the nature of the program that was on CNBC in April 1993?

A There were four programs on CNBC in April 1993.

Q You are talking about one each week?

A Yes.

Q Did all four of them focus on the JFK assassination?

A No.

Q How many of them did?

A One did.

MR. BABCOCK: Part of one.

THE WITNESS: Part of one.

BY MR. KIZZIA:

Q Let's talk about that one.

Can you describe that program?

A There was a discussion involving three or four people about their observations and opinions regarding the autopsy and related subjects about the

JFK assassination.

Q Who were the participants in that program?

A Dr. John Lattimer, Dr. West, and the third name I'm blocking on, but he is the curator of the National Museum of Health and Medicine in Washington D.C.

Q Did you invite those persons to participate in that program?

A No.

Q Who did?

A The producer.

Q Who was the producer at that time?

A I don't recall. There was turn over of personnel, and I'm not sure who was producer that day.

Q Did those persons participate in the Chicago conference?

A They did.

Q How did the producer of the Medical Rounds program know that they were even available to discuss that topic?

MR. BABCOCK: Objection, calls for speculation.

BY MR. KIZZIA:

Q Do you know how the producer knew?

A Do I know? No, I don't know.

Q Are you saying that you didn't tell the

producer of the program about the conference in Chicago and that those individuals were in town speaking on the JFK assassination and that they would be available to participate in the program that you were hosting?

A Is counsel trying to put words in my mouth? I don't recall saying any of that.

Q I know.

Are you saying that that didn't happen that way?

You said that you don't know how your producer knew about them being involved and present.

A That's true.

Q What led or what was your involvement in the connection between the conference in Chicago at which these individuals participated and the program on CNBC that followed?

A Well, my involvement with the program in Chicago I was the chair of the panel that appeared at this assassination symposium at the Illinois center, the introductory comments of which you are holding in your hand.

I put that panel together at the request of the organizers of the program who contacted me and asked me to by letter and by telephone many months

before, and I did. I presume, but I'm not supposed to say this, but I'm trying to help you.

MR. BABCOCK: Don't try to help him. Just give him the facts. Don't speculate or don't presume things.

THE WITNESS: The assassination program from that symposium was widely distributed with dates and names and place with particular emphasis to media according to the organizer who told me he was doing that. And I received such in the mail.

The Medical Rounds producer receives mailings all the time on PR stuff. Perhaps they were sent that. The names were all listed.

BY MR. KIZZIA:

Q From where is JAMA Medical Rounds broadcast.

A CNBC in Fort Lee, New Jersey.

Q From where was the CNBC program Medical Rounds broadcast in April 1993, and I'm talking about the program that focused in part on the JFK assassination?

A It was broadcast from Fort Lee, New Jersey.

Q Did you and the others who participated in the conference in Chicago travel to New Jersey for the program?

A No.

Q Where were you and the other participants in

the Chicago conference at the time that the program was broadcast?

A I know I was in my home, but I don't know where the others were.

May I make a correction? That is a mistake. I apologize. I believe -- I have to withdraw. I don't know where I was at the time that program was broadcast.

Q I take it that the CNBC program is not broadcast live?

A That is true.

Q Is it taped?

A It is taped.

Q Where was the program taped in April 1993?

A In Chicago.

Q Is it taped there normally?

A Yes.

Q Because that's where you are and you are the host?

A That's not why it's taped in Chicago because that's where the studio is and where the producers are.

Q Where is the studio?

A At 515 North State Street, Chicago, Illinois, 60610.

Q The AMA building?

A The building that the AMA leases part of from John Buck.

Q Is the studio among that space leased by the AMA?

A It is.

Q What is the difference between Robin Matell's position with the AMA and that of Larry Joyce?

A Mr. Joyce is Mr. Matell's supervisor.

Q Do you consider Mr. Matell to be your superior?

A No.

Q Dr. Lundberg, I want to refer you to Deposition Exhibit 3DD.

Do you see the handwriting in the top left-hand corner of Exhibit 3DD?

A I do.

Q Is that your handwriting?

A It is.

Q It says, "original as distributed to media"?

A It does.

Q Does that mean that the text of your remarks at the May 19th, 1992, press conference that is shown as Exhibit 3DD was distributed to the media?

A In a sense.

Q Please explain your answer.

A It was available at the press conference in New York City for anyone who chose to pick it up. It was not sent anywhere.

Q I refer you to Exhibit 3V as in Victor. You see that that's a copy of a document entitled, "script for Monday JFK autopsy press conference calls to major media"?

A Yes.

Q What day of the week was the press conference held on?

A My recollection was it was Tuesday, but that's working from memory.

Q Do you see near the end of the first paragraph where it refers to tomorrow morning beginning at 10:00 a.m.?

A Yes.

Q Suggesting that this information was shared with the media the day before the press conference?

MR. BABCOCK: Object to the form of the question. The document says what it says.

If you know it meant something else, you can tell him.

THE WITNESS: Usually if you say tomorrow and it's

Monday, tomorrow is Tuesday. But I see no date on this document. I don't even see a year.

BY MR. KIZZIA:

Q Was it your understanding that information was shared with the media in advance of the press conference that took place at 10:00 a.m. on May 19th, 1992?

A I didn't know, but -- Well, I didn't know if there was or wasn't.

Q Look at the fourth paragraph on the bottom where it says, "At the news conference we will have copies of both entire articles."

Were both of Mr. Breo's articles that were published in the May 27th, 1992, edition of JAMA copied and made available for the media at the press conference?

A Yes.

Q Look back up to the first sentence of the third paragraph. It states that, "We are notifying you because we will release an interview to be published in JAMA." Do you see that?

A Yes.

Q Was a text or any interview with any of the doctors made available to the media?

MR. BABCOCK: Objection to the form of the question.

You read a sentence from a document that this witness has not identified and then you connect it to something else. The question is improper. I object to it.

THE WITNESS: I guess I need to hear a fresh question and figure out what you are trying to ask.

BY MR. KIZZIA:

Q Let me ask you a different way.

Do you know what was referred to in the first line of the third paragraph where it states, "an interview to be published in JAMA will be released"?

A I don't know any more than what you do reading that.

MR. BABCOCK: Then you don't know.

BY MR. KIZZIA:

Q So are you saying you don't know what that refers to?

A Well, it says, "We are notifying you because we will release an interview to be published in JAMA with the pathologist who performed the autopsy on President Kennedy." That kind of speaks for itself.

Q My question to you is do you know what is referred to there as an interview that's to be released?

MR. BABCOCK: If you have knowledge above and beyond what's in that document about what that document is

referring to.

THE WITNESS: Well, I know that the May 27 JAMA included a journalism article written by Mr. Breo based in part on interviews with the pathologists who performed the autopsy on President Kennedy. That's fairly obvious.

MR. BABCOCK: It may or may not be to Mr. Kizzia, but he'll ask you another question.

BY MR. KIZZIA:

Q Did you ever see any transcripts of interviews with any of the doctors that Mr. Breo participated in prior to writing his articles that were published in JAMA on May 27th, 1992?

MR. BABCOCK: That question has been asked and answered several times.

THE WITNESS: Asked and answered. The answer is no.

BY MR. KIZZIA:

Q I refer you to Exhibit 3U, which is a copy of the text of your remarks at the press conference.

Do you see that?

A If you are asking me to answer the question which corroborates what you said in your total sentence, I will say no.

Q What is the reason for that response?

A Because counsel knows based on prior testimony that this is not the text of my remarks to the press conference.

Q Well, it's one of the versions of the text that you prepared.

MR. BABCOCK: That's not the question you asked him.

MR. KIZZIA: Okay.

BY MR. KIZZIA:

Q Exhibit 3U is a copy of a version of the text of the remarks that was later revised; is that right?

A 3U is a copy of a draft which several iterations later was presented which several iterations later served as the basis for my verbal remarks.

Q Did you prepare the draft that's marked as Exhibit 3U?

A No.

Q Who did?

A My secretary.

Q Are you saying she typed it?

A She entered in the word processor no longer known as typed and had the printer print it out in response to my dictation.

Q So you dictated the draft of the remarks that's marked as Exhibit 3U?

A I dictated an initial draft. From that point forward worked in revisions on the draft without dictation. This was an early iteration.

Q Is Exhibit 3U the result of your dictation?

A 3U?

Q Yes, sir.

A It is.

Q Look down near just below half way through the first page where it states that you will make a six-minute summary statement then we will give all of you folders of written material from JAMA. Do you see that?

A I see that.

Q Was that done? Were folders of written material from JAMA provided to those who attended the press conference?

A Was that done? I made a summary statement, but I do not know if it was six minutes. I didn't time it.

I do not know whether folders of written material from JAMA were given.

Q Well, when you dictated that we will give all of you folders of written material from JAMA, what was your understanding as to what would be provided to those who attended the press conference?

A I believe that there would be the full JAMA from that date or those articles by Mr. Breo provided to the people who attended the press conference.

Q Did you have any understanding about any other written material from JAMA that would be in the folders to be provided to people who attended the press conference?

A I believe that there would be a press release of some kind which is normally done weekly for JAMA.

Q Anything else that you understood to be in the folder of written materials from JAMA?

A No.

Q I refer you to Exhibit 3EE. That is a copy of the actual text that you used in making your remarks at the press conference on May 19th, 1992; is that right?

A Yes. Or very close to it as a basis for remarks, not necessarily stated verbatim.

Q On the third page of Exhibit 3EE at the top you referred to 14 pages of journalism in the May 27th, 1992, issue of JAMA. Do you see that?

A I do.

Q Was that a reference to the two articles written by Mr. Breo pertaining to the JFK assassination?

A It was.

Q See where you scratched out the word "original" so instead of saying "original journalism" you just said "journalism," do you see that?

A What is the question?

Q Do you see where you made that change, scratching out the word "original" so that your remarks read "journalism" instead of "original journalism"?

A As testified a week ago, I know my handwriting, but I don't know my marks. Lines are lines, and I can't tell you whether I or someone else made that mark based upon my recognition of my handwriting.

Q All right.

Why were your remarks revised to refer to Mr. Breo's articles as 14 pages of journalism as opposed to 14 pages of original journalism as originally drafted?

A I don't know, and I don't know when that was done, when the revision occurred. I can't tell if I did it.

MR. BABCOCK: Your answer "I don't know" is responsive.

THE WITNESS: Yeah.

BY MR. KIZZIA:

Q On the next line you refer to a special 11,000

word report written by Mr. Breo. Do you see that?

A I see that.

Q Is that a reference to the two articles written by Mr. Breo that were published in JAMA on May 27th, 1992?

A It is.

Q The next line contains some revisions. Do you see that?

A I do.

Q Are those handwritten revisions in your handwriting?

A They are.

MR. BABCOCK: I'll object. We've been all through this document last week and including that question about his handwriting.

BY MR. KIZZIA:

Q Why was the statement revised to say that the physicians agreed to speak with JAMA as opposed to the original version that said that all physicians spoke exclusively with JAMA.

A To downplay the exclusivity in the hope that they would speak with others.

Q But a few lines later it is stated that they do not plan to give further interviews. Do you see that?

A I do.

Q What was your understanding as to why the physicians did not plan to give further interviews?

A Which physicians?

Q The ones that you were referring to there.

A First off, it would be a different answer for different physicians. Second off, it would all be speculation. So I can't tell you.

Q So you are saying you don't know?

A That's right.

Q I refer you to the last page of that exhibit, first line. It stated that the recent Crenshaw book JFK : Conspiracy of Silence is a sad fabrication based upon unsubstantiated allegations.

Do you see that?

A I do.

Q Now last week I asked you what you meant by fabrication, and you stated what you meant by that.

But my question to you, Dr. Lundberg, is do you understand what the common definition of the word fabrication is?

MR. BABCOCK: Object to the form of the question. I don't know that there is any such thing.

BY MR. KIZZIA:

Q Let me ask you this way, Dr. Lundberg.

Back on or about May 19th, 1992, when you were preparing your remarks and when you've rendered them at the press conference on that date, what was your understanding as to the commonly understood definition of the word fabrication?

MR. BABCOCK: Object to the form of the question. Calls for speculation.

Don't speculate about it.

BY MR. KIZZIA:

Q Or did you have any such understanding?

MR. BABCOCK: Don't speculate about what people may have thought about that.

THE WITNESS: I don't know.

BY MR. KIZZIA:

Q Did you intend to convey the idea with that remark that the authors of the book JFK: Conspiracy of Silence had made up or invented the story related in the book?

A No.

Q Let me show you the definition of the word fabricate from the American Heritage Dictionary.

Can you read that for us?

A The word fabricate. 1A. To fashion or make. 1B. To construct, build. 2. To make up, (a deception).

Q Did you have any idea that by saying what you said on May 19th, 1992, that you might leave the impression among some listeners or readers that you were suggesting that the authors of the book JFK: Conspiracy of Silence had made up what was stated in the book?

MR. BABCOCK: Object to the form of the question. It calls for speculation.

THE WITNESS: I don't know what people would think.

MR. KIZZIA: Objection, nonresponsive.

BY MR. KIZZIA:

Q My question was at the time that you made these remarks on May 19th, 1992, did you have any idea that some listeners or readers of your remarks might come away with the impression that you were suggesting by using the word fabricate that the authors of the book JFK: Conspiracy of Silence had made up what was stated in the book?

MR. BABCOCK: Object to the form of the question. It calls for speculation.

THE WITNESS: I don't know.

BY MR. KIZZIA:

Q But it is your testimony that you did not intend to leave that impression?

MR. BABCOCK: Object to the form of the question. That's not what he said.

BY MR. KIZZIA:

Q Was that your intention to leave that impression?

MR. BABCOCK: Objection to the form of the question. It's vague, ambiguous as to what the impression is.

THE WITNESS: No.

BY MR. KIZZIA:

Q The next line in Exhibit 3EE it is stated that in your opinion the best explanations for the motivation of the myriad conspiracy theorists are -- Could you read the rest of that?

A Natural suspicions, desire for personal recognition and public visibility and profit.

Q What's the next note?

A Four p-s.

Q The four P's?

A Four P's.

Q And as originally drafted the text said paranoia, personal recognition, public visibility

and profit?

A That is true.

Q Is that what you were referring to by the four P's?

A Yes.

Q Was this statement a reference to Dr. Crenshaw or the book JFK: Conspiracy of Silence?

MR. BABCOCK: Objection to the form of the question. The statement says what it says.

You can answer if you can.

THE WITNESS: I believe it speaks for itself. Myriad conspiracy theorists, whoever they are.

BY MR. KIZZIA:

Q Well, was it your intent when you wrote these words and when you stated them at the press conference on May 19th, 1992, that they applied to and include Dr. Crenshaw and his coauthors of the book JFK: Conspiracy of Silence?

A I was referring to hundreds or thousands of people. Conspiracy theorists attempting to explain why they do what they do.

Dr. Crenshaw I didn't put in any particular pot. There or anywhere else.

MR. KIZZIA: Objection, nonresponsive.

MR. BABCOCK: That's responsive.

BY MR. KIZZIA:

Q I just want to know whether or not you intended -- Yes or no. Did you intend that the second statement contained on that page about the four P's apply to and include Dr. Crenshaw and his coauthors, the book JFK: Conspiracy of Silence, which was the preceding statement?

MR. WATLER: Object to the form of the question. You misstated the preceding statement.

MR. BABCOCK: That's a good objection.

THE WITNESS: I wish to consult with counsel.

THE VIDEO OPERATOR: Audio off, 2:37 p.m.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back on, 2:37.

MR. BABCOCK: Read back the question, please.

(Record read.)

THE WITNESS: The answer is no.

BY MR. KIZZIA:

Q About half way down on that page do you see the reference to honest conspiracy theorists?

A I do.

Q Did you intend for the reference to honest conspiracy theorists to apply to and include

Dr. Crenshaw and his coauthors of the book JFK: Conspiracy of Silence?

A No.

Q How do you reconcile the second sentence where you refer to the four P's as applicable to conspiracy theorists and your reference to honest conspiracy theorists later on on that same page?

MR. BABCOCK: The sentence doesn't contain four P's. That's a handwritten note to the side. So I object because it mischaracterizes the speech.

Otherwise go ahead.

THE WITNESS: I don't understand the question of reconciliation. I don't know what you mean.

BY MR. KIZZIA:

Q Do you think that an honest conspiracy theorist can be motivated by paranoia, personal recognition, public visibility and profit?

MR. BABCOCK: That calls for speculation, but.

THE WITNESS: The question is can an honest conspiracy theorist be motivated by paranoia, personal recognition, public visibility and profit?

As a theoretical construct, I suppose the answer is yes.

BY MR. KIZZIA:

Q Well, when you wrote the remarks and delivered them on May 19th, 1992, did you intend to convey the point that honest conspiracy theorists were not motivated by paranoia, personal recognition, public visibility and profit?

MR. BABCOCK: Object to the form of the question. The remarks speak for themselves.

Go ahead and answer if you can.

THE WITNESS: There was no such intent.

BY MR. KIZZIA:

Q In the last paragraph do you see where it's stated "now the conference is open for questions," and then you have handwritten "hand out materials," do you see that?

A Yes.

Q Did you write that?

A Yes.

Q Did you hand out materials?

A No.

Q What was that a reference to?

A Presumably --

MR. BABCOCK: Don't presume. If you remember, you remember. If you don't remember, tell him you

don't remember.

THE WITNESS: It was a reference to what was to have been available to the people who attended the conference, which we already testified to.

BY MR. KIZZIA:

Q Well, why did you write that on there if that wasn't a reminder to you to hand out materials?

A Well, the reason I wrote it there, and I'm sure you notice that I didn't say that, that was an earlier draft, and the arrow points that I didn't say it.

It was turned back over to Mr. Matell before that line. So if you are asking me why did I write it, I hope you are not asking me why I said it, because I didn't.

Q Where do you show that you stopped speaking?

A Robin arrow means that's where Mr. Matell took over.

Q Dr. Lundberg, I refer you to Exhibit 3T?

A T as in Tom?

Q Yes, sir.

Do you see that that is a copy of the American Medical Association news release embargo for release 10:00 a.m. eastern daylight time Tuesday, May 19th, 1992?

A Yes.

Q Refresh my memory if you would --

MR. BABCOCK: You don't have to refresh his memory. He only has to refresh his own memory.

BY MR. KIZZIA:

Q Did you participate in the writing of the news release that's marked as Exhibit 3T?

A As testified one week ago, no.

Q Did you review the news release before it was released to the media?

A As asked and answered last week I don't remember.

Q Look down in the next to the last paragraph where it references the interviews with Dr. Humes and Dr. Boswell, and it refers to those interviews as the first ever public discussion of the case. Do you see that?

A I see that.

Q Is that accurate?

A Yes and no depending on how you look at it.

Q Please explain your answer.

A It's my understanding that Dr. Humes and Dr. Boswell appeared before the Warren Commission and one or two special Congressional investigations.

And if one calls that public discussion, then it's not true. But if one doesn't speak in terms of the official investigation groups, official investigations, it's true or very close to true, but we subsequently discovered that Dr. Humes had been interviewed by CBC, correction, by CBS Television more than two decades before and had appeared on a program with Dan Rather.

But whether a one-on-one television interview constitutes a public discussion again could be argued.

So there's some caveats there, and I guess it depends on how you interpret the phrase.

Q Well, do you consider a one-on-one discussion with a journalist to be a public discussion?

A I guess it depends on whether it's one on one or two on two or whether -- what product that discussion is made available to the world to talk about or whether it's suppressed as to how I would answer that.

Q Do you think that whether or not an interview is done on a one-on-one basis or two-on-two basis makes the difference as to whether or not it's a public discussion or not?

A Probably not.

Q Well, in this particular case you and Mr. Breo went down and met with Mr. Humes and Dr. Boswell in Florida; is that right?

A That is true.

Q And Dr. Humes and Dr. Boswell stated that they would not do any other interviews; is that right?

A That is right.

Q Do you think then that it would be accurate to describe those interviews as public discussion?

A When one considers the amount of public discussion that occurred in response to the publication of those two-on-two interviews, I think it's extremely accurate to call that a public discussion.

On the other hand, they only participated personally by being interviewed by two people who then -- one of whom then wrote up the report.

So I see that one could quibble.

Q Well, are you saying that publication of the two articles written by Breo in JAMA on May 27th, 1992, that pertain to interviews with Dr. Humes and Boswell led to a public discussion?

A Yes, I would posit that it led to extraordinary public discussion which continues this very moment.

Q Of course, at the time this news release was

prepared on May 19th or delivered on May 19th, 1992, that public discussion hadn't taken place; isn't that right?

MR. BABCOCK: Well, I'm going to object on a number of grounds. Number one, he's already testified he didn't write this thing and it's not fair to cross examine him and grill him about what somebody that's not him meant by all this.

Second thing, it doesn't seem to me it's very relevant to this controversy. It doesn't have anything to do with Crenshaw or Shaw, for that matter.

And I had another point, but I can't remember what it was.

MR. RICHEY: Vague and ambiguous.

MR. BABCOCK: Yeah. I think I object on the grounds it's boring, but.

Can we take a quick break? My office called.

MR. KIZZIA: Sure.

THE VIDEO OPERATOR: Going off the record, 2:50 p.m.

(Recess had.)

THE VIDEO OPERATOR: Back on the record, 3:07 p.m.

BY MR. KIZZIA:

Q Dr. Lundberg, at one point in one of the two

articles that Mr. Breo wrote that were published in JAMA on May 27th, 1992, he referred to you as a stickler for detail. Do you remember that?

A Yes.

Q Is that an accurate description of you?

A I presume it's an accurate description of Mr. Breo's views of me.

Q Do you consider yourself to be a stickler for detail?

A Sometimes.

Q And you edited that article and didn't suggest any changes to that description of you; is that right?

MR. BABCOCK: That's a compound question. He edited the article and didn't suggest any changes. Break it down.

BY MR. KIZZIA:

Q In editing Mr. Breo's article did you suggest any change to his description of you as being a stickler for detail?

MR. BABCOCK: Assumes facts not in evidence.

Go ahead.

THE WITNESS: No, I didn't. I didn't suggest that be changed.

BY MR. KIZZIA:

Q Do you think that it is accurate to describe the interviews that you and Mr. Breo did with Dr. Humes and Dr. Boswell in Florida in April of 1992 as a public discussion?

A As I've testified, it was as close to a public discussion as these two have come, and it was our best effort to create such.

So in that sense, yes, although it clearly would have been better had they been willing to make themselves available for open discussion in a public forum at any time.

Q And answer questions presented to them by other medical professionals?

A By any and all.

Q There were questions that were submitted to the physicians through JAMA that they declined to respond to; isn't that correct?

A Yes.

Q JAMA is a peer review scientific journal, correct?

A That is true.

Q In that regard it publishes original medical research articles?

A Yes.

Q But it also publishes journalism; is that right?

A Yes.

Q And in this particular case the articles that were written by Mr. Breo and that were published in JAMA on May 27th, 1992, were journalistic articles?

A That is true.

Q As the editor in chief of JAMA, did you give any consideration to publicizing or otherwise publishing the fact that Mr. Breo's articles of journalism were not subjected to the same peer review process for scientific articles?

MR. BABCOCK: Read that back. I'm sorry.

(Record read.)

MR. BABCOCK: Object to the form of the question. It assumes facts not in evidence.

Go ahead. You can answer.

THE WITNESS: Yes.

BY MR. KIZZIA:

Q You did give consideration to that?

A Yes.

Q Did you publicize or publish that explanation or clarification?

A Yes.

Q In what form did you publish that?

A At the press conference in New York.

Q What did you state with regard to that?

A We called this 11,000 words of journalism and produced the journalist who wrote it for full questions.

Q But you didn't state at your remarks at the press conference on May 19th, 1992, that Mr. Breo's two articles that were published in JAMA on May 27th, 1992, were not subjected to the same peer review that scientific articles are, did you?

A We did not say that.

Q Do you think that that should have been said or told to the media?

A No.

Q Why?

A I think it's obvious.

Q What's obvious?

A In the JAMA there are many editorial categories. Journalistic articles written by medical journalists are what they are.

Scientific articles written by scientists are what they are. And to the accustomed JAMA reader including a huge number of medical reporters in the

public media that distinction is well-known and well-understood. It is obvious.

Q So you are saying that the typical reader of JAMA would be able to tell the difference between a piece of journalism like that written by Mr. Breo and a scientific medical article written by some physician?

MR. BABCOCK: Object to the form of the question. Calls for speculation as to what somebody typical would see.

Go ahead and answer the question.

THE WITNESS: Not only do I believe that the average JAMA reader would be able to tell the difference.

I also believe the average medical reporter reporting to the public would also be able to tell the difference.

BY MR. KIZZIA:

Q What about the average member of the public at large or interested viewers or readers I think as you referred to last week, do you think they would be able to know the difference?

MR. BABCOCK: Object to the form of the question. Calls for speculation.

Go ahead.

THE WITNESS: Some would and some would not.

BY MR. KIZZIA:

Q The reason that I ask you about that, Dr. Lundberg, or one of the reason is in looking back at the first page of the news release that's marked as Exhibit 3T in the next to the last paragraph it is stated that Dr. Humes and Boswell agree to talk with JAMA about their four-hour autopsy of Kennedy because the interview was to appear in a peer reviewed scientific Journal.

Do you see that?

A I do.

Q Is that why Dr. Humes and Dr. Boswell agreed to talk with JAMA?

A It's a major reason. It may not be the only reason.

Q Without any further explanation, as an editor would you say that that statement is misleading to some extent at least with its reference to the peer reviewed scientific journal?

MR. BABCOCK: Object to the form of the question. Misleading to whom?

BY MR. KIZZIA:

Q Go ahead and answer.

A Not at all. I think it's a direct clear

statement that Humes and Boswell after something like 25 years are refusing to talk to anybody about this except the Congress finally agreed to talk about it for the world to see it written up.

And one of the main reasons they gave me was because it would appear in JAMA, a respected peer reviewed scientific journal which would be in all the medical libraries of the world and available to their colleagues.

Without that as a reason they very likely would not have talked to us, perhaps not to anyone else.

So I think it's exactly the right thing. It's stated very clearly.

Q Well, the news release that's marked Exhibit 3T wasn't just released to medical personnel, was it?

MR. BABCOCK: Now don't speculate about this because he's already asked you about it. You said you didn't know before.

THE WITNESS: I don't know to whom it's released.

BY MR. KIZZIA:

Q Well, assuming that the news release was released to -- as news releases generally are -- to the media generally, don't you think that that sentence without any further explanation or clarification implies

that Mr. Breo's articles were scientific and peer reviewed?

A No.

Q You don't think that it suggests that Mr. Breo's articles were subjected to the same peer review process that other scientific articles are in JAMA?

A Not at all.

Q Dr. Lundberg, let me show you Exhibit 57, which is a copy of the remarks that you made on April 3rd, 1993, at a conference in Dallas and ask that you read the first three sentences of the page that's labeled page five.

MR. BABCOCK: I think you mischaracterized where the remarks were made. You said Dallas.

MR. KIZZIA: All right.

BY MR. KIZZIA:

Q Let me show you what I've had marked for identification purposes Exhibit 57 which you previously identified as a copy of the remarks that you made at the conference in Chicago on April 3rd, 1993, and I ask you to read the first three sentences of your handwriting on the page that's labeled with the handwritten number five.

A Did you say the first three lines?

Q First three sentences.

A "I wasn't in Dallas or Bethesda those days. I'm really not much of an expert in this thing at all. My role in this is that of a journalist along with Mr. Dennis Breo of our JAMA staff."

Q Does that accurately describe your role with regard to the publication of articles at JAMA concerning the JFK assassination?

A No.

Q Could you explain why not?

A There have been many articles published in JAMA as regards the autopsy and findings related to it. I served different roles with different articles.

Q Are you talking about articles other than those published in 1992 and 1993?

A No. I'm only referring to those two years.

Q Could you describe the roles you played on or with regard to Mr. Breo's articles that were published in May of 1992 in JAMA. May 27th, 1992.

A The role I played in those two articles was to make the interviews happen. That took seven years of effort. First.

Second, to participate in the preparation

and study prior to the interviews.

Third, to participate in the interviews themselves.

And, fourth, to review as the editor in chief and peer review as a forensic pathologist and edit a little for words the two articles written by Mr. Breo.

In addition, my role was since the two pathologists refused to meet the media, my role was to respond to the request of the AMA Division of Communication to appear before the media at the press conference along with Mr. Breo and Mr. Matell since Humes and Boswell wouldn't show up.

Q Did --

A And my continuing role is to take the heat for whatever happened in respect to them.

Q Did members of the AMA Communications or Public Relations Department meet with you or otherwise consult with you about the content of the news release that's marked as Exhibit 3T?

A I don't have recollection of that.

Q When you said at the conference in Chicago on April 3rd, 1993, that you're really not much of an expert on this at all, was that an accurate statement?

A If this at all refers to the JFK assassination

and everything that resolves around it, it's an accurate statement, yes.

Q What were you referring to when you made that statement on April 3rd, 1993?

A I was referring to the fact that there have been thousands of pages written, hundreds of books published, a myriad people involved in hashing and rehashing the JFK assassination, and I at no time purported to be an expert in that entire mass of literature and pathos. It's not my bag.

Q You mentioned earlier that you were involved in some of the preparation prior to meeting with Dr. Humes and Boswell in April of 1993?

A Yes.

Q What did you do to prepare for those interviews?

A A place to meet, a time to meet, a place to stay, a length of time that might be involved, an introduction for Mr. Breo to the two pathologists, some basic study for Mr. Breo in what is forensic pathology all about, what are gunshot wounds, what are some of their distinguishing features, how does one go about looking at firearm injuries, what kinds of questions might be appropriate for the interviews, some general

background-type materials to read to prepare for such an interview.

Q What had you read about the JFK assassination prior to meeting with Dr. Humes and Dr. Boswell in Florida in April of 1992?

A It's not possible to answer a question like that. It dates back to 1963, and I can't recall everything I've read about the assassination since 1963. I don't have that kind of memory.

Q Can you identify anything specifically that you read regarding the JFK assassination prior to meeting with Dr. Humes and Dr. Boswell in Florida in April of 1992?

A Portions of the Warren Commission Report, selected portions; the chapter in Michael Boden's book about the autopsy, basic textbook information about gunshot wounds.

Q Not specifically applicable to the JFK case?

A It may or may not be. Gunshot wounds are gunshot wounds.

Q Well, when you refer to the text, you are not talking about text about the JFK assassination?

A No.

Q Or text about the gunshot wounds in the

JFK case?

A No. Perhaps a few other selected things that I don't recall right offhand.

Q What selected portions of the Warren Commission Report had you read?

A I can't tell you.

Q When you say selected portions, are you referring to portions selected by you?

A Yes.

Q Was that something that you did to prepare for the interviews with Dr. Humes and Dr. Boswell?

A In part.

Q What do you mean?

A From 1965 on once in a while I would look at things out of the Warren Commission Report when something would come up about the Kennedy assassination, particularly in the last seven years.

I also saw the film JFK, and then I went back and saw it a second time and made notes in preparation for the interview with Boswell and Humes.

Q Are you saying that the second time you went to see the movie JFK to make notes was specifically intended to prepare for your interviews with Drs. Humes and Boswell in Florida in April of 1992?

A I am.

Q Was there anything else that you did with the specific purpose of preparing for those interviews?

A I spoke to confidential sources.

Q Were these people you contacted?

A Yes.

MR. BABCOCK: We've been through all that, haven't we, confidential sources this morning?

THE WITNESS: I think we've been through it all. I can't imagine anything else to say.

MR. BABCOCK: Okay.

BY MR. KIZZIA:

Q You say that you read a chapter out of Dr. Boden's book?

A That is true.

Q What is the name of that book?

A I don't recall.

Q Do you own any books concerning the JFK assassination?

A Yes.

Q Can you tell me what books you own concerning the JFK assassination?

A I own Crenshaw and Shaw.

Q Are you talking about JFK: Conspiracy of

Silence?

A Yes. I think I own it. I don't have it in my possession at the moment.

As a matter of fact, I'm not sure I own it, but I did have it in my possession for a time.

Q Anything else?

A I own the Boden book, but that's about a lot of things in forensic medicine. JFK is one small part of it.

I own a book by John Lattimer entitled Lincoln and Kennedy. I own the new book Case Closed.

Q Daryl Pozner's book?

A Yes.

Q Have you read that book?

A I've read parts of it. I haven't read all of it.

Q When did you come into possession of that book?

A Late September 1993.

Q Did you read selected portions of the book?

A Yes.

Q Portions selected by you?

A Yes.

Q What portions of the book did you read?

A I read portions having to do with the autopsy

findings and his report and interpretation on it.

I have read parts on Lee Harvey Oswald's time in the Soviet Union and his life in Dallas prior to the assassination. A few other selected parts. Those are the ones I recall.

Q Are there any other books on JFK assassination that you haven't mentioned that you own?

A Not that I can recall.

Q Do you know Mr. Pozner?

A I do not.

Q Have you ever spoken with him?

A I have not.

Q Did you see in his book where he said that he interviewed the autopsy physicians?

A I did not.

Q You weren't aware of that?

A I was aware of it.

Q How did you become aware of it?

A From a letter from a doctor who called my attention to it.

Q Do you have any idea how Mr. Pozner was able to obtain such interviews?

A No.

Q You weren't involved in that at all?

A Not at all.

Q Was anyone from JAMA as far as you know?

A I can't speak for anyone from JAMA.

Q Do you know of anyone else from JAMA that may have been involved?

A No.

Q When did you come into possession of Dr. Lattimer's book?

A In 1992.

Q Before or after the articles were published in the May 27th, 1992, edition?

A I believe after.

Q What about Dr. Boden's book, do you remember when you acquired that?

A I don't actually.

Q Do you know whether or not you acquired Dr. Boden's book before or after the May 27th, 1992, edition of JAMA?

A Before.

Q You said you read a chapter in the book regarding the JFK autopsy.

Did you read that before you met with Dr. Humes and Dr. Boswell in April of 1992?

A Yes.

Q Other than the books that you just described which you have owned or at least had possession of have you read any other books pertaining to the JFK assassination?

A Do you mean whole books or parts of books?

Q Well, let's start with whole books?

A Not that I can recall.

Q All right. How about parts of books?

A Yes.

Q Can you name any such books?

A Harrison Livingstone's book published this year and also one published a couple years ago.

I think one of them is called High Treason something or another.

Q Is that the one that was published a couple years ago?

A I think so.

Q Did you check that book out of the library or borrow it from somebody?

A No.

Q How did you read portions of the book if you didn't own or possess it?

A Which one?

Q Let's start with the one that was published a

couple years ago.

A I went to a bookstore where they had it for sale, and I stood there and flipped through a few pages, read them and put it back.

Q Were you looking for something in particular?

A Yes.

Q What were you looking for?

A Information about JFK autopsy and the adrenals.

Q Is that the only thing you were looking for?

A Yes.

Q What about his book that was published earlier this year?

A I have read a portion of one or two chapters which were provided to me in photocopy form as either a gift or some other purpose. I don't know. I didn't buy it.

Q Who provided it to you?

A I think Mr. Hoppe provided it to me.

MR. BABCOCK: Don't talk about stuff your lawyers gave you.

THE WITNESS: I'm sorry. Lawyer/client.

BY MR. KIZZIA:

Q What chapters of Mr. Livingstone's recent book did you read?

A The ones that had to do with me and the press conference. And I didn't read all of it. I just sort of skimmed it.

Q Are there any other books regarding the JFK assassination that you have read portions of?

A Not that I can recall.

Q Prior to publication of the two articles written by Mr. Breo in the May 27th, 1992, edition of JAMA then had you only read the chapter in Dr. Boden's book pertaining to the JFK autopsy, and you hadn't read any other books or any portions of any other books pertaining to the JFK assassination?

A That was not my testimony.

Q Okay. Let me ask you a different way.

Please tell me all books pertaining to the JFK assassination that you read in entirety or portions of prior to publication of the two articles written by Mr. Breo in the May 27th, 1992, edition of JAMA?

A Crenshaw and Shaw's book, JFK: Conspiracy of Silence, Michael Boden's book of which one chapter has to do with Kennedy, portions of the Warren Commission Report, and portions of the Journal of the American Medical Association and its original report on the autopsy of JFK 25 or 28 years ago.

And others that I don't recall at this time over that more than two decade span.

Q When did JAMA previously publish something pertaining to the JFK autopsy?

A In 1963 or '64 and shortly thereafter.

Q What was published?

A A medical news report journalism not long after the autopsy. And the actual autopsy itself as it was reported in the Warren Commission Report was also published in the Journal of the American Medical Association.

In addition, a number of --

MR. BABCOCK: Wait a minute. There's no question pending, is there?

BY MR. KIZZIA:

Q Is there anything else that you --

A It's the same question.

MR. BABCOCK: Okay.

BY MR. KIZZIA:

Q Is there anything else that you read prior to the publication of articles?

A Yes. Other JAMA material about the autopsy in the letters column of JAMA primarily over the years, mostly having to do with the adrenal glands. End

of answer.

MR. BABCOCK: Yeah. Okay. Good. Sorry.

BY MR. KIZZIA:

Q Prior to publication of Mr. Breo's articles in the May 27th, 1992, edition of JAMA had you reviewed any other information pertaining to the JFK assassination other than what you've described in the form of books, prior JAMA publications and the movie JFK?

A Yes.

Q What?

A Newspaper and magazine accounts over 27 years of a variety of types none of which I can specify, but which I read.

Q You are talking about newspaper or magazine articles when they came out you may have read them?

A When they would come out or Journal articles when they would come out. And I would see them from year to year to year to year.

Q You are not saying that you went back in 1992 and tried to read articles that had been published over that 29-year period, are you?

A I am in part. In 1992 I went back to some things that had been published that were available to me before and after May of '92, but mostly I'm talking

about simply as an every day reader reading things as they came down in a wide variety of publications over that 27 years. Not in book form.

And the same thing for television or radio as things would come down I would see them like anybody else.

Q I understand that, but I just want to be clear on this. Prior to the publication of Mr. Breo's two articles that appeared in the May 27th, 1992, edition of JAMA, and I'm talking about during the immediate preceding few months, did you go back and try to make a point of reading newspaper accounts or magazine accounts that had been published in the preceding 29 years about the JFK assassination?

A I did not.

MR. KIZZIA: Let's stop now.

THE VIDEO OPERATOR: Going off the record. It's the end of tape two, December 28th. The time is 3:44 p.m. Tape stopped.

(Discussion held off the record.)

THE VIDEO OPERATOR: Back on the record. This is the beginning of tape three, December 28th, 1993. The time is 3:58 p.m.

BY MR. KIZZIA:

Q Dr. Lundberg, when you said that you went back to see the movie JFK a second time to take notes, did that occur after Drs. Humes and Boswell had agreed to be interviewed?

A Yes.

Q After Dr. Humes an Dr. Boswell had agreed to be interviewed did you read or review any other information pertaining to the JFK assassination other than seeing the movie JFK a second time?

A No more than what I've already testified to.

Q Well, I don't recall you identifying anything that you did during that time frame.

A The Boden book chapter, a few segments of the summary portions of the Warren Commission Report.

Q You did go back and review those items after Dr. Humes and Dr. Boswell agreed to be interviewed?

A Yes.

Q Did you do anything else or review any other information on the JFK assassination?

A No.

Q Was Mr. Breo particularly knowledgeable in your estimation about the JFK assassination when he was given the assignment to interview Dr. Humes and Boswell and to

write an article pertaining to such interviews?

A No more than he would have been for any other assignment which he receives routinely many times a year.

Q Well, did you inquire of Mr. Breo what he knew about the JFK assassination?

A Yes.

Q What was his response?

A Some years ago when I first made efforts to get Humes and Boswell to speak to us, Mr. Breo and I spoke about the assassination, and he had some knowledge of it. He had interest in pursuing it as a journalistic enterprise.

Q Do you know whether or not he was well-read on the JFK case?

A I do not.

Q What did you suggest to Mr. Breo that he review or read in preparation for the interviews that he did and writing of the articles?

A Some basic textbooks on firearm injuries, pieces of basic textbooks, Boden's book chapter, portions of the summary of the Warren Report that dealt with the autopsy.

Q Anything else?

A Not specifically.

Q Did you suggest to him that he see the movie JFK?

A I don't remember.

Q Other than suggesting that he read selected portions of the Warren Commission Report and Dr. Boden's book, did you suggest that he read any other books?

A Not that I recall. Well, except, as I said, some sections on firearm injuries from forensic books.

Q Earlier you described the various roles that you played pertaining to the articles published in JAMA on the JFK assassinations.

Did you serve as a secondary source of information for Mr. Breo pertaining to the articles that he wrote and that were published in JAMA on May 27th, 1992?

A I don't know what you mean by secondary source of information.

Q At your presentation in Chicago on April 3rd and as demonstrated in the text of your remarks that's marked as Exhibit 57, you stated that, "I'm really not much of an expert in this at all, but my role in this is that of a journalist along with Dennis Breo of my JAMA staff. I have essentially no primary source information

nor do I plan any."

Do you remember making that statement?

A I do.

Q What did you mean when you stated that you essentially have no primary source information?

A I was not at the assassination. I was not at Parkland Hospital when the president was brought there. I was not at the autopsy table. I was not at the microscope looking at slides. I was not at the view box looking at X-rays.

I wasn't there as a primary source person for any of the information nor did I intend to become such. Not my role.

Q Were any of your confidential sources primary sources of information?

A I choose not to respond because I think it might endanger their confidentiality.

Q You passed on information to Mr. Breo that you say you received from confidential sources; is that right?

A That is true.

MR. BABCOCK: That's been asked and answered three or four times.

BY MR. KIZZIA:

Q But the point is in that regard you were a source of information for Mr. Breo and you were not a primary source of information?

MR. BABCOCK: That's two questions.

THE WITNESS: I was a source of information for Mr. Breo, and I was not a primary source of information, that is true.

BY MR. KIZZIA:

Q So you were a secondary source of information for Mr. Breo?

A Not necessarily.

Q How would you describe your role as a source of information for Mr. Breo in his writing of the articles that were published in JAMA on May 27th, 1992?

A I am a physician. Mr. Breo is not. I'm a pathologist. Mr. Breo is not. I am a forensic pathologist. Mr. Breo is not.

This provides me with multiple decades of learning, knowledge, experience and judgment to apply to a medical/legal case.

I made this source of information and judgment available to Mr. Breo for preparation and also in reviewing his writing. And in the

interviews themselves.

Q Well, how would you describe the role that you served in passing on information to Mr. Breo that you received from your confidential sources?

A I would describe that as helpful.

Q You wouldn't describe that as being a secondary source?

A No.

Q Why?

A Secondary denotes second. I don't know, and I wouldn't choose to tell you if I were second because it might infringe upon my confidential sources.

Secondary doesn't just mean not primary. Secondary means second. There's tertiary, quaternary, quintanary, sextolar, etcetera.

Q So are you saying you may have been one of those more attenuated levels of sources?

A I may have been.

Q Are you willing to state what level of source of information you were in that regard?

A I am not.

Q Did you provide any information to Mr. Breo about Dr. Crenshaw or the book JFK: Conspiracy of Silence that were used or that was used in the articles?

A I don't think so.

Q When you read selected portions of the Warren Report, did that include testimony of doctors to the Warren Commission?

A Yes.

MR. BABCOCK: But that's a vague question.

THE WITNESS: It's doctors.

MR. BABCOCK: That covers a lot of ground. That's a lot of doctors.

BY MR. KIZZIA:

Q Did you suggest to Mr. Breo that he read any of the testimony presented to the Warren Commission by any of the physicians that he intended to interview?

A Not specifically.

Q Did you suggest that generally?

A I suggested to Mr. Breo that he peruse relevant portions of the Warren Commission Reports of his choosing.

Q You left it up to him to determine what was relevant?

A Yes.

Q Did you personally know any of the physicians that were the subject of Mr. Breo's interviews that culminated in the two articles that were published in

the May 27th, 1992, edition of JAMA --

MR. BABCOCK: Could you read back that question, please.

MR. KIZZIA: I haven't even finished it.

BY MR. KIZZIA:

Q -- before the articles were published?

MR. BABCOCK: Now you can read it back.

(Record read.)

MR. BABCOCK: Brad, you've gone over this before with him. You've asked him about all these, whether he talked to them, whether he knew them. You did it today, and you did it last week.

MR. KIZZIA: Let me clarify.

BY MR. KIZZIA:

Q You obviously met with Dr. Humes and Dr. Boswell in April of 1992, correct?

A I don't remember the date. It was in early 1992. I didn't think it was April, but I don't remember.

Q Did you know Dr. Humes prior to the interview?

A Yes.

Q Did you know Dr. Boswell prior to the interview?

A Yes.

Q You did not participate in the interviews that Mr. Breo did with any of the other doctors mentioned in his articles; is that correct?

A That is correct.

Q Did you know any of them other than Dr. Rose?

A Yes.

Q Who did you know?

A I knew Dr. Jenkins.

Q How did you know Dr. Jenkins?

A Through his role in the House of Delegates of the American Medical Association.

Q Were you and Dr. Jenkins friends?

A We were acquaintances, professional colleagues.

Q How long had you all been acquaintances and professional colleagues?

A Five or six years.

Q Now you said you did speak with Dr. Rose prior to the publication of the articles?

A Yes.

Q Was that by telephone?

A Yes.

Q Did he call you or did you call him?

A I called him.

Q Did you know Dr. Rose before you called him?

A As I have testified three times, yes.

Q How is it that you knew Dr. Rose?

A Dr. Rose is a physician, a forensic pathologist and has been a professor of pathology at at least two medical schools.

I knew him as a colleague, as a fellow forensic pathologist, as a friend. I served with him for perhaps three years on the Counsel of Forensic Pathology of the American Society of Clinical Pathologists in the middle to late 70's.

Q What was the purpose of your calling him when you talked to him about the subject of the articles?

A I called Dr. Rose to get him to talk. First I called him to get him to write an article for our Journal about his experiences with the JFK event.

I did that for many years. He always said no. Then I called him to see if he would talk to Mr. Breo, a journalist who would write up what happened to him around the JFK autopsy, and he said no.

And it wasn't until 1992 after he learned from me that Dr. Humes and Dr. Boswell were going to talk to us on the record for print and JAMA that he finally agreed to an interview.

He still wouldn't write a paper, but he

agreed to an interview with Mr. Breo if Mr. Breo would go to Iowa to his home. So he did.

Q What was your understanding of Dr. Rose's reluctance to speak about the case?

A Mr. Kizzia, I don't reside in other peoples' heads, and that includes Dr. Rose. I don't know.

Q He didn't give you any information to explain that?

A Not that I ever figured out.

Q What was your understanding of the reluctance of Drs. Humes and Boswell to speak about the JFK case?

A I never could figure it out.

Q Still have no understanding about that?

A Dr. Humes told me that he did the work, wrote his report, the Warren Commission had its findings he testified.

He testified to the other investigations when required. He said that's enough. I've done it. Why should I do it again? That's what he said for the better part of seven years.

Q How did you -- Strike that.

Did you talk him out of that position at some point?

A Did I what?

Q Talk him out of that position at some point?

A It would seem so.

Q How did you do that? How did you accomplish that?

A Genius and persistent.

MR. BABCOCK: Let's not get flippant now.

THE WITNESS: I'm sorry.

MR. WATLER: It's late in the day. A little flippancy is all right.

MR. BABCOCK: You are entitled to one flippancy at this point.

THE WITNESS: Persistence, tenacity --

MR. BABCOCK: With a dab of genius.

THE WITNESS: Insistence that he owed future generations that -- his experiences, his remembrances, his observations around that day and everything since then beyond the pages of a medical journal in medical libraries for his colleagues, other doctors, to be able to refer to.

And after awhile he came to say that that was a good idea, but he wouldn't do it. And that worked its way over years into, "I'll do it."

But not until the movie JFK had been seen by his children who told him about it, and then he said,

"I'll do it."

Q Whose decision was it to have Mr. Breo write the articles that were published in JAMA on May 27th, 1992?

A It was my decision with the agreement of Mr. Breo to take that on as an assignment.

Q Why did you decide to publish a piece of journalism concerning the JFK assassination as opposed to a medical article?

A The autopsy doctors, Dr. Humes, Dr. Boswell, Dr. Finck refused to write a medical article for JAMA or anywhere else. I asked them to for years. They wouldn't do it.

Q Did you ask any other physician to do a medical article about the JFK case other than Drs. Humes, Boswell and Dr. Rose?

MR. BABCOCK: That's not what he said. He didn't say Rose, did he?

THE WITNESS: It was Finck.

MR. BABCOCK: Finck, yeah.

BY MR. KIZZIA:

Q You said earlier --

A I asked Rose as well.

Q -- that you did ask Rose to write an article.

A About his experiences, yeah.

Q Did you ask any other physician to write an article pertaining to the JFK case?

A Before May 1992?

Q Yes.

A No.

Q But why didn't you have some physician write the articles as opposed to Mr. Breo who was not a physician?

MR. BABCOCK: Are you talking about this article or a hypothetical research article?

MR. KIZZIA: No. I'm talking about the articles that were published on May 27th, 1992, in JAMA.

MR. BABCOCK: So why did you choose Breo, a nonphysician, I think, is his question.

THE WITNESS: Mr. Breo is, in my opinion, a world class medical reporter with 25 years experience of writing up interviews with important people.

He, in my judgment, has done that better than anybody else I ever saw and so he was the logical choice from my staff to do that.

I have no physician on my staff with that kind of experience with this kind of writing.

BY MR. KIZZIA:

Q Did you play any role in writing of the articles?

A No.

Q Before I forget, after May of 1992 did you ask any physician to write an article for JAMA pertaining to the JFK assassination?

A JAMA has a policy of willingness to receive articles from anybody about anything. And I may have in the course of making a statement like that, which I often make, made a general invitation to any number of people to say why don't you write an article about that.

This could have applied to this subject as it applies to many things. I have no specific recollection of requesting such with one exception.

And that was the editorial that I published written by Charles Petty from Dallas.

And even in that situation it was more a volunteer effort on his part than it was my request.

In general I didn't specifically ask anybody to write articles about this subject except for the people who were closest to it, doctors closest to it.

Q Who are you referring to?

A Boswell, Humes, Finck later and Rose.

Q Who all was involved in editing of the two articles that Mr. Breo wrote that were published in JAMA on May 27th, 1992?

A Dr. Glass, who's supervisor, me a little bit and copy editors presumed.

MR. BABCOCK: We've been over the copy editors.

BY MR. KIZZIA:

Q Describe what you did in connection with the editing of those two articles?

A I read drafts in good form, made a few suggestions, a few comments.

Q Do you remember any suggestions or comments that you made?

A No.

Q Was or were the two articles that were published in JAMA on May 27th, 1992, that were written by Mr. Breo peer reviewed?

A Yes.

Q Who peer reviewed the articles?

A As I believe has already been testified, Dr. Glass as a physician, Dr. Lundberg as a forensic pathologist and an appropriate attorney.

Q Are you saying that the attorney was part of

the peer review process?

A I am.

Q Is an attorney normally part of the peer review process for articles published in JAMA?

A It depends on how you define normal.

Q How would you define normal? I'm just asking about the usual course of business.

A Attorneys are frequently part of the review process for JAMA as a routine. Normal to a pathologist means galcian (phonetic) curve reference ranges.

Attorneys are not in the center of a galcian curve reference ranges, but they are frequently reviewers for us.

I have about ten thousand reviewers in our reviewer file. Many are attorneys, and they frequently function as reviewers for us, peer reviewers. It depends on the subject.

Q Why would you describe an attorney as a peer of Mr. Breo?

A I guess we have to go back to the English definition of peer. I remember I had trouble once getting peer reviewers for the Pope. So I guess we broadened the definition a little.

Q Who do you mean when you say we?

A The editorial we, JAMA and our staff.

Q So when you refer to peer review, does peer really mean anything?

A It sure does.

Q What does it mean?

A Reviewed by experts inside or outside the editorial office to advise the editor what to do with the manuscript.

Q Are you then saying that the word peer as used by JAMA and its editorial staff refers to expert?

A Experts in specific fields in which the information lies.

Q What was it about Mr. Breo's May 27th, 1992, articles concerning the JFK assassination that in your estimation required expert legal review?

A As I recall, homicide is a felony in this country and the investigation of it is frequently done by lawyers.

Q Is that why Mr. Breo's articles were submitted to legal counsel for review?

A One reason.

Q Any other reason?

MR. BABCOCK: Be careful about the other reasons because if it calls for you to reveal conversations with

your lawyer don't do it.

THE WITNESS: Yeah, I agree. I don't intend to.

BY MR. KIZZIA:

Q I'm not asking for you to reveal any confidential attorney/client communication.

MR. BABCOCK: And I'm not instructing him not to answer. I'm just telling him that that question could call for an attorney/client conversation. It may not. But it could as well. I'm just cautioning him. That's all.

THE WITNESS: Since I didn't participate in any of those conversations I really don't know what happened.

BY MR. KIZZIA:

Q Who made the decision to submit the article to legal counsel for review?

A I don't think I have to tell you that.

Q Do you know?

A Probably not.

Q It wasn't you, I take it?

A No, it wasn't me.

Q Whose idea was it to publish articles in JAMA pertaining to the JFK assassination in 1992?

A Mine.

Q Anybody else involved in that decision? The

decision to do it, not the decision as to what was to be said. I'm talking about the original decision to embark on that project.

A To embark on the project was my idea, solely my idea.

Q What was the purpose?

A The purpose was to provide the medical leadership of our Journal with the best information we could about what actually happened that day in November 1963 from the eyes of the doctors who were closest, best we can tell, closest to the scene and had primary knowledge of it, and to put this into our medical Journal so that it would be available to physicians, pathologists, historians and anyone else who wished to see it because of our wide readership forever, no matter what the information was.

Q Did you consider the articles to be of historical importance?

A Yes.

Q Did Mr. -- Strike that.

Were the interviews with Dr. Humes and Boswell recorded?

A Yes.

Q Did you listen to the tapes of

those interviews?

A No.

Q Did you listen to the tapes of any other interviews that Mr. Breo may have done?

A No.

Q Do you know whether or not those tape recordings were transcribed?

A To my knowledge they were not.

Q Was there any discussion about whether or not the tape recordings of the interviews should be preserved?

A Yes.

Q What were those discussions?

A We normally don't preserve them so we followed normal procedure.

Q But you said in this case there were some discussions about it?

A There was.

Q Between whom?

A Attorney/client.

Q You are saying the discussions were between you and counsel or are you saying that you don't want to answer the question because you feel like it would reveal a confidential attorney/client communication?

A I feel that I did not participate in such discussions, but I believe attorney/client communication would be invaded by pursuing this line of questioning.

Q Do you know who participated in such discussions?

A No.

Q Well, then what makes you think that it would violate the attorney/client communication?

A I believe there was such conversation.

Q Were these conversations before the articles were published on May 27th, 1992?

A Yes.

Q Just to make sure that I didn't overlook something, when you said that an attorney was part of the peer review process pertaining to Mr. Breo's articles that were published in JAMA on May 27th, 1992, were you saying that an AMA attorney reviewed the articles before they were published?

MR. BABCOCK: Object to the form of the question. I'm not sure you correctly characterized his prior testimony.

Go ahead and answer if you can.

THE WITNESS: Yes.

BY. MR. KIZZIA:

Q I just wanted to make sure that that review that was done by an attorney as part of the peer review process was done before the articles were published?

A Yes.

MR. BABCOCK: But this characterization of peer review process, I don't want there to be confusion in the record. It's my understanding that the attorney was reviewing the articles as an attorney, not as an editor or some other functionary.

If you have a different understanding, tell him. But let's not let the record get confused here because he's throwing in this peer review thing.

THE WITNESS: Yeah. Well, when we have peer review, peer review is review the articles for whatever the area of expertise is.

Lawyers expertise is legal, so that review would be for legal review.

MR. BABCOCK: I know the sense you are using it, but it's not clear from the record.

THE WITNESS: Does that clarify?

MR. BABCOCK: I think it probably does. And also I think you said you weren't involved in that process, but that's okay.

BY MR. KIZZIA:

Q Who was involved in the formulation of the questions to be asked of the doctors during their interviews?

A Mr. Breo and I.

Q Anyone else?

A Dr. Glass.

Q Anyone else?

A No.

Q Who else was at the autopsy of President Kennedy at Bethesda Naval Hospital on November 22, 1963, other than Drs. Humes, Boswell and Finck?

A I don't know. Many names are listed in various sources. I have no personal knowledge of any of them.

Q Can you from any source from which you obtained such information name any other such person who was present at the autopsy?

A I believe there's some names in Breo's articles. The only one that comes to my mind at the moment was a radiologist named Ebersole (phonetic), I believe, or something like that. And I believe the president's personal physician Navy admiral was there or so I was told.

Q What was his name?

A I'm blocking his name at the moment. It's in the article.

Q Can you name anyone else that was present at the autopsy?

A Not from my head at this time although obviously there are good records of that.

Q Earlier you said that you had read some selected portions of the Warren Report?

A If I said that, I misspoke. I read selected portions of summaries of the Warren Report. I've never read from the massive 36-volume or however many there are. I've never read from that at all.

I've only read selected portions that were from a collection, an abridgement perhaps or selection from the main volumes.

Q In order to facilitate your finding the selected portion that you wanted to read, did you resort to an index?

A I don't recall. I probably more likely just flipped around a bit.

Q Why wasn't Dr. Ebersole, the radiologist, interviewed?

A We interviewed the pathologist who did the autopsy. We didn't interview the radiologist or others

there. We chose to limit our interviews to the pathologist at the autopsy.

Q Why did you choose to --

A I'm a pathologist. I figure they had the primary source information more than anyone else would, and we choose not to extend the circle.

Q Why did you choose not to do so?

A Because we thought the most important information would be from the pathologist, and that's where we chose to stop.

Q When you say we chose not to interview --

A The editorial we, me and Mr. Breo.

Q Who were the members of the trauma team that provided emergency treatment to President Kennedy at Parkland Hospital on November 22nd, 1963?

A I'm not sure.

Q Who can you name?

A I can name Dr. Jenkins.

Q You know him --

A I know him.

Q He's a friend of yours?

A Uh-huh. An acquaintance and a colleague.

Q Who else can you name?

A Dr. Carrico.

Q Whom you've never met or spoken with; is that right?

A That is correct. Dr. McClelland. There are a couple others in the second Breo, but I don't remember the names at the moment. And I believe Dr. Robin Jones.

Q Who was Dr. Jones?

A Dr. Robin Jones is a surgeon in Dallas who was a member of the team taking care of the president.

Q Can you name anyone else?

A Dr. Crenshaw states that he was, and I've heard there's evidence to that effect.

Q Who have you heard that from?

A Various letter writers and others, including Dr. Crenshaw.

Q Can you name anyone else?

A Those are the ones who come to mind at the moment.

Q You know that there were a number of physicians including those that you just named who were on the trauma team that participated to some degree in the efforts to save President Kennedy's life at Parkland Hospital?

A Yes.

Q And you know that that team was much larger

than the group of physicians that Mr. Breo ultimately interviewed?

A I don't know the size of the team.

Q You know that it was larger than the number of --

A I'm sure Mr. Breo did not interview all the people, but I don't know how many people there were.

Q Were you involved in the decision as to which physicians to interview and which ones not to interview?

And I'm talking about of the physicians who were on the trauma team at Parkland Hospital on November 22nd, 1963?

A In part.

Q Could you explain your role?

A Working through Dr. Rose and Dr. Jenkins Mr. Breo chose who to interview. I did not. But I did refer him to Dr. Jenkins because I knew him.

And when I heard that he was -- I don't remember where I heard. I heard from somewhere that he was the anesthesiologist in the team, I used the fact that I knew him as a way for Mr. Breo to contact him.

The other arrangements, to my knowledge, were made by Mr. Breo and not by me nor did I direct nor approve. He simply did the ones he could at

his discretion.

Q Do you know Dr. Jones' full name?

A No, but -- I don't know his full name. Like his middle name and all? No.

Q Did you ever call Dr. Jenkins to put Mr. Breo in touch with him?

A I don't recall calling him, no.

MR. KIZZIA: Let's go off the record for a second.

THE VIDEO OPERATOR: Camera off, 4:45 p.m.

(Recess had.)

THE VIDEO OPERATOR: Back on the record, 4:51 p.m.

BY MR. KIZZIA:

Q Dr. Lundberg, when you referred to Dr. Jones earlier, were you referring to Dr. Ronald C. or Ronald Coy Jones?

A I believe so.

Q How is it that you remember Dr. Jones' name when he is not referred to in Mr. Breo's article?

A I appeared with him on CBS This Morning.

MR. BABCOCK: The program CBS This Morning, not today, right?

THE WITNESS: I have appeared with him -- No, not today and also not -- On the television program CBS This Morning out of New York.

BY MR. KIZZIA:

Q When did that appearance on CBS This Morning program occur?

A May 20th, 1992.

Q Was that the first time that you had met Dr. Jones?

A Yes.

Q Other than Dr. Jenkins had you met any other member of the Parkland trauma team who participated in the efforts to save President Kennedy?

And I'm talking about met them before the Breo articles were written.

A Not that I recall, but if the list is a long one, I know a lot of people, and I might have met them and not realized it.

Q As far as you know, have you spoken with any of them other than Dr. Jenkins before the articles were written?

A Not as I recall.

Q Did you speak with any of them about the JFK assassination?

A No, except for Ron Jones obviously with whom I appeared on CBS This Morning.

Q But that occurred on May 20th, 1992?

A That is correct.

Q That was after the articles were written?

A That is correct.

Q That was after your press conference or your remarks at the press conference on May 19th, 1992?

A That is true.

Q When did you first learn that Mr. Breo did not intend to or had not tried to interview Dr. Crenshaw?

A I suppose in April -- My best recollection is April 1992.

Q What is the basis for your stating that to be your best recollection?

A Well, that's when the articles were being written and when the interviews were being done and Dr. Crenshaw was not one of the interviewees.

Q How was it brought to your attention that he did not try to interview Dr. Crenshaw or that he did not intend to try to interview Dr. Crenshaw?

A I believe he told me.

Q Was this after he had written the articles?

A I don't recall at what stage they were.

Q What did he tell you?

A That he was not going to interview Dr. Crenshaw.

Q Is that because you asked him about it or he just brought it up himself?

A I don't remember for sure.

Q What reason or reasons did he give for not trying to interview Dr. Crenshaw?

THE WITNESS: May I consult with counsel?

THE VIDEO OPERATOR: Audio off, 4:55.

(Discussion held off the record.)

THE VIDEO OPERATOR: Audio back on, 4:56.

THE WITNESS: It's my recollection that Mr. Breo felt that Dr. Crenshaw's position was well-stated already in print and widely distributed and was not in need of restatement.

In addition, it's my recollection that Mr. Breo saw legal counsel and acted in part on recommendation of legal counsel.

BY MR. KIZZIA:

Q Is that the same legal counsel that participated in the peer review process?

A I don't think I need to tell you about -- I'm claiming lawyer/client privilege here in terms of identification of legal counsel.

Q I'm not asking you at this point as to what was said between them.

A I wasn't there. I couldn't tell you anyway.

MR. BABCOCK: He wants to know who the lawyer is.

BY MR. KIZZIA:

Q I just want to know if we are talking about the same lawyer, different lawyers or what?

A I don't have personal knowledge of that. I was not in attendance.

Q Well, when --

A You know how doctors are. They just just say get a lawyer to give you some advice.

Q Did you suggest that Mr. Breo seek legal advice on that point?

A No, I did not.

Q Well, when Mr. Breo told you that he had sought advice of counsel, did he tell you who the attorney was that he sought advice from?

A Yes, he did.

Q Who was that attorney?

A I --

MR. BABCOCK: I think he's entitled to know the identity, but not what was said.

THE WITNESS: It's my recollection that the name of the attorney was Betty Jean Anderson.

BY MR. KIZZIA:

Q Is that AMA in-house counsel?

A That is.

Q Is Betty Jean Anderson the attorney who participated in a peer review of Mr. Breo's articles?

MR. BABCOCK: I'm going to object and continue to object to the characterization of her role and further object that the witness has already testified that he doesn't have personal knowledge as to whether or not any particular person did or did not review these articles in the legal staff.

Subject to that if you know, even though you don't have firsthand knowledge, if you know if that's who it was then you can respond.

THE WITNESS: Then I can what?

MR. BABCOCK: You can respond and tell him whether --

THE WITNESS: I don't know who it was.

BY MR. KIZZIA:

Q Well, when I asked you who participated in the peer review of Mr. Breo's articles, the ones that were published in JAMA, May 27th, 1992, you said you, Dr. Glass and an attorney.

Who was that attorney?

A I don't have personal knowledge of who that attorney was.

Q What is your understanding as to who it was or who do you understand to be the attorney that participated in that review?

A It is my understanding from hearsay that Betty Jean Anderson was that reviewer.

Q Do you know whether or not Mr. Breo did any research into Dr. Crenshaw's involvement on the Parkland trauma team on November 22nd, 1963?

A I do not know.

Q Did you yourself do any research?

A I did not.

Q Do you know of anyone with JAMA or the AMA that did?

A I don't know.

Q Did you do any independent verification of anything that Mr. Breo stated in his articles?

A Yes.

Q What did you do?

A I reviewed them. I independently verified what he reported from the interviews with Humes and Boswell because I was there.

Q Did you do anything else?

A No.

Q When you say that you did an independent verification of what Mr. Breo said about his interviews with Drs. Humes and Lundberg, was your verification based upon your recollection or did you go to notes you'd made or to the tape recordings?

A I've already testified I did not listen to the tape recordings. I worked from memory.

Q As far as you know, did anyone else from JAMA do anything to verify statements made by Mr. Breo in his articles that were published in JAMA on May 27th, 1992?

A I do not know.

Q Does anyone from JAMA have that job?

A What job?

Q To verify statements made in articles?

A I guess the answer depends upon what article you are talking about.

Q Please explain your answer.

MR. BABCOCK: Well, his answer is his answer.

MR. KIZZIA: Well, he says it depends, so I want to know what --

MR. BABCOCK: He says it depends on what article you are talking about. If you are asking him about the Breo article, then that's fine, he can answer that.

If you are asking him about a medical research article that somebody does on the affect of cholesterol, that's probably going to get a different answer.

BY MR. KIZZIA:

Q Is that the distinction?

A That's one distinction.

Q Scientific medical articles that are submitted there are people who have the assignment of trying to verify statements made in the articles; is that right?

A That's called peer reviewers and editors.

Q What about articles written by Mr. Breo, does anyone have the job or assignment to verify statements made in his articles?

A His supervisor makes a determination as to whether he believes independent verification would be required, and in general it is not.

Q Under what circumstances would independent verification be required?

A The question on the part of his supervisor as to whether it be required. I'm not his supervisor, and I haven't done such.

Q Does JAMA have a policy, and I'm not talking about just a written policy, but a policy that pertains

to whether or not people discussed in JAMA articles are interviewed or contacted for comment before articles are published?

A There is no formal policy.

Q From your understanding of ethics and journalism, isn't it basically standard or customary practice for someone who is discussed in an article of journalism to be contacted -- either be interviewed or at least contacted for comment before publication?

MR. BABCOCK: Object to the form of the question. That calls for speculation.

MR. WATLER: I'll join in it.

BY MR. KIZZIA:

Q Can you answer the question?

A No.

Q Do you know whether or not there's any standard practice in journalism with regard to interviews of subjects of articles or whether or not subjects would be contacted for comment?

MR. BABCOCK: I'll object to the form of the question because it calls for speculation and the question assumes facts that are not in evidence. That would never be in evidence.

BY MR. KIZZIA:

Q Can you answer the question?

A I don't believe there are such standards. There are practices which vary widely.

Q Vary widely?

A Practices which vary widely.

Q Do you think as an editor generally speaking that people who are discussed in articles, and particularly critical articles, that they should be interviewed or at least contacted for comment before publication of their article?

MR. BABCOCK: Object to the form of the question. It calls for speculation. Every situation is different.

THE WITNESS: I believe this is a matter of editorial judgment.

BY MR. KIZZIA:

Q All right.

Based upon your editorial judgment do you think that as a general rule persons who are criticized in articles of journalism should be interviewed or at least contacted for comment before publication of the article?

MR. BABCOCK: He just said there was no general rule so how can you ask him as a general rule.

Object to the question.

THE WITNESS: I don't believe there is such a general rule.

BY MR. KIZZIA:

Q That's your editorial judgment?

MR. BABCOCK: That's his testimony.

THE WITNESS: That's my testimony.

BY MR. KIZZIA:

Q Is that also your editorial judgment?

MR. BABCOCK: Object to the form of the question. We are comparing apples and oranges.

THE WITNESS: My editorial judgment is that circumstances vary greatly and one behaves depending upon those circumstances.

BY MR. KIZZIA:

Q Why wasn't someone very knowledgeable about the JFK assassination assigned to review Mr. Breo's articles before they were published in JAMA on May 27, 1992?

MR. BABCOCK: Object to the form of the question.

Go ahead.

THE WITNESS: The nature of journalistic articles in JAMA such as Mr. Breo's is such that our standard practice does not have them set to third or fourth parties outside the building for additional review.

Our standard practice was followed no more, no less, Mr. Breo's articles.

BY MR. KIZZIA:

Q Why is that the standard practice?

A Because it's been successful for so many decades.

Q Successful in what regard? How do you judge success?

A Readership, interest, recognition.

Q Was there any discussion about whether or not the articles that Mr. Breo wrote that were published in JAMA on May 27th, 1992, should be submitted to someone very knowledgeable about the JFK assassination for review prior to publication?

A No.

Q So that was not even considered?

A It wasn't even considered.

Q At the conference in Chicago on April 3rd of 1993 did you bring and allow the audience to take copies of the JAMA articles?

A I believe some were brought. I don't remember which ones.

Q Were these reprints of the articles?

A My recollection is that reprints or whole

issues of the Journal for the three issues that dealt with the autopsy and its findings, namely, in May 1992, October '92 and April '93 were brought for attendees at this conference to be able to have for their own use if they wished.

Q Were those reprints or just copies?

A I don't rightly remember. It may have been some of each including some of --

MR. BABCOCK: Don't speculate.

THE WITNESS: I'm sorry. There were some reprints, there were some copies, and there were some whole issues of JAMA, but I don't remember which was which.

BY MR. KIZZIA:

Q By that time, Dr. Lundberg, you knew that Dr. Crenshaw had voiced objection to what he claimed to be false impressions created by the articles about it, right?

MR. BABCOCK: That's a question. Did you know that?

THE WITNESS: Yes I knew that.

BY MR. KIZZIA:

Q But you still chose to distribute copies of the articles at that conference notwithstanding that?

A I chose to make available various copies, but I've testified that I don't remember which ones or how

many of which or in which form they were.

Q Did you say anything at the conference in Chicago to correct or clarify anything that had been stated about Dr. Crenshaw in the May 27th, 1992, articles?

MR. BABCOCK: Object to the form of the question. It assumes there was anything that needed correcting.

Go ahead and answer.

THE WITNESS: I made no statements or comments regarding Dr. Crenshaw.

BY MR. KIZZIA:

Q Why did you choose to distribute copies of articles that contained statements about Dr. Crenshaw that he had already brought to your attention to be in controversy?

MR. BABCOCK: Whoa. Read that back.

(Record read.)

MR. BABCOCK: That's not exactly what he said before, but go ahead.

THE WITNESS: The JAMA deals with controversial matters every week. Very little we publish is not in controversy.

The fact that something is controversial does not prevent us from publishing or distributing

such information.

BY MR. KIZZIA:

Q Well, the controversial subjects that you refer to don't normally deal with an individual or individual's reputation, do they?

MR. BABCOCK: I object to the form of the question. That assumes this one does.

But go ahead.

THE WITNESS: The controversies we deal with in JAMA have no defined limits and may deal with almost anything.

MR. KIZZIA: Objection, nonresponsive.

BY MR. KIZZIA:

Q You said something to the effect that JAMA publishes articles on controversial subjects on a weekly basis.

MR. BABCOCK: He said almost every week.

THE WITNESS: Almost every week.

BY MR. KIZZIA:

Q You are not suggesting that almost every week JAMA publishes an article that calls into question an individual's integrity or attacks their reputation, are you?

MR. BABCOCK: He can't possibly answer that without

going back and looking at the various issues. And attacks the reputation is such a broad term.

THE WITNESS: I can't answer that question.

BY MR. KIZZIA:

Q Well, would you say that that is a customary subject of JAMA editions?

MR. BABCOCK: What is?

MR. KIZZIA: An individual's credibility or reputation.

THE WITNESS: Yes.

BY MR. KIZZIA:

Q Can you give me another example of a JAMA article published since May 27th, 1992, that is comparable to the kind of journalistic treatment that was given to Dr. Crenshaw in Mr. Breo's articles that were published in JAMA on May 27th, 1992?

MR. BABCOCK: Object to the form of the question. That's so much in the eye of the beholder. How can he possibly answer a question like that?

THE WITNESS: I can't answer that question.

BY MR. KIZZIA:

Q Prior to distributing the copies of the JAMA articles at the conference in Chicago on April 3rd, 1993, did you give any consideration as to whether or

not the articles were or may have been damaging to Dr. Crenshaw's reputation?

A Yes.

Q What consideration did you give them?

A Due consideration to his express concerns, concerns expressed by his legal counsel and a desire to assuage his concerns in any reasonable way.

Q How did you try to assuage his concerns?

A By publishing something from him in publishable form that would give him his time, his space to state his understanding, his point of view, on the pages of our Journal.

Q JAMA hasn't published anything submitted by or on behalf of Dr. Crenshaw, has it?

A It has not.

Q Last week you said that you knew Dr. Lawrence Altman?

A That is true.

Q Is he a friend of yours?

A As I testified last week, he's a fellow physician, a fellow journalist and probably would be called a friend.

Q Do you subscribe to the New York Times?

A I do.

Q Did you read Dr. Altman's articles that were published in the New York Times on May 20th and May 26th, 1992, pertaining to the press conference that you participated in and to the JAMA articles?

A I did.

Q Did you read those articles at or near the time that they were published in the New York Times?

A I did.

Q So you became aware on or about May 20th, 1992, that Dr. Altman had expressed some criticism of the JAMA articles?

MR. BABCOCK: Object to the form of the question. If you are going to ask him to comment about an article that's a couple years old, I think he should be given an opportunity to look at it.

THE WITNESS: I agree with counsel.

BY MR. KIZZIA:

Q Do you remember anything critical that Dr. Altman said in his articles and particularly with regard to JAMA's treatment of Dr. Crenshaw?

A My sketchy remembrance a year and a half later was that Dr. Altman found substantial fault with Dr. Crenshaw's book and Dr. Crenshaw's participation in the book.

Q Is that all you recall about his articles?

A No.

Q What else do you recall?

A I recall that the article on the 20th reported on the JAMA articles, the press conference and generally reported directly and/or supported the JAMA findings and reports, but criticized the lack of a comment by Dr. Crenshaw within one of the Breo pieces.

Q You mean criticized the fact that Dr. Crenshaw had not been interviewed or contacted for comment?

MR. BABCOCK: Well, the article says what it says.

MR. KIZZIA: Well, I want to know what he meant by what he just said.

MR. BABCOCK: What possible good is his recollection about -- Why don't you show him the article. Get him to comment on it.

THE WITNESS: I'm working from fuzzy memory, and I don't think I should go further.

BY MR. KIZZIA:

Q Let me show you what or I'll ask you to look at the article that's marked as Exhibit 3III.

Do you recognize Deposition Exhibit 3III as a copy of one of Dr. Altman's articles that appeared in the New York Times in May 1992?

A I do.

Q I refer you to the last paragraph in the first column which is on the far left where it says that "The merit of the book aside it turns out that the Journal's research was less than thorough. It did not try to interview Dr. Crenshaw."

Do you see that?

A I do.

Q Was that what you were referring to as the critical statement about not obtaining a comment from Dr. Crenshaw?

A Yes.

Q Then going on it states further that, "Although the Dallas doctors told the Journal they never saw Dr. Crenshaw in Kennedy's trauma room, two actually had told the Warren Commission that he was a member of the team."

Do you see that?

A I do.

Q Do you respect the views of Dr. Altman?

MR. BABCOCK: Generally?

MR. KIZZIA: Yeah, we'll start out with generally.

THE WITNESS: Yes. MR. BABCOCK: Wait a minute. That's too broad.

BY MR. KIZZIA:

Q Did you have respect for his comments that are contained in the article that's marked as Exhibit 3III?

MR. BABCOCK: Object to the form of the question. His respect for. That doesn't make sense to me.

Maybe it does to you. If it does, answer it.

THE WITNESS: I respect Dr. Altman's work, and I respect his medical reporting in this article.

BY MR. KIZZIA:

Q Did you do anything to try to verify whether or not what Dr. Altman said about the testimony of physicians to the Warren Commission concerning Dr. Crenshaw's involvement on the trauma team?

A Yes.

Q What did you do to verify that?

A I asked Mr. Breo to check into whether somewhere in one of those volumes of the Warren Commission whether that was there.

Q You didn't do it yourself?

A I did not.

Q Did Mr. Breo report back to you?

A He did.

Q And what did he tell you?

A He said that there were some mentions of Crenshaw's name in some of the volumes at the Warren Commission.

Q Did you give any consideration to publishing a clarification on that point?

A No.

Q Why not?

A We don't publish clarifications.

Q Did you give any consideration to publishing a correction on that point?

A Yes.

Q Was that around the time of your having read Dr. Altman's article in May 1992?

A Yes.

Q Why did you ask Mr. Breo to go check to see if Dr. Crenshaw was mentioned in testimony before the Warren Commission?

A What's the last part of your question?

Q Why did you ask Mr. Breo to go and check to see if Dr. Crenshaw was mentioned in testimony before the Warren Commission?

A To see if he was.

Q Why did you want to know?

A To see whether there had been such testimony

and whether Dr. Altman's statement was correct.

Q And it turns out there had been that testimony, Dr. Altman's statement in that record was correct?

MR. BABCOCK: Compound question. Let's answer one at a time.

BY MR. KIZZIA:

Q It turned out that there had been that testimony?

A According to what Mr. Breo told me.

Q Which in your mind verified what Dr. Altman had said?

A Yes.

MR. BABCOCK: Wait a minute. What did Altman say that verified it?

THE WITNESS: In this one spot in this one paragraph in this one article.

BY MR. KIZZIA:

Q So what, if anything, did you do with this information you received from Mr. Breo to verify that point made by Dr. Altman?

A I reviewed what Mr. Breo had written in his article and determined that it was factually correct as stated and did not warrant a correction or a retraction.

Q Did you make that review in May of 1992?

A I don't remember exactly when it was.

Q Can you tell me approximately when it was?

A 1992.

Q Sometime in 1992?

A Yeah.

Q Near the bottom, actually the last sentence of the second column of Dr. Altman's article that's Exhibit 3III it refers to Dr. Crenshaw's participation on the team that tried to resuscitate Lee Harvey Oswald after he was shot on November 24th, 1963, do you see that?

A I do.

Q And he refers to a telephone call from someone purporting to be President Johnson?

A It does.

Q And then in the second full paragraph in the third column Dr. Altman stated, "In the Journal interviews Dr. Charles Baxter, the emergency room chief, denied that such a call was received by any doctor, but the denial came from a surgeon who could not have known about the call because he was not present during Oswald's surgery Dr. Crenshaw said."

Do you see that?

A I do.

Q And then it goes on to say, "Indeed another

doctor has confirmed such a call although the details and who made it are not clear."

Do you see that?

A I do.

Q Then he goes on to identify that doctor as Phillip E. Williams. Do you see that?

A Yes.

Q Did you do anything after you read Dr. Altman's article to try to verify that information contained in his article?

A I did not.

Q Why not?

A It seemed to me that this was ifs followed by ifs followed by whethers followed by speculation, and it didn't warrant a verification by us or the likelihood that we would ever be able to chase down that ghost.

So I didn't direct anyone to do anything.

Q Did you rereview Mr. Breo's articles to see exactly what was said about that point?

A I don't recall.

Q Did you ever talk to Mr. Altman about his comments about the JAMA articles that were contained in his articles that appeared in the New York Times in May 1992?

A I don't think so.

Q Do you know whether or not any other representative of JAMA, the AMA, spoke with Dr. Altman?

A I don't know.

Q Other than copies of Mr. Breo's articles that may have been distributed at the press conference that you participated in on May 19th, 1992, and copies of the articles that you distributed or at least made available at the conference in Chicago on April 3rd, 1993, have you ever sent out, distributed or disseminated copies of or reprints of Mr. Breo's articles that appeared in JAMA on May 27th, 1992?

A Yes.

Q Could you describe any such distribution or dissemination?

A Occasional individuals ask me for copies on a personal basis, and I sent such from time to time.

Q Are you talking about personal friends of yours?

A Friends, acquaintances. Someone who writes a letter asking for a copy.

Q These are requests that you personally have responded to?

A Yes.

Q How often would you say something like that has occurred since May 27th, 1992?

A Maybe 15 or 20 times in 1992.

Q How about 1993?

A I don't think any.

Q Did you provide any additional or supplementary information about the content of the articles when you responded to those inquiries?

A No.

Q Have there been any other distributions or disseminations of copies of the articles?

A I have no knowledge of that.

Q Then you haven't sent out copies of the articles or reprints of the articles other than what you've described?

A No, as I've already testified.

Q From time to time has JAMA been requested to give permission for republication of Mr. Breo's articles that were published in JAMA on May 27th, 1992?

A I haven't knowledge of that. It's not my area.

Q Whose area is it?

A Mr. Robert Kennitt (phonetic).

Q The same person who's in charge of reprints would be in charge of republication?

A He's the publisher. People report to him who are responsible for such activities.

Q Are you aware of any republications of the articles since May 27th, 1992?

A Yes.

Q Could you describe any such republications that you are aware of?

A It's my recollection that one, two or three of the articles were republished in French JAMA, republished in Japanese in the Japanese JAMA, but I don't recall from my personal recollection which international JAMA's otherwise republished them.

Also, the American Medical Association published a collection of papers on violence in book form in 1992, and the first two Breo articles were included as part of this book on violence along with dozens of other articles.

Q Do you know what the name of the book is?

A Violence.

Q Do you know when publication of that book occurred?

A 1992.

Q Could you be more specific?

A Summer.

Q How long after the articles were published in JAMA on May 27th, 1992, were the articles republished in the AMA's book on violence?

A Summer is after June and before September 21st. Probably three or four months.

Q Who was in charge of that project for the AMA?

A Mr. Michael Springer.

Q What is his position with the AMA?

A He is associate publisher for the specialty journals.

Q Associate publisher?

A For the specialty journals.

Q Does he report to you?

A No.

Q Did you say last week that as editor in charge of scientific publications for the AMA you were responsible for the contents of all the specialty journals?

A That is true.

Q What was your responsibility or involvement, if any, with the publication of the book on violence by the AMA in the summer of 1992?

A The editorial board of the Journal of the American Medical Association and its nine specialty

journals and their chief editors voted in 1991 to focus on the subject of violence in America on the pages of all of them at a fixed date in common in 1992.

That date was June. Thus, our 11 journals published more than 100 articles on the subject of violence in America.

Research, clinical articles, ethics and commentary plus medical news, journalistic articles on the subject of violence in America all the same day with the same embargo date.

Dr. C. Everette Coupe (phonetic) and I were the coeditors of the project. A number of articles appeared in JAMA prior to the date in June 1992 of the embargo date for the entire project on a one-by-one basis.

Starting in spring of 1992 every week or two we published an article in JAMA on violence so as to introduce the subject to our readers and to build interest in the subject on the part of our readers and through the media on the part of the public of America about the difficulties of violence in America.

The two articles by Dennis Breo in the May 27 JAMA served as one -- correction -- as two of the several articles we chose to publish ad seriatim for the

spring leading up to the press conference in Washington D.C. in June of 1992 when Dr. Coupe and I cohosted the meeting at the national press club and had other editors and authors of violence articles in JAMA brought together for the media to interview at another AMA press conference about the issue of violence in America, particularly firearm violence, gunshot violence.

The articles that appeared in the --

MR. BABCOCK: Dr. Lundberg, I don't mean to interrupt you, but that can't be responsive.

THE WITNESS: It is exactly responsive, yes.

The articles which led up to that June publication and the 11 AMA journals -- correction -- ten at that time on that were compiled into one book called Violence, and that's the answer.

MR. WATLER: May I ask how much longer you expect to be with the witness?

MR. KIZZIA: One second. Let me cover this point.

BY MR. KIZZIA:

Q You were the coeditor of that book?

A Dr. Coupe and I coedited the JAMA which was dedicated to violence in early June.

The editing of the book was -- had almost nothing to it. It was just compiling paper already in

print and republishing them as a compilation with Mr. Springer in charge of that.

These are already articles in print in ten different journals. You just put them to go, slap a cover around them.

Q So you were not coeditor of the book then?

A I'd have to pull the book out to see how it's indicated. I was responsible for the editorial content of all of it.

Dr. Coupe shared that responsibility for the JAMA. Mr. Springer was the publisher and a couple of other editors worked with me putting it together.

Q Was your permission required as editor in chief of JAMA for republication of Mr. Breo's articles that appeared in the May 27th, 1992, edition of JAMA?

A Yes.

Q Is there any other republication of those articles that you know of?

A No.

Q You said earlier that --

MR. WATLER: Before you get out another question, it's past 5:45. I think everyone at the table has 7:00 o'clock flights at O'Hare Airport. At least among the attorneys.

How much longer do you intend to be with the witness this evening?

MR. KIZZIA: Well, we can't finish Dr. Lundberg's deposition and make 7:00 o'clock flights.

Can we reconvene at another time up here?

MR. BABCOCK: No. No. No. We are going to finish today. I promise Dr. Lundberg and you kind of did too in his presence last time.

MR. KIZZIA: Let's go off the record.

THE VIDEO OPERATOR: Going off the record, 5:47. Tape stopped.

(Discussion held off the record.)

MR. BABCOCK: Counsel has greed that we are going to recess the deposition right now on the following conditions.

The first condition is that the conclusion of the deposition is going to take place up here in Dr. Lundberg's office in Chicago regardless of what may happen with respect to his challenge to the Court's personal jurisdiction.

The second condition is that when we reconvene that the deposition will be finished at the next go around.

That is, within normal business hours the

next -- One more day of normal business hours deposition when we reconvene.

And the third condition is that it be done in the near future within the next two, three weeks, subject to everybody's schedule obviously.

And if I have correctly stated those conditions, I'd like everybody to agree to them.

MR. KIZZIA: I agree to them, as I told you, Chip, but I assume that that takes into consideration if by some crazy unforeseen event we can't find a mutually agreed upon date within the next two or three weeks that we are still going to be able to do it as soon as we can get such a mutually convenient date.

I can tell you me personally that I'll be able to do it, but I can't speak for the others.

MR. BABCOCK: We'll all commit to work in good faith towards that I assume.

MR. WATLER: Yeah. I'm agreeable to the conditions you listed.

MR. RICHEY: I'm agreeable also.

MR. BABCOCK: I think we can probably agree on behalf of Mr. Williams maybe?

MR. WATLER: Yes, I'm sure.

MR. KIZZIA: Before we go can we go back on the

record just for one point that I wanted to cover that was brought up?

MR. BABCOCK: You may make us miss planes because of this.

MR. KIZZIA: This is going to be real short.

THE VIDEO OPERATOR: We are back on the record. The time is 5:59 p.m.

BY MR. KIZZIA:

Q Dr. Lundberg, you said earlier that JAMA does not do clarifications?

A That is correct.

Q Has JAMA since you've been editor in chief ever published a clarification?

A Not to my memory with such a heading.

Q Well, is there anything that JAMA has published that's not under the heading clarification or the heading correction that may have the effect of clarifying something that was stated in the JAMA article?

A We publish corrections.

Q Have you ever had an occasion other than with regard to Mr. Breo's comments about Dr. Crenshaw, and I'm not asking you to agree that this occurred in that instant, but where something was stated that was

published in JAMA and which was objected to which upon review you determined to have been literally correct but may have created a false impression, have you ever had a circumstance like that?

MR. WATLER: I'll object to the form of the question. It calls for speculation. It assumes facts not in evidence.

MR. RICHEY: I'll join in the objection.

THE WITNESS: I don't recall.

MR. KIZZIA: Thank you, sir.

THE VIDEO OPERATOR: Off the record. It's 6:01 p.m. This concludes tape three, December 28th.

(Deposition recessed until 10:00 a.m. Tuesday, January 11, 1993.)

NO. 73-93

CHARLES A. CRENSHAW, M.D., AND GARY SHAW	§	IN THE DISTRICT COURT OF
V.	§	JOHNSON COUNTY, TEXAS
LAWRENCE SUTHERLAND, ET AL.	§	18TH JUDICIAL DISTRICT

SUPPLEMENTAL NOTICE TO TAKE VIDEOTAPED DEPOSITION OF DR. GEORGE LUNDBERG

TO: Defendant George Lundberg, by and through his attorney of record, Mr. Charles L. Babcock, Jackson and Walker, 901 Main Street, Suite 6000, Dallas, Texas 75202.

YOU WILL TAKE NOTICE that at 10:00am on the 28th day of December, 1993, at the offices of the American Medical Association 515 North State Street, Chicago, Illinois 60610, Plaintiffs will continue with the videotaped deposition of George Lundberg, taken upon oral examination as authorized by Rule 200, et seq., of the Texas Rules of Civil Procedure. Such videotaped examination will be taken before a certified shorthand reporter authorized to take such deposition as provided in Chapter 20, Tex.Civ.Prac. and Rem. Code, and/or Chapter 52 of Title 2, Texas Government Code. The videotaped examination will continue from day to day until completed. The witness is directed to produce at the time and place above the documents described in Exhibit A attached hereto and incorporated herein by reference.

Respectfully submitted,

D. BRADLEY KIZZIA
State Bar No. 11547750

4300 NationsBank Plaza
Post Office Box No. 50100
Dallas, Texas 75250
(214) 651-4592
(214) 651-4330 (Fax)

ATTORNEY FOR PLAINTIFFS

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document was sent this 21st day of December, 1993, to all known counsel of record.

D. BRADLEY KIZZIA

EXHIBIT TO VIDEOTAPED DEPOSITION NOTICE OF DR. GEORGE LUNDBERG

25. True, correct, and legible copies of the two publications regarding journalistic and/or editorial ethics that Dr. Lundberg identified as authoratative during his deposition testimony in this case on December 21, 1993.

26. True, correct, and legible copy of the text or notes reflecting the speech or presentation made by Dr. Lundberg on the JFK assassination at the conference in Chicago in April, 1993.

27. True, correct, and legible copies of all versions of JAMA's Instructions for Authors that have been in effect since January 1, 1992.

28. True, correct, and legible copies of all versions of JAMA's letters policy that have been in effect since January 1, 1992.

29. True, correct, and legible copies of all versions of JAMA's corrections policy that have been in effect since January 1, 1992.

Instructions for Authors

MANUSCRIPT CRITERIA AND INFORMATION

These instructions apply to all categories of manuscripts including, for example, Letters to the Editor and submissions to special journal columns.

Send manuscripts to the Editor, George D. Lundberg, MD, *JAMA*, 515 N State St, Chicago, IL 60610. Manuscripts are considered with the understanding that they have not been published previously and are not under consideration by another publication. A complete report following presentation or publication of preliminary findings elsewhere (eg, in an abstract) can be considered. Include copies of possibly duplicative material that have been previously published or are currently being considered elsewhere.

Cover Letter

Designate one author as correspondent and provide a complete address, telephone number, and fax number. Manuscripts should have no more than six authors; a greater number requires justification. Authors may add a publishable footnote explaining order of authorship.[1]

In the cover letter include (1) statement on authorship responsibility and (2) statement on financial disclosure and (3) one of the two following statements on copyright or federal employment. Each of these three statements must be signed by *all* authors.

1. **Authorship Responsibility.**—"I certify that I have participated sufficiently in the conception and design of this work and the analysis of the data (when applicable), as well as the writing of the manuscript, to take public responsibility for it. I believe the manuscript represents valid work. I have reviewed the final version of the submitted manuscript and approve it for publication. Neither this manuscript nor one with substantially similar content under my authorship has been published or is being considered for publication elsewhere, except as described in an attachment. If requested, I shall produce the data upon which the manuscript is based for examination by the editors or their assignees."

2. **Financial Disclosure.**—"I certify that any affiliations with or involvement in any organization or entity with a direct financial interest in the subject matter or materials discussed in the manuscript (eg, employment, consultancies, stock ownership, honoraria, expert testimony) are disclosed below."

Research or project support should be listed in an acknowl-edgment.

3. **Copyright Transfer.**—"In consideration of the action of the American Medical Association (AMA) in reviewing and editing this submission, the author(s) undersigned hereby transfers, assigns, or otherwise conveys all copyright ownership to the AMA in the event that such work is published by the AMA."

4. **Federal Employment.**—"I was an employee of the US federal government when this work was investigated and prepared for publication; therefore, it is not protected by the Copyright Act and there is no copyright of which the ownership can be transferred."

Editorial Review and Processing

Peer Review.—All submitted manuscripts are reviewed initially by a *JAMA* editor. Those manuscripts with insufficient priority for publication are returned promptly. Other manuscripts are sent to expert consultants for peer review. Peer reviewer identities are kept confidential. Author identities are not kept confidential.

Editing.—Accepted manuscripts are copy edited according to AMA style and returned to the author for approval. Authors are responsible for all statements made in their work, including changes made by the copy editor and authorized by the corresponding author.

Reprints.—Reprint order forms are included with the edited typescript sent for approval to authors. Reprints are shipped 6 to 8 weeks after publication.

All accepted manuscripts become the permanent property of the AMA and may not be published elsewhere without written permission from both the author(s) and the AMA.

Manuscript Preparation[2-6]

- Manuscripts should be prepared in accordance with the *American Medical Association Manual of Style*[2] and/or the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals."[3]
- Submit the original manuscript and three photocopies, typed on one side of standard-sized white bond paper. Use ample margins.
- Double-space throughout, including title page, abstract, text, acknowledgments, references, legends for illustrations, and tables. Start each of these sections on a new page, numbered consecutively in the upper right-hand corner, beginning with the title page.
- Provide copy that can be scanned by an optical character reader: no smudges or pencil or pen marks. Use only standard 10- or 12-pitch type and spacing. Do not use 10-pitch type with 12-pitch spacing. If prepared on a word processor, do not use proportional spacing; use unjustified (ragged) right margins and letter-quality printing.
- On the title page type the full names, highest academic degrees, and affiliations of all authors. If an author's affiliation has changed since the work was done, list the new affiliation as well.
- Use Système International (SI) measurements.[5]
- Use generic names of drugs, unless the specific trade name of a drug used is directly relevant to the discussion.
- Do not use abbreviations in the title or abstract and limit their use in the text.

Abstract.—Include a *structured abstract* of no more than 250 words for reports of original data from clinical investigations with human subjects and reviews (including meta-analyses). (See Instructions for Preparing Structured Abstracts on following page.) For other major manuscripts, include an abstract of no more than 150 words. Abstracts are not required for editorials, commentaries, and special features of THE JOURNAL.

Informed Consent.—For experimental investigations of human or animal subjects, state in the methods section of the manuscript that an appropriate institutional review board approved the project. For those investigators who do not have formal ethics review committees (institutional or regional), the principles outlined in the Declaration of Helsinki should be followed.[6] For investigations of human subjects, state in the methods section the manner in which informed consent was obtained from the subjects.

Case Descriptions and Photographs.—Include a signed statement of consent to publish all case descriptions and photographs from all patients (parents or legal guardians for minors) who can be identified in such written descriptions and photographs.

Manuscript Checklist

1. Include original manuscript and three photocopies.
2. Include in the cover letter statements—signed by each author—on (*a*) authorship responsibility, (*b*) financial disclosure, and (*c*) copyright transfer or federal employment.
3. Leave right margins unjustified (ragged).
4. Check all references for accuracy and completeness. Put references in proper format in numerical order, making sure each is cited in the text.
5. Send four sets of all illustrations.
6. Provide and label an abstract.
7. Include complete consent forms for identifiable patient descriptions and photographs.
8. Include research or project support and funding in an acknowl-edgment.
9. Include written permission from publishers and authors to reproduce or adapt previously published illustrations and tables.
10. Designate a corresponding author and provide a complete address, telephone number, and fax number.

References.—Number references in the order they are mentioned in the text; do not alphabetize. In text, tables, and legends, identify references with superscript arabic numerals. In listing references, follow AMA style, abbreviating names of journals according to *Index Medicus*. Note: List all authors and/or editors up to six; if more than six, list the first three and "et al."

Examples of Reference Style:

1. Lomas J, Enkin M, Anderson GM, Hannah WJ, Vayda E, Singer J. Opinion leaders vs audit and feedback to implement practice guidelines: delivery after previous cesarean section. *JAMA*. 1991;265:2202-2207.
2. Marcus R, Couston AM. Water-soluble vitamins: the vitamin B complex and ascorbic acid. In: Gilman AG, Rall TW, Nies AS, Taylor P. *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 8th ed. New York, NY: Pergamon Press; 1990:1530-1552.

Authors are responsible for the accuracy and completeness of their references and for correct text citation.

Tables.—Double-space on separate sheets of standard-sized white bond paper. Title all tables and number them in order of their citation in the text. If a table must be continued, repeat the title on a second sheet, followed by "(cont)."

Illustrations.—Submit, in triplicate, (1) 5 × 7-inch glossy photographs for all graphs and black-and-white photographs; (2) high-contrast prints for roentgenograms; (3) color slides for color illustrations. Computer-generated graphics produced by high quality laser printers (300 dots per inch) also are acceptable. Number illustrations according to their order in the text. Affix a label with figure number, name of first author, short form of the manuscript title, and an arrow indicating "top" to the back of the print. Never mark on the print or the transparency itself.

- Double-space legends (maximum length, 40 words) on separate pages. Indicate magnification and stain used for photomicrographs.
- Acknowledge all illustrations and tables taken from other publications and submit written permission to reprint from the original publishers.

References

1. The International Committee of Medical Journal Editors. Statements from the International Committee of Medical Journal Editors. *JAMA*. 1991;265:2697-2698.
2. Iverson CI, Dan BB, Glitman P, et al. *American Medical Association Manual of Style*. 8th ed. Baltimore, Md: Williams & Wilkins; 1988.
3. International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. *N Engl J Med*. 1991;324:424-428.
4. Lundberg GD, Flanagin A. New requirements for authors: signed statements of authorship responsibility and financial disclosure. *JAMA*. 1989;262:2003-2004.
5. Lundberg GD. SI unit implementation—the next step. *JAMA*. 1988;260:73-76.
6. 41st World Medical Assembly. Declaration of Helsinki: recommendations guiding physicians in biomedical research involving human subjects. *Bull Pan Am Health Organ*. 1990;24:606-609.

Instructions for Preparing Structured Abstracts

All manuscripts that are (1) reports of original data from clinical investigations with human subjects or (2) reviews, including meta-analyses, should be submitted with structured abstracts as described below.

Reports of Original Data From Clinical Investigations With Human Subjects

Authors submitting manuscripts reporting the results of clinical investigations should prepare an abstract of no more than 250 words under the following headings: Objective, Design, Setting, Patients (or Other Participants), Interventions (if any), Main Outcome Measure(s), Results, and Conclusions. The content following each heading should be as follows:

1. *Objective*. The abstract should begin with a clear statement of the precise objective or question addressed in the report. If more than one objective is addressed, the main objective should be indicated and only key secondary objectives stated. If an a priori hypothesis was tested, it should be stated.

2. *Design*. The basic design of the study should be described. The duration of follow-up, if any, should be stated. As many of the following terms as apply should be used.

A. Intervention studies: randomized control trial (see Glossary for the definition of this and other technical terms); nonrandomized control trial; double-blind; placebo control; crossover trial; before-after trial.

B. For studies of screening and diagnostic tests: criterion standard (that is, a widely accepted standard with which a new or alternative test is being compared; this term is preferred to "gold standard"); blinded or masked comparison.

C. For studies of prognosis: inception cohort (subjects assembled at a similar and early time in the course of the disorder and followed thereafter); cohort (subjects followed forward in time, but not necessarily from a common starting point); validation cohort or validation sample if the study involves the modeling of clinical predictions.

D. For studies of causation: randomized control trial; cohort; case-control; survey (preferred to "cross-sectional study").

E. For descriptions of the clinical features of medical disorders: survey; case series.

F. For studies that include a formal economic evaluation: cost-effectiveness analysis; cost-utility analysis; cost-benefit analysis. For new analyses of existing data sets, the data set should be named and the basic study design disclosed.

3. *Setting*. To assist readers to determine the applicability of the report to their own clinical circumstances, the study setting(s) should be described. Of particular importance is whether the setting is the general community, a primary care or referral center, private or institutional practice, ambulatory or hospitalized care.

4. *Patients or Other Participants*. The clinical disorders, important eligibility criteria, and key sociodemographic features of patients should be stated. The numbers of participants and how they were selected should be provided (see below), including the number of otherwise eligible subjects who were approached but refused. If matching is used for comparison groups, characteristics that are matched should be specified. In follow-up studies, the proportion of participants who completed the study must be indicated. In intervention studies, the number of patients withdrawn for adverse effects should be given.

For selection procedures, these terms should be used, if appropriate: random sample (where "random" refers to a formal, randomized selection in which all eligible subjects have a fixed and usually equal chance of selection); population-based sample; referred sample; consecutive sample; volunteer sample; convenience sample. These terms assist the reader to determine an important element of the generalizability of the study. They also supplement (rather than duplicate) the terms used by professional indexers when articles are entered into computerized databases.

5. *Intervention(s)*. The essential features of any interventions should be described, including their method and duration of administration. The intervention should be named by its most common clinical name (for example, the generic term "chlorthalidone"). Common synonyms should be given as well to facilitate electronic text-word searching. This would include the brand name of a drug if a specific product was studied.

6. *Main Outcome Measure(s)*. The primary study outcome measurement(s) should be indicated as planned before data collection began. If the paper does not emphasize the main planned outcomes of a study, this fact should be stated and the reason indicated. If the hypothesis being reported was formulated during or after data collection, this information should be clearly stated.

7. *Results*. The main results of the study should be given. Measurements that require explanation for the expected audience of the manuscript should be defined. Important measurements not included in the presentation of results should be declared. As relevant, it should be indicated whether observers were blinded to patient group-

Adapted from Haynes RB, Mulrow CD, Huth EJ, Altman DG, Gardner MJ. More informative abstracts revisited. *Ann Intern Med*. 1990;113:69-76.

ings, particularly for subjective measurements. Due to the current limitations of retrieval from electronic databases, results must be given in narrative or point form rather than tabular form if the abstract is to appear in computerized literature services such as MEDLINE. If possible, the results should be accompanied by confidence intervals (for example, 95%) and the exact level of statistical significance. For comparative studies, confidence intervals should relate to the differences between groups. For nonsignificant differences for the major study outcome measure(s), the clinically important difference sought should be stated and the confidence interval for the difference between the groups should be given. When risk changes or effect sizes are given, absolute values should be indicated so that the reader can determine the absolute as well as relative impact of the finding. Approaches such as "number needed to treat" to achieve a unit of benefit are encouraged when appropriate; reporting of relative differences alone is usually inappropriate. If appropriate, studies of screening and diagnostic tests should use the terms "sensitivity," "specificity," and "likelihood ratio." If predictive values or accuracy is given, prevalence or pretest likelihood should be given as well. No data should be reported in the abstract that do not appear in the rest of the manuscript.

8. *Conclusions.* Only those conclusions of the study that are directly supported by the evidence reported should be given, along with their clinical application (avoiding speculation and overgeneralization), and indicating whether additional study is required before the information should be used in usual clinical settings. Equal emphasis must be given to positive and negative findings of equal scientific merit.

To permit quick and selective scanning, the headings outlined above should be included in the abstract. For brevity, parts of the abstract can be written in phrases rather than complete sentences. (For example: "2. *Design.* Double-blind randomized trial," rather than "2. *Design.* The study was conducted as a double-blind, randomized trial.") This technique may make reading less smooth but facilitates selection scanning and allows more information to be conveyed per unit of space.

Review Manuscripts (Including Meta-analyses)

Authors submitting review manuscripts and reports of the results of meta-analyses should prepare an abstract of no more than 250 words under the following headings: Objective, Data Sources, Study Selection, Data Extraction, Data Synthesis, and Conclusions. The content following each heading should be as follows:

1. *Objective.* The abstract should begin with a precise statement of the primary objective of the review. The focus of this statement should be guided by whether the review emphasizes factors such as cause, diagnosis, prognosis, therapy, or prevention. It should include information about the specific population, intervention, exposure, and test or outcome that is being reviewed.

2. *Data Sources.* A succinct summary of data sources should be given, including any time restrictions. Potential sources include experts or research institutions active in the field, computerized databases and published indexes, registries, abstract booklets, conference proceedings, references identified from bibliographies of pertinent articles and books, and companies or manufacturers of tests or agents being reviewed. If a bibliographic database is used, the exact indexing terms used for article retrieval should be stated, including any constraints (for example, English language or human subjects).

3. *Study Selection.* The abstract should describe the criteria used to select studies for detailed review from among studies identified as relevant to the topic. Details of selection should include particular populations, interventions, outcomes, or methodologic designs. The method used to apply these criteria should be specified (for example, blind review, consensus, multiple reviewers). The proportion of initially identified studies that met selection criteria should be stated.

4. *Data Extraction.* Guidelines used for abstracting data and assessing data quality and validity (such as criteria for causal inference) should be described. The method by which the guidelines were applied should be stated (for example, independent extraction by multiple observers).

5. *Data Synthesis.* The main results of the review, whether qualitative or quantitative, should be stated. Methods used to obtain these results should be outlined. Meta-analyses should state the major outcomes that were pooled and include odds ratios or effect sizes and, if possible, sensitivity analyses. Numerical results should be accompanied by confidence intervals, if applicable, and exact levels of statistical significance. Evaluations of screening and diagnostic tests should address issues of sensitivity, specificity, likelihood ratios, receiver operating characteristic curves, and predictive values. Assessments of prognosis could include summarizations of survival characteristics and related variables. Major identified sources of variation between studies should be stated, including differences in treatment protocols, co-interventions, confounders, outcome measures, length of follow-up, and dropout rates.

6. *Conclusions.* The conclusions and their applications should be clearly stated, limiting generalization to the domain of the review. The need for new studies may be suggested.

Glossary of Methodologic Terms

BEFORE-AFTER TRIAL. Investigation of therapeutic alternatives in which individuals of one period and under one treatment are compared with individuals at a subsequent time, treated in a different fashion. If the disorder is not fatal and the "before" treatment is not curative, the same individuals may be studied in the before and after periods, strengthening the design through increased group comparability for the two periods. See also CROSSOVER TRIAL.

BLIND or BLINDED. Masked. Unaware. The term may be modified according to the purpose of the blinding. For example, clinicians or patients can be blind to the treatments that patients are receiving and observers can be blind to each other's assessments, making their observations uninfluenced by one another (see also DOUBLE-BLIND). To avoid confusion, the term MASKED is preferred in studies in which vision loss of patients is an outcome of interest.

CASE-CONTROL STUDY (CASE-REFERENT OR CASE-COMPARISON STUDY). Study generally used to test possible causes of a disease or disorder, in which individuals who have a designated disorder are compared with individuals who do not have the disorder with respect to previous current exposure to a putative causal factor. For example, persons with hepatic cancer (cases) are compared with persons without hepatic cancer (controls) and history of hepatitis B is determined for the two groups. A CASE-CONTROL STUDY is often referred to as a RETROSPECTIVE STUDY (even if patients are recruited prospectively) because the logic of the design leads from effect to cause.

CASE SERIES. A series of patients with a defined disorder. The term is usually used to describe a study reporting on a consecutive collection of patients treated in a similar manner, without a concurrent control group. For example, a surgeon might describe the characteristics of and outcomes for 100 consecutive patients with cerebral ischemia who received a revascularization procedure. See also CONSECUTIVE SAMPLE.

COHORT. A group of persons with a common characteristic or set of characteristics. Typically, the group is followed for a specified period to determine the incidence of a disorder or complications of an established disorder (that is, prognosis), as in COHORT ANALYTIC STUDY (prospective study) (see also INCEPTION COHORT).

COHORT ANALYTIC STUDY. Prospective investigation of the factors that might cause a disorder in which a cohort of individuals who do not have evidence of an outcome of interest but who are exposed to the putative cause are compared with a concurrent cohort who are also free of the outcome but not exposed to the putative cause. Both cohorts are then followed to compare the incidence of the outcome of interest.

CONFOUNDER, CONFOUNDING VARIABLE. A factor that distorts the true relationship of the study variables of central interest by virtue of being related to the outcome of interest but extraneous to the study question and unequally distributed among the groups being compared. For example, age might confound a study of the effect of a toxin on longevity if individuals exposed to the toxin were older than those not exposed.

CONSECUTIVE SAMPLE. Sample in which the units are chosen on a strict "first come, first chosen" basis. All individuals who are eligible should be included as they are seen.

CONVENIENCE SAMPLE. Individuals or groups selected at the convenience of the investigator or primarily because they were available at a convenient time or place.

COST-BENEFIT ANALYSIS. A form of economic assessment,

usually from society's perspective, in which the costs of medical care are compared with the economic benefits of the care, with both costs and benefits expressed in units of currency. The benefits typically include reductions in future health care costs and increased earnings due to the improved health of those receiving the care.

COST-EFFECTIVENESS ANALYSIS. An economic evaluation in which alternative programs, services, or interventions are compared in terms of the cost per unit of clinical effect (for example, cost per life saved, cost per millimeter of mercury of blood pressure lowered, or cost per quality-adjusted life-year gained). The last form of measuring outcomes (and equivalents such as "healthy days of life gained") gives rise to what is also referred to as COST-UTILITY ANALYSIS.

COST-UTILITY ANALYSIS. See COST-EFFECTIVENESS ANALYSIS.

CRITERION STANDARD. Preferred term to "gold standard." A method having established or widely accepted accuracy for determining a diagnosis, providing a standard to which a new screening or diagnostic test can be compared. The method need not be a single or simple procedure but could include follow-up of patients to observe the evolution of their conditions or the consensus of an expert panel of clinicians, as is frequently used in the study of psychiatric conditions. CRITERION STANDARD can also be used in studies of the quality of care to indicate a level of performance, agreed to by experts or peers, to which the performance of individual practitioners or institutions can be compared.

CROSSOVER TRIAL. A method of comparing two or more treatments or interventions in which subjects or patients, on completion of the course of one treatment, are switched to another. Typically, allocation to the first treatment is by random process. Participants' performance in one period is used to judge their performance in others, usually reducing variability. See also BEFORE-AFTER TRIAL.

DATA-SET. Raw data gathered by investigators.

DOUBLE-BLIND or DOUBLE MASK. (1) Neither the subject nor the study staff (those responsible for patient treatment and data collection) are aware of the group or intervention to which the subject has been assigned. (2) Any condition in which two different groups of persons are purposely denied access to information in order to keep that information from influencing some measurement, observation, or process.

ECONOMIC EVALUATION. Comparative analysis of alternative courses of action in terms of both their costs and consequences.

END POINT. See OUTCOMES.

GOLD STANDARD. See CRITERION STANDARD.

INCEPTION COHORT. A designated group of persons, assembled at a common time early in the development of a specific clinical disorder (for example, at the time of first exposure to the putative cause or at the time of initial diagnosis), who are followed thereafter (see also COHORT).

LIKELIHOOD RATIO. For a screening or diagnostic test (including clinical signs or symptoms), expresses the relative odds that a given test result would be expected in a patient with (as opposed to one without) a disorder of interest.

MASKED. See BLIND.

MATCHING. The deliberate process of making a study group and a comparison group comparable with respect to factors that are extraneous to the purpose of the investigation but that might interfere with the interpretation of the study's findings (for example, in case-control studies, individual cases might be matched or paired with a specific control on the basis of comparable age, gender, clinical features, or a combination).

NONRANDOMIZED CONTROL TRIAL. Experiment in which assignment of patients to the intervention groups is at the convenience of the investigator or according to a preset plan that does not conform to the definition of RANDOM. See also RANDOMIZED CONTROL TRIAL.

OUTCOMES. All possible changes in health status that may occur in following subjects or that may stem from exposure to a causal factor or from preventive or therapeutic interventions. The narrower term END POINTS refers to health events that lead to completion or termination of follow-up of an individual in a trial or cohort study, for example, death or major morbidity, particularly related to the study question.

PRIMARY CARE. Medical care provided by the clinician of first contact for the patient. Typically, the primary care physician is a general practitioner, family practitioner, primary care internist, or primary care pediatrician. Primary care may also be administered by health professionals other than physicans, notably, specially trained nurses (nurse practitioners) and paramedics. Usually, a general practitioner, family practitoner, nurse practitioner, or paramedic provides only primary care services but a person with specialty qualifications may provide primary care, alone or in combination with referral services (see also REFERRED CARE). Thus, it is the nature of the contact (first compared with referred) that determines the care designation rather than the qualifications of the practitioner.

PRIMARY CARE CENTER, PRIMARY CARE SETTING. Medical care facility that offers first-contact health care only. Patients requiring specialized medical care are referred elsewhere. Some primary care centers provide a mixture of primary and referred care. Thus it is the nature of the service provided (first contact) rather than the setting per se that distinguishes primary from more advanced levels of care. See also PRIMARY CARE, REFERRED CARE, TERTIARY CARE CENTER.

PROSPECTIVE STUDY. See COHORT and COHORT ANALYTIC STUDY.

RANDOM. Governed by a formal chance process in which the occurrence of previous events is of no value in predicting future events. The probability of assignment of, for example, a given subject to a specified treatment group is fixed and constant (typically 0.50) but the subject's actual assignment cannot be known until it occurs.

RANDOM SAMPLE. A sample derived by selecting sampling units (for example, individual patients) such that each unit has an independent and fixed (generally equal) chance of selection. Whether a given unit is selected is determined by chance (for example, by a table of randomly ordered numbers).

RANDOMIZATION, RANDOM ALLOCATION. Allocation of individuals to groups by chance, usually done with the aid of a table of random numbers. Not to be confused with systematic allocation (for example, on even and odd days of the month) or allocation at the convenience or discretion of the investigator.

RANDOMIZED TRIAL (RANDOMIZED CONTROL[LED] TRIAL, RANDOMIZED CLINICAL TRIAL, RCT). Experiment in which individuals are randomly allocated to receive or not receive an experimental preventive, therapeutic, or diagnostic procedure and then followed to determine the effect of the intervention.

REFERRED CARE. Medical care provided to a patient when referred by one health professional to another with more specialized qualifications or interests. There are two levels of referred care: secondary and tertiary. Secondary care is usually provided by a broadly skilled specialist such as a general surgeon, general internist, or obstetrician. Tertiary care is provided on referral of a patient to a subspecialist, such as an orthopedic surgeon, neurologist, or neonatologist. See also TERTIARY CARE CENTER.

RETROSPECTIVE STUDY. See CASE-CONTROL STUDY.

SECONDARY CARE. See REFERRED CARE.

SENSITIVITY. The sensitivity of a diagnostic or screening test is the proportion of people who truly have a designated disorder who are so identified by the test. The test may consist of or include clinical observations.

SEQUENTIAL SAMPLE. See CONSECUTIVE SAMPLE.

SPECIFICITY. The specificity of a diagnostic or screening test is the proportion of people who are truly free of a designated disorder who are so identified by the test. The test may consist of or include clinical observations.

SURVEY. Observational or descriptive, nonexperimental study in which individuals are systematically examined for the absence or presence (or degree of presence) of characteristics of interest.

TERTIARY CARE. See REFERRED CARE.

TERTIARY CARE CENTER. A tertiary care center is a medical facility that receives referrals from both primary and secondary care levels and usually offers tests, treatments, and procedures that are not available elsewhere. Most tertiary care centers offer a mixture of primary, secondary, and tertiary care services so that it is the specific level of service rendered rather than the facility that determines the designation of care in a given study. See also REFERRED CARE.

Système International Conversion Factors for Frequently Used Laboratory Components

System*	Component	Present Reference Intervals (Examples)†	Present Unit	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits‡	Suggested Minimum Increment
			Hematology					
(B) Ercs	Erythrocyte sedimentation rate							
	Female	0-30	mm/hr	1	0-30	mm/h	XX	
	Male	0-20	mm/hr	1	0-20	mm/h	XX	
B	Hematocrit							
	Female	33-43	%	0.01	0.33-0.43	1	0.XX	
	Male	39-49	%	0.01	0.39-0.49	1	0.XX	
B	Hemoglobin							
	Mass concentration							
	Female	12.0-15.0	g/dL	10	120-150	g/L	XXX	
	Male	13.6-17.2	g/dL	10	136-172	g/L	XXX	
	Substance concentration (Hb[Fe])							
	Female	12.0-15.0	g/dL	0.6206	7.45-9.31	mmol/L	XX.XX	
	Male	13.6-17.2	g/dL	0.6206	8.44-10.67	mmol/L	XX.XX	
(B) Ercs	Mean corpuscular hemoglobin							
	Mass concentration	27-33	pg	1	27-33	pg	XX	
	Substance concentration (Hb[Fe])	27-33	pg	0.06206	1.68-2.05	fmol	X.XX	
(B) Ercs	Mean corpuscular hemoglobin concentration							
	Mass concentration	33-37	g/dL	10	330-370	g/L	XX0	
	Substance concentration (Hb[Fe])	33-37	g/dL	0.6206	20-23	mmol/L	XX	
(B) Ercs	Mean corpuscular volume							
	Erythrocyte volume	76-100	cu μm	1	76-100	fL	XXX	
B	Red blood cell count (erythrocytes)							
	Female	3.5-5.0	10^6/cu mm	1	3.5-5.0	10^{12}/L	X.X	
	Male	4.3-5.9	10^6/cu mm	1	4.3-5.1	10^{12}/L	X.X	
(Sf) Ercs	Red blood cell count	0	/cu mm	1	0	10^9/L	XX	
B	Reticulocyte count (adults)	10 000-75 000	/cu mm	0.001	10-75	10^9/L	XX	
	Number fraction	1-24	0/00 (No. per 1000 erythrocytes)	1	1-24	10^{-3}	XX	
		0.1-2.4	%	10	1-24	10^{-3}	XX	
B	Thrombocytes (platelets)	150-450	10^3/cu mm	1	150-450	10^9/L	XXX	
B Lkcs	White blood cell count	3200-9800	/cu mm	0.001	3.2-9.8	10^9/L	XX.X	
	Number fraction (differential)	. . .	%	0.01	. . .	1	0.XX	
(Sf) Lkcs	White blood cell count	0-5	/cu mm	1	0-5	10^9/L	XX	
			Clinical Chemistry					
S	Alanine aminotransferase (ALAT)	0-35 (35°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Albumin	4.0-6.0	g/dL	10.0	40-60	g/L	XX	1 g/L
S	α_1-Antitrypsin	150-350	mg/dL	0.01	1.5-3.5	g/L	X.X	0.1 g/L
P	Ammonia							
	As ammonia (NH_3)	10-80	μg/dL	0.5872	5-50	μmol/L	XXX	5 μmol/L
	As ammonium (NH_4^+)	10-85	μg/dL	0.5543	5-50	μmol/L	XXX	5 μmol/L
	As nitrogen (N)	10-65	μg/dL	0.7139	5-50	μmol/L	XXX	5 μmol/L
S	Amylase, enzymatic (Somogyi/Caraway)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
		50-150	Somogyi units/dL	1.850	100-300	U/L	XX0	10 U/L
S	Aspartate/aminotransferase (ASAT)	0-35 (37°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Bilirubin							
	Total	0.1-1.0	mg/dL	17.10	2-18	μmol/L	XX	2 μmol/L
	Conjugated	0-0.2	mg/dL	17.10	0-4	μmol/L	XX	2 μmol/L
S	Calcium							
	Male	8.8-10.3	mg/dL	0.2495	2.20-2.58	mmol/L	X.XX	0.02 mmol/L
	Female <50 yr	8.8-10.0	mg/dL	0.2495	2.20-2.50	mmol/L	X.XX	0.02 mmol/L
U	Calcium, normal diet	<250	mg/24 hr	0.02495	<6.2	mmol/d	X.X	0.1 mmol/d
B, P, S	Carbon dioxide content (bicarbonate + CO_2)	22-28	mEq/L	1.00	22-28	mmol/L	XX	1 mmol/L
S	Chloride	95-105	mEq/L	1.00	95-105	mmol/L	XXX	1 mmol/L

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.
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Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Unit	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits‡	Suggested Minimum Increment
P	Cholesterol							
	<29 yr	<200	mg/dL	0.02586	<5.20	mmol/L	X.XX	0.05 mmol/L
	30-39 yr	<225	mg/dL	0.02586	<5.85	mmol/L	X.XX	0.05 mmol/L
	40-49 yr	<245	mg/dL	0.02586	<6.35	mmol/L	X.XX	0.05 mmol/L
	>50 yr	<265	mg/dL	0.02586	<6.85	mmol/L	X.XX	0.05 mmol/L
P	Cholesterol esters, as a fraction of total cholesterol	60-75	%	0.01	0.60-0.75	1	X.XX	0.01
S	Complement, C3	70-160	mg/dL	0.01	0.7-1.6	g/L	X.X	0.1 g/L
S	Copper	70-140	µg/dL	0.1574	11.0-22.0	µmol/L	XX.X	0.2 µmol/L
U	Copper	<40	µg/24 hr	0.01574	<0.6	µmol/d	X.X	0.2 µmol/d
P	Corticotropin (ACTH)	20-100	pg/mL	0.2202	4-22	pmol/L	XX	1 pmol/L
S	Creatine							
	Male	0.17-0.50	mg/dL	76.25	10-40	µmol/L	X0	10 µmol/L
	Female	0.35-0.93	mg/dL	76.25	30-70	µmol/L	X0	10 µmol/L
U	Creatine							
	Male	0-40	mg/24 hr	7.625	0-300	µmol/d	XX0	10 µmol/L
	Female	0-80	mg/24 hr	7.625	0-600	µmol/d	XX0	10 µmol/d
S	Creatine kinase (CK)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
S	Creatine kinase isoenzymes, MB fraction	>5 in myocardial infarction	%	0.01	>0.05	1	X.XX	0.01
S	Creatinine	0.6-1.2	mg/dL	88.40	50-110	µmol/L	XX0	10 µmol/L
U	Creatinine	Variable	g/24 hr	8.840	Variable	mmol/d	XX.X	0.1 mmol/d
S, U	Creatinine clearance‖	75-125	mL/min	0.01667	1.24-2.08	mL/s	X.XX	0.02 mL/s
U	Cystine	10-100	mg/24 hr	4.161	40-420	µmol/d	XX0	10 µmol/d
P	Digoxin, therapeutic	0.5-2.2	ng/mL	1.281	0.6-2.8	nmol/L	X.X	0.1 nmol/L
		0.5-2.2	µg/L	1.281	0.6-2.8	nmol/L	X.X	0.1 nmol/L
P	Ethyl alcohol	>100	mg/dL	0.2171	>22	mmol/L	XX	1 mmol/L
P	Fibrinogen	200-400	mg/dL	0.01	2.0-4.0	g/L	X.X	0.1 g/L
P	Follicle-stimulating hormone (FSH)							
	Female	2.0-15.0	mIU/mL	1.00	2-15	IU/L	XX	1 IU/L
	Peak production	20-50	mIU/mL	1.00	20-50	IU/L	XX	1 IU/L
	Male	1.0-10.0	mIU/mL	1.00	1-10	IU/L	XX	1 IU/L
U	Follicle-stimulating hormone (FSH)							
	Follicular phase	2-15	IU/24 hr	1.00	2-15	IU/d	XXX	1 IU/d
	Midcycle	8-40	IU/24 hr	1.00	8-40	IU/d	XXX	1 IU/d
	Luteal phase	2-10	IU/24 hr	1.00	2-10	IU/d	XXX	1 IU/d
	Menopausal women	35-100	IU/24 hr	1.00	35-100	IU/d	XXX	1 IU/d
	Male	2-15	IU/24 hr	1.00	2-15	IU/d	XXX	1 IU/d
S	γ-Glutamyl transferase (GGT)	0-30 (30°C)	Units/L	1.00	0-30	U/L	XX	1 U/L
P	Glucose	70-110	mg/dL	0.05551	3.9-6.1	mmol/L	XX.X	0.1 mmol/L
B	Hemoglobin							
	Male	14.0-18.0	g/dL	10.0	140-180	g/L	XXX	1 g/L
	Female	11.5-15.5	g/dL	10.0	115-155	g/L	XXX	1 g/L
S	Immunoglobulins							
	IgG	500-1200	mg/dL	0.01	5.00-12.00	g/L	XX.XX	0.01 g/L
	IgA	50-350	mg/dL	0.01	0.50-3.50	g/L	XX.XX	0.01 g/L
	IgM	30-230	mg/dL	0.01	0.30-2.30	g/L	XX.XX	0.01 g/L
	IgD	<6	mg/dL	10	<60	mg/L	XX0	10 mg/L
	IgE							
	0-3 yr	0.5-1.0	U/mL	2.4	1-24	µg/L	XX	1 µg/L
	3-80 yr	5-100	U/mL	2.4	12-240	µg/L	XX	1 µg/L
S	Iron							
	Male	80-180	µg/dL	0.1791	14-32	µmol/L	XX	1 µmol/L
	Female	60-160	µg/dL	0.1791	11-29	µmol/L	XX	1 µmol/L
S	Iron-binding capacity	250-460	µg/dL	0.1791	45-82	µmol/L	XX	1 µmol/L
S	Lactate dehydrogenase (L→P)	50-150 (37°C)	Units/L	1.00	50-150	U/L	XXX	1 U/L
			Wroblewski units/mL	0.482	. . .	U/L	XXX	1 U/L
S	Lactate dehydrogenase isoenzymes							
	LD_1	15-40	%	0.01	0.15-0.40	1	X.XX	0.01
	LD_2	20-45	%	0.01	0.20-0.45	1	X.XX	0.01
	LD_3	15-30	%	0.01	0.15-0.30	1	X.XX	0.01
	LD_4 and LD_5	5-20	%	0.01	0.05-0.20	1	X.XX	0.01
	LD_1	10-60	Units/L	1	10-60	U/L	XX	1 U/L
	LD_2	20-70	Units/L	1	20-70	U/L	XX	1 U/L
	LD_3	10-45	Units/L	1	10-45	U/L	XX	1 U/L
	LD_4 and LD_5	5-30	Units/L	1	5-30	U/L	XX	1 U/L

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful; XX0, that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure.

Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Unit	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits‡	Suggested Minimum Increment
B	Lead, toxic	>60	μg/dL	0.04826	>2.90	μmol/L	X.XX	0.05 μmol/L
			mg/dL	48.26	. . .	μmol/L	X.XX	0.05 μmol/L
U	Lead, toxic	>80	μg/24 hr	0.004826	>0.40	μmol/d	X.XX	0.05 μmol/d
P	Lipids, total	400-850	mg/dL	0.01	4.0-8.5	g/L	X.X	0.1 g/L
P	Lipoproteins							
	Low-density (LDL), as cholesterol	50-190	mg/dL	0.02586	1.30-4.90	mmol/L	X.XX	0.05 mmol/L
	High-density (HDL), as cholesterol							
	Male	30-70	mg/dL	0.02586	0.80-1.80	mmol/L	X.XX	0.05 mmol/L
	Female	30-90	mg/dL	0.02586	0.80-2.35	mmol/L	X.XX	0.05 mmol/L
S	Magnesium	1.8-3.0	mg/dL	0.4114	0.80-1.20	mmol/L	X.XX	0.02 mmol/L
P	Phenytoin, therapeutic	10-20	mg/L	3.964	40-80	μmol/L	XX	5 μmol/L
P	Phosphatase, acid (prostatic)	0-3	King-Armstrong units/dL	1.77	0-5.5	U/L	X.X	0.05 U/L
			Bodansky units/dL	5.37	0-16.1	U/L	X.X	0.5 U/L
S	Phosphatase, alkaline	30-120	Units/L	1.00	30-120	U/L	XXX	1 U/L
			Bodansky units/dL	5.37	161-644	U/L	XXX	1 U/L
			King-Armstrong units/dL	7.1	213-852	U/L	XXX	1 U/L
S	Phosphate (as phosphorus)	2.5-5.0	mg/dL	0.3229	0.80-1.60	mmol/L	X.XX	0.05 mmol/L
S	Potassium	3.5-5.0	mEq/L	1.00	3.5-5.0	mmol/L	X.X	0.1 mmol/L
P	Progesterone							
	Follicular phase	<2	ng/mL	3.180	<6	nmol/L	XX	2 nmol/L
	Luteal phase	2-20	ng/mL	3.180	6-64	nmol/L	XX	2 nmol/L
S	Protein, total	6-8	g/dL	10.0	60-80	g/L	XX	1 g/L
Sf	Protein, total	<40	mg/dL	0.01	<0.40	g/L	X.XX	0.01 g/L
U	Protein, total	<150	mg/24 hr	0.001	<0.15	g/d	X.XX	0.01 g/d
S	Sodium	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
S	Sodium ion	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
U	Sodium ion	Diet dependent	mEq/24 hr	1.00	Diet dependent	mmol/d	XXX	1 mmol/d
U	Steroids							
	Hydroxycorticosteroids (as cortisol)							
	Female	2-8	mg/24 hr	2.759	5-25	μmol/d	XX	1 μmol/d
	Male	3-10	mg/24 hr	2.759	10-30	μmol/d	XX	1 μmol/d
U	17-Ketogenic steroids (as dehydroepiandrosterone)							
	Female	7-12	mg/24 hr	3.467	25-40	μmol/d	XX	1 μmol/d
	Male	9-17	mg/24 hr	3.467	30-60	μmol/d	XX	1 μmol/d
U	17-Ketosteroids (as dehydroepiandrosterone)							
	Female	6-17	mg/24 hr	3.467	20-60	μmol/d	XX	1 μmol/d
	Male	6-20	mg/24 hr	3.467	20-70	μmol/d	XX	1 μmol/d
U	Ketosteroid fractions							
	Androsterone							
	Female	0.5-3.0	mg/24 hr	3.443	1-10	μmol/d	XX	1 μmol/d
	Male	2.0-5.0	mg/24 hr	3.443	7-17	μmol/d	XX	1 μmol/d
	Dehydroepiandrosterone							
	Female	0.2-1.8	mg/24 hr	3.467	1-6	μmol/d	XX	1 μmol/d
	Male	0.2-2.0	mg/24 hr	3.467	1-7	μmol/d	XX	1 μmol/d
	Etiocholanolone							
	Female	0.8-4.0	mg/24 hr	3.443	2-14	μmol/d	XX	1 μmol/d
	Male	1.4-5.0	mg/24 hr	3.443	4-17	μmol/d	XX	1 μmol/d
				58.07	580-870	μmol/L	XX0	10 μmol/L
P	Testosterone							
	Female	<0.6	ng/mL	3.467	<2.0	nmol/L	XX.X	0.5 nmol/L
	Male	4.0-8.0	ng/mL	3.467	14.0-28.0	nmol/L	XX.X	0.5 nmol/L
S	Triiodothyronine (T_3)	75-220	ng/dL	0.01536	1.2-3.4	nmol/L	X.X	0.1 nmol/L
S	Urate (as uric acid)	2.0-7.0	mg/dL	59.48	120-420	μmol/L	XX0	10 μmol/L
U	Urate (as uric acid)	Diet dependent	g/24 hr	5.948	Diet dependent	mmol/d	XX	1 mmol/d
S	Urea nitrogen	8-18	mg/dL	0.3570	3.0-6.5	mmol/L of urea	X.X	0.5 mmol/L
U	Urea nitrogen	12-20 (diet dependent)	g/24 hr	35.70	430-700	mmol/d of urea	XX0	10 mmol/d
U	Urobilinogen	0-4.0	mg/24 hr	1.693	0.0-6.8	μmol/d	X.X	0.1 μmol/d
S	Zinc	75-120	μg/dL	0.1530	11.5-18.5	μmol/L	XX.X	0.1 μmol/L
U	Zinc	150-1200	μg/24 hr	0.0153	2.3-18.3	μmol/d	XX.X	0.1 μmol/d

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

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11. Designate a corresponding author and provide a complete address, telephone number, and fax number.

7. *Results.* The main results of the study should be given. Measurements that require explanation for the expected audience of the manuscript should be defined. Important measurements not included in the presentation of results should be declared. As relevant, it should be indicated whether observers were blinded to patient groupings, particularly for subjective measurements. Due to the current limitations of retrieval from electronic databases, results must be given in narrative or point form rather than tabular form if the abstract is to appear in computerized literature services such as MEDLINE. If possible, the results should be accompanied by confidence intervals (for example, 95%) and the exact level of statistical significance. For comparative studies, confidence intervals should relate to the differences between groups. For nonsignificant differences for the major study outcome measure(s), the clinically important difference sought should be stated and the confidence interval for the difference between the groups should be given. When risk changes or effect sizes are given, absolute values should be indicated so that the reader can determine the absolute as well as relative impact of the finding. Approaches such as "number needed to treat" to achieve a unit of benefit are encouraged when appropriate; reporting of relative differences alone is usually inappropriate. If appropriate, studies of screening and diagnostic tests should use the terms "sensitivity," "specificity," and "likelihood ratio." If predictive values or accuracy is given, prevalence or pretest likelihood should be given as well. No data should be reported in the abstract that do not appear in the rest of the manuscript.

8. *Conclusions.* Only those conclusions of the study that are directly supported by the evidence reported should be given, along with their clinical application (avoiding speculation and overgeneralization), and indicating whether additional study is required before the information should be used in usual clinical settings. Equal emphasis must be given to positive and negative findings of equal scientific merit.

To permit quick and selective scanning, the headings outlined above should be included in the abstract. For brevity, parts of the abstract can be written in phrases rather than complete sentences. (For example: "2. *Design.* Double-blind randomized trial," rather than "2. *Design.* The study was conducted as a double-blind, randomized trial.") This technique may make reading less smooth but facilitates selection scanning and allows more information to be conveyed per unit of space.

Review Manuscripts (Including Meta-analyses)

Authors submitting review manuscripts and reports of the results of meta-analyses should prepare an abstract of no more than 250 words under the following headings: Objective, Data Sources, Study Selection, Data Extraction, Data Synthesis, and Conclusions. The content following each heading should be as follows:

1. *Objective.* The abstract should begin with a precise statement of the primary objective of the review. The focus of this statement should be guided by whether the review emphasizes factors such as cause, diagnosis, prognosis, therapy, or prevention. It should include information about the specific population, intervention, exposure, and test or outcome that is being reviewed.

2. *Data Sources.* A succinct summary of data sources should be given, including any time restrictions. Potential sources include experts or research institutions active in the field, computerized databases and published indexes, registries, abstract booklets, conference proceedings, references identified from bibliographies of pertinent articles and books, and companies or manufacturers of tests or agents being reviewed. If a bibliographic database is used, the exact indexing terms used for article retrieval should be stated, including any constraints (for example, English language or human subjects).

3. *Study Selection.* The abstract should describe the criteria used to select studies for detailed review from among studies identified as relevant to the topic. Details of selection should include particular populations, interventions, outcomes, or methodologic designs. The method used to apply these criteria should be specified (for example, blind review, consensus, multiple reviewers). The proportion of initially identified studies that met selection criteria should be stated.

4. *Data Extraction.* Guidelines used for abstracting data and assessing data quality and validity (such as criteria for causal inference) should be described. The method by which the guidelines were applied should be stated (for example, independent extraction by multiple observers).

5. *Data Synthesis.* The main results of the review, whether qualitative or quantitative, should be stated. Methods used to obtain these results should be outlined. Meta-analyses should state the major outcomes that were pooled and include odds ratios or effect sizes and, if possible, sensitivity analyses. Numerical results should be accompanied by confidence intervals, if applicable, and exact levels of statistical significance. Evaluations of screening and diagnostic tests should address issues of sensitivity, specificity, likelihood ratios, receiver operating characteristic curves, and predictive values. Assessments of prognosis could include summarizations of survival characteristics and related variables. Major identified sources of variation between studies should be stated, including differences in treatment protocols, co-interventions, confounders, outcome measures, length of follow-up, and dropout rates.

6. *Conclusions.* The conclusions and their applications should be clearly stated, limiting generalization to the domain of the review. The need for new studies may be suggested.

Glossary of Methodologic Terms

BEFORE-AFTER TRIAL. Investigation of therapeutic alternatives in which individuals of one period and under one treatment are compared with individuals at a subsequent time, treated in a different fashion. If the disorder is not fatal and the "before" treatment is not curative, the same individuals may be studied in the before and after periods, strengthening the design through increased group comparability for the two periods. See also CROSSOVER TRIAL.

BLIND or BLINDED. Masked. Unaware. The term may be modified according to the purpose of the blinding. For example, clinicians or patients can be blind to the treatments that patients are receiving and observers can be blind to each other's assessments, making their observations uninfluenced by one another (see also DOUBLE-BLIND). To avoid confusion, the term MASKED is preferred in studies in which vision loss of patients is an outcome of interest.

CASE-CONTROL STUDY (CASE-REFERENT OR CASE-COMPARISON STUDY). Study generally used to test possible causes of a disease or disorder, in which individuals who have a designated disorder are compared with individuals who do not have the disorder with respect to previous current exposure to a putative causal factor. For example, persons with hepatic cancer (cases) are compared with persons without hepatic cancer (controls) and history of hepatitis B is determined for the two groups. A CASE-CONTROL STUDY is often referred to as a RETROSPECTIVE STUDY (even if patients are recruited prospectively) because the logic of the design leads from effect to cause.

CASE SERIES. A series of patients with a defined disorder. The term is usually used to describe a study reporting on a consecutive collection of patients treated in a similar manner, without a concurrent control group. For example, a surgeon might describe the characteristics of and outcomes for 100 consecutive patients with cerebral ischemia who received a revascularization procedure. See also CONSECUTIVE SAMPLE.

COHORT. A group of persons with a common characteristic or set of characteristics. Typically, the group is followed for a specified period to determine the incidence of a disorder or complications of an established disorder (that is, prognosis), as in COHORT ANALYTIC STUDY (prospective study) (see also INCEPTION COHORT).

COHORT ANALYTIC STUDY. Prospective investigation of the factors that might cause a disorder in which a cohort of individuals who do not have evidence of an outcome of interest but who are exposed to the putative cause are compared with a concurrent cohort who are also free of the outcome but not exposed to the putative cause. Both cohorts are then followed to compare the incidence of the outcome of interest.

CONFOUNDER, CONFOUNDING VARIABLE. A factor that distorts the true relationship of the study variables of central interest by virtue of being related to the outcome of interest but extraneous to the study question and unequally distributed among the groups being compared. For example, age might confound a study of the effect of a toxin on longevity if individuals exposed to the toxin were older than those not exposed.

CONSECUTIVE SAMPLE. Sample in which the units are chosen on a strict "first come, first chosen" basis. All individuals who are eligible should be included as they are seen.

Système International Conversion Factors for Frequently Used Laboratory Components

System*	Component	Present Reference Intervals (Examples)†	Present Unit	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Signifi-cant Digits‡	Suggested Minimum Increment
			Hematology					
(B) Ercs	Erythrocyte sedimentation rate							
	Female	0-30	mm/hr	1	0-30	mm/h	XX	
	Male	0-20	mm/hr	1	0-20	mm/h	XX	
B	Hematocrit							
	Female	33-43	%	0.01	0.33-0.43	1	0.XX	
	Male	39-49	%	0.01	0.39-0.49	1	0.XX	
B	Hemoglobin							
	Mass concentration							
	Female	12.0-15.0	g/dL	10	120-150	g/L	XXX	
	Male	13.6-17.2	g/dL	10	136-172	g/L	XXX	
	Substance concentration (Hb[Fe])							
	Female	12.0-15.0	g/dL	0.6206	7.45-9.31	mmol/L	XX.XX	
	Male	13.6-17.2	g/dL	0.6206	8.44-10.67	mmol/L	XX.XX	
(B) Ercs	Mean corpuscular hemoglobin							
	Mass concentration	27-33	pg	1	27-33	pg	XX	
	Substance concentration (Hb[Fe])	27-33	pg	0.06206	1.68-2.05	fmol	X.XX	
(B) Ercs	Mean corpuscular hemoglobin concentration							
	Mass concentration	33-37	g/dL	10	330-370	g/L	XX0	
	Substance concentration (Hb[Fe])	33-37	g/dL	0.6206	20-23	mmol/L	XX	
(B) Ercs	Mean corpuscular volume							
	Erythrocyte volume	76-100	cu μm	1	76-100	fL	XXX	
B	Red blood cell count (erythrocytes)							
	Female	3.5-5.0	10^6/cu mm	1	3.5-5.0	10^{12}/L	X.X	
	Male	4.3-5.9	10^6/cu mm	1	4.3-5.1	10^{12}/L	X.X	
(Sf) Ercs	Red blood cell count	0	/cu mm	1	0	10^6/L	XX	
B	Reticulocyte count (adults)	10 000-75 000	/cu mm	0.001	10-75	10^9/L	XX	
	Number fraction	1-24	0/00 (No. per 1000 erythrocytes)	1	1-24	10^{-3}	XX	
		0.1-2.4	%	10	1-24	10^{-3}	XX	
B	Thrombocytes (platelets)	150-450	10^3/cu mm	1	150-450	10^9/L	XXX	
B Lkcs	White blood cell count	3200-9800	/cu mm	0.001	3.2-9.8	10^9/L	XX.X	
	Number fraction (differential)	. . .	%	0.01	. . .	1	0.XX	
(Sf) Lkcs	White blood cell count	0-5	/cu mm	1	0-5	10^6/L	XX	
			Clinical Chemistry					
S	Alanine aminotransferase (ALAT)	0-35 (35°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Albumin	4.0-6.0	g/dL	10.0	40-60	g/L	XX	1 g/L
S	α$_1$-Antitrypsin	150-350	mg/dL	0.01	1.5-3.5	g/L	X.X	0.1 g/L
P	Ammonia							
	As ammonia (NH_3)	10-80	μg/dL	0.5872	5-50	μmol/L	XXX	5 μmol/L
	As ammonium (NH_4^+)	10-85	μg/dL	0.5543	5-50	μmol/L	XXX	5 μmol/L
	As nitrogen (N)	10-65	μg/dL	0.7139	5-50	μmol/L	XXX	5 μmol/L
S	Amylase, enzymatic (Somogyi/Caraway)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
		50-150	Somogyi units/dL	1.850	100-300	U/L	XX0	10 U/L
S	Aspartate/aminotransferase (ASAT)	0-35 (37°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Bilirubin							
	Total	0.1-1.0	mg/dL	17.10	2-18	μmol/L	XX	2 μmol/L
	Conjugated	0-0.2	mg/dL	17.10	0-4	μmol/L	XX	2 μmol/L
S	Calcium							
	Male	8.8-10.3	mg/dL	0.2495	2.20-2.58	mmol/L	X.XX	0.02 mmol/L
	Female <50 yr	8.8-10.0	mg/dL	0.2495	2.20-2.50	mmol/L	X.XX	0.02 mmol/L
U	Calcium, normal diet	<250	mg/24 hr	0.02495	<6.2	mmol/d	X.X	0.1 mmol/d
B, P, S	Carbon dioxide content (bicarbonate – CO_2)	22-28	mEq/L	1.00	22-28	mmol/L	XX	1 mmol/L
S	Chloride	95-105	mEq/L	1.00	95-105	mmol/L	XXX	1 mmol/L

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful. XX0 that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure

Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Unit	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits‡	Suggested Minimum Increment
B	Lead, toxic	>60	μg/dL	0.04826	>2.90	μmol/L	X.XX	0.05 μmol/L
			mg/dL	48.26	. . .	μmol/L	X.XX	0.05 μmol/L
U	Lead, toxic	>80	μg/24 hr	0.004826	>0.40	μmol/d	X.XX	0.05 μmol/d
P	Lipids, total	400-850	mg/dL	0.01	4.0-8.5	g/L	X.X	0.1 g/L
P	Lipoproteins							
	Low-density (LDL), as cholesterol	50-190	mg/dL	0.02586	1.30-4.90	mmol/L	X.XX	0.05 mmol/L
	High-density (HDL), as cholesterol							
	Male	30-70	mg/dL	0.02586	0.80-1.80	mmol/L	X.XX	0.05 mmol/L
	Female	30-90	mg/dL	0.02586	0.80-2.35	mmol/L	X.XX	0.05 mmol/L
S	Magnesium	1.8-3.0	mg/dL	0.4114	0.80-1.20	mmol/L	X.XX	0.02 mmol/L
P	Phenytoin, therapeutic	10-20	mg/L	3.964	40-80	μmol/L	XX	5 μmol/L
P	Phosphatase, acid (prostatic)	0-3	King-Armstrong units/dL	1.77	0-5.5	U/L	X.X	0.05 U/L
			Bodansky units/dL	5.37	0-16.1	U/L	X.X	0.5 U/L
S	Phosphatase, alkaline	30-120	Units/L	1.00	30-120	U/L	XXX	1 U/L
			Bodansky units/dL	5.37	161-644	U/L	XXX	1 U/L
			King-Armstrong units/dL	7.1	213-852	U/L	XXX	1 U/L
S	Phosphate (as phosphorus)	2.5-5.0	mg/dL	0.3229	0.80-1.60	mmol/L	X.XX	0.05 mmol/L
S	Potassium	3.5-5.0	mEq/L	1.00	3.5-5.0	mmol/L	X.X	0.1 mmol/L
P	Progesterone							
	Follicular phase	<2	ng/mL	3.180	<6	nmol/L	XX	2 nmol/L
	Luteal phase	2-20	ng/mL	3.180	6-64	nmol/L	XX	2 nmol/L
S	Protein, total	6-8	g/dL	10.0	60-80	g/L	XX	1 g/L
Sf	Protein, total	<40	mg/dL	0.01	<0.40	g/L	X.XX	0.01 g/L
U	Protein, total	<150	mg/24 hr	0.001	<0.15	g/d	X.XX	0.01 g/d
S	Sodium	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
S	Sodium ion	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
U	Sodium ion	Diet dependent	mEq/24 hr	1.00	Diet dependent	mmol/d	XXX	1 mmol/d
	Steroids							
U	Hydroxycorticosteroids (as cortisol)							
	Female	2-8	mg/24 hr	2.759	5-25	μmol/d	XX	1 μmol/d
	Male	3-10	mg/24 hr	2.759	10-30	μmol/d	XX	1 μmol/d
U	17-Ketogenic steroids (as dehydroepiandrosterone)							
	Female	7-12	mg/24 hr	3.467	25-40	μmol/d	XX	1 μmol/d
	Male	9-17	mg/24 hr	3.467	30-60	μmol/d	XX	1 μmol/d
U	17-Ketosteroids (as dehydroepiandrosterone)							
	Female	6-17	mg/24 hr	3.467	20-60	μmol/d	XX	1 μmol/d
	Male	6-20	mg/24 hr	3.467	20-70	μmol/d	XX	1 μmol/d
U	Ketosteroid fractions							
	Androsterone							
	Female	0.5-3.0	mg/24 hr	3.443	1-10	μmol/d	XX	1 μmol/d
	Male	2.0-5.0	mg/24 hr	3.443	7-17	μmol/d	XX	1 μmol/d
	Dehydroepiandrosterone							
	Female	0.2-1.8	mg/24 hr	3.467	1-6	μmol/d	XX	1 μmol/d
	Male	0.2-2.0	mg/24 hr	3.467	1-7	μmol/d	XX	1 μmol/d
	Etiocholanolone							
	Female	0.8-4.0	mg/24 hr	3.443	2-14	μmol/d	XX	1 μmol/d
	Male	1.4-5.0	mg/24 hr	3.443	4-17	μmol/d	XX	1 μmol/d
				58.07	580-870	μmol/L	XX0	10 μmol/L
P	Testosterone							
	Female	<0.6	ng/mL	3.467	<2.0	nmol/L	XX.X	0.5 nmol/L
	Male	4.0-8.0	ng/mL	3.467	14.0-28.0	nmol/L	XX.X	0.5 nmol/L
S	Triiodothyronine (T_3)	75-220	ng/dL	0.01536	1.2-3.4	nmol/L	X.X	0.1 nmol/L
S	Urate (as uric acid)	2.0-7.0	mg/dL	59.48	120-420	μmol/L	XX0	10 μmol/L
U	Urate (as uric acid)	Diet dependent	g/24 hr	5.948	Diet dependent	mmol/d	XX	1 mmol/d
S	Urea nitrogen	8-18	mg/dL	0.3570	3.0-6.5	mmol/L of urea	X.X	0.5 mmol/L
U	Urea nitrogen	12-20 (diet dependent)	g/24 hr	35.70	430-700	mmol/d of urea	XX0	10 mmol/d
U	Urobilinogen	0-4.0	mg/24 hr	1.693	0.0-6.8	μmol/d	X.X	0.1 μmol/d
S	Zinc	75-120	μg/dL	0.1530	11.5-18.5	μmol/L	XX.X	0.1 μmol/L
U	Zinc	150-1200	μg/24 hr	0.0153	2.3-18.3	μmol/d	XX.X	0.1 μmol/d

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful; XX0, that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure.

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Instructions for Authors

MANUSCRIPT CRITERIA AND INFORMATION

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Send manuscripts to the Editor, George D. Lundberg, MD, *JAMA*, 515 N State St, Chicago, IL 60610. Manuscripts are considered with the understanding that they have not been published previously in print or electronic format and are not under consideration by another publication or electronic medium. A complete report following presentation or publication of preliminary findings elsewhere (eg, in an abstract) can be considered. Include copies of possibly duplicative material that has been previously published or is currently being considered elsewhere.

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Designate one author as correspondent and provide a complete address, telephone number, and fax number. Manuscripts should have no more than six authors; a greater number requires justification. Authors may add a publishable footnote explaining order of authorship.[1,2]

Group Authorship.—If authorship is attributed to a group (either solely or in addition to one or more individual authors), all members of the group must meet the full criteria and requirements for authorship described in the following paragraphs. One or more authors may take responsibility "for" a group, in which case the other group members are not authors, but may be listed in an acknowledgment.[2]

Authorship Requirements.—In the cover letter include (1) statement on authorship responsibility and (2) statement on financial disclosure and (3) one of the two following statements on copyright or federal employment. Each of these three statements must be read and signed by *all* authors.[3]

Authorship Responsibility.—"I certify that I have participated sufficiently in the conception and design of this work and the analysis of the data (when applicable), as well as the writing of the manuscript, to take public responsibility for it. I believe the manuscript represents valid work. I have reviewed the final version of the submitted manuscript and approve it for publication. Neither this manuscript nor one with substantially similar content under my authorship has been published or is being considered for publication elsewhere, except as described in an attachment. If requested, I shall produce the data upon which the manuscript is based for examination by the editors or their assignees."

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Manuscript Preparation

- Manuscripts should be prepared in accordance with the *American Medical Association Manual of Style*[4] and/or the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals."[5]
- Submit the original manuscript and three photocopies, typed on one side of standard-sized white bond paper. Use 1-inch margins.
- Double-space throughout, including title page, abstract, text, acknowledgments, references, legends for illustrations, and tables. Start each of these sections on a new page, numbered consecutively in the upper right-hand corner, beginning with the title page.
- Provide copy that can be scanned by an optical character reader: no smudges or pencil or pen marks. Use only standard 10- or 12-pitch type and spacing. Do not use 10-pitch type with 12-pitch spacing. If prepared on a word processor, do not use proportional spacing; use unjustified (ragged) right margins and letter-quality printing.
- On the title page type the full names, highest academic degrees, and affiliations of all authors. If an author's affiliation has changed since the work was done, list the new affiliation as well.
- Use Système International (SI) measurements only, except when "Dual report" is indicated in the SI unit conversion table in these instructions.[6]
- Use generic names of drugs, unless the specific trade name of a drug used is directly relevant to the discussion.
- Do not use abbreviations in the title or abstract and limit their use in the text.

Abstract.—Include a *structured abstract* of no more than 250 words for reports of original data from clinical investigations and reviews (including meta-analyses). (See Instructions for Preparing Structured Abstracts on following page.) For other major manuscripts, include a conventional, unstructured abstract of no more than 150 words. Abstracts are not required for Editorials, Commentaries, and special features of THE JOURNAL.

Informed Consent.—For experimental investigations of human or

Manuscript Checklist

1. Include original manuscript and three photocopies.
2. Include in the cover letter statements—signed by each author—on (*a*) authorship responsibility, (*b*) financial disclosure, and (*c*) copyright transfer or federal employment.
3. Include statement signed by corresponding author that written permission has been obtained from all persons named in the Acknowledgment.
4. Leave right margins unjustified (ragged).
5. Check all references for accuracy and completeness. Put references in proper format in numerical order, making sure each is cited in the text.
6. Send four sets of all illustrations.
7. Provide and label an abstract.
8. Include complete consent forms for identifiable patient descriptions and photographs.
9. Include research or project support and funding in an acknowledgment.
10. Include written permission from publishers and authors to reproduce or adapt previously published illustrations and tables.
11. Designate a corresponding author and provide a complete address, telephone number, and fax number.

animal subjects, state in the "Methods" section of the manuscript that an appropriate institutional review board approved the project. For those investigators who do not have formal ethics review committees (institutional or regional), the principles outlined in the Declaration of Helsinki should be followed.[7] For investigations of human subjects, state in the "Methods" section the manner in which informed consent was obtained from the subjects.

Case Descriptions and Photographs.—Include a signed statement of consent to publish all case descriptions and photographs from all patients (parents or legal guardians for minors) who can be identified in such written descriptions and photographs.

References.—Number references in the order they are mentioned in the text; do not alphabetize. In text, tables, and legends, identify references with superscript arabic numerals. When listing references, follow AMA style, abbreviating names of journals according to *Index Medicus*. Note: List all authors and/or editors up to six; if more than six, list the first three and "et al."

Examples of Reference Style:

1. Lomas J, Enkin M, Anderson GM, Hannah WJ, Vayda E, Singer J. Opinion leaders vs audit and feedback to implement practice guidelines: delivery after previous cesarean section. *JAMA*. 1991;265:2202-2207.
2. Marcus R, Couston AM. Water-soluble vitamins: the vitamin B complex and ascorbic acid. In: Gilman AG, Rall TW, Nies AS, Taylor P, eds. *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 8th ed. New York, NY: Pergamon Press; 1990:1530-1552.

Authors are responsible for the accuracy and completeness of their references and for correct text citation.

Tables.—Double-space on separate sheets of standard-sized white bond paper. Title all tables and number them in order of their citation in the text. If a table must be continued, repeat the title on a second sheet, followed by "(cont)."

Illustrations.—Submit four sets of all illustrations: (1) 5 × 7-inch glossy photographs for all graphs and black-and-white photographs; (2) high-contrast prints for roentgenograms; (3) color slides (and corresponding color prints) for color illustrations. Computer-generated graphics produced by high-quality laser printers (300 dots per inch) also are acceptable. Number illustrations according to their order in the text. Affix a label with figure number, name of first author, short form of the manuscript title, and an arrow indicating "top" to the back of the print. Never mark on the print or the transparency itself. Original illustrations, photographs, and slides of rejected manuscripts will be returned to authors.

- Double-space legends (maximum length, 40 words) on separate pages. Indicate magnification and stain used for photomicrographs.
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References

1. International Committee of Medical Journal Editors. Statements from the International Committee of Medical Journal Editors. *JAMA*. 1991;265:2697-2698.
2. Glass RM. New information for authors and readers: group authorship, acknowledgments, and rejected manuscripts. *JAMA*. 1992;268:99. Correction. 1993;269:48.
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Instructions for Preparing Structured Abstracts

All manuscripts that are (1) reports of original data or (2) reviews, including meta-analyses, should be submitted with structured abstracts as described below.

Reports of Original Data

Authors submitting manuscripts reporting original data should prepare an abstract of no more than 250 words under the following headings: Objective, Design, Setting, Patients (or Other Participants), Interventions (if any), Main Outcome Measure(s), Results, and Conclusions. The content following each heading should be as follows:

1. *Objective.* The abstract should begin with a clear statement of the precise objective or question addressed in the report. If more than one objective is addressed, the main objective should be indicated and only key secondary objectives stated. If an a priori hypothesis was tested, it should be stated.

2. *Design.* The basic design of the study should be described. The duration of follow-up, if any, should be stated. As many of the following terms as apply should be used.

A. Intervention studies: randomized control trial (see Glossary for the definition of this and other technical terms); nonrandomized control trial; double-blind; placebo control; crossover trial; before-after trial.

B. For studies of screening and diagnostic tests: criterion standard (that is, a widely accepted standard with which a new or alternative test is being compared; this term is preferred to "gold standard"); blinded or masked comparison.

C. For studies of prognosis: inception cohort (subjects assembled at a similar and early time in the course of the disorder and followed thereafter); cohort (subjects followed forward in time, but not necessarily from a common starting point); validation cohort or validation sample if the study involves the modeling of clinical predictions.

D. For studies of causation: randomized control trial; cohort; case-control; survey (preferred to "cross-sectional study").

E. For descriptions of the clinical features of medical disorders: survey; case series.

F. For studies that include a formal economic evaluation: cost-effectiveness analysis; cost-utility analysis; cost-benefit analysis. For new analyses of existing data sets, the data set should be named and the basic study design disclosed.

3. *Setting.* To assist readers to determine the applicability of the report to their own clinical circumstances, the study setting(s) should be described. Of particular importance is whether the setting is the general community, a primary care or referral center, private or institutional practice, ambulatory or hospitalized care.

4. *Patients or Other Participants.* The clinical disorders, important eligibility criteria, and key sociodemographic features of patients should be stated. The numbers of participants and how they were selected should be provided (see below), including the number of otherwise eligible subjects who were approached but refused. If matching is used for comparison groups, characteristics that are matched should be specified. In follow-up studies, the proportion of participants who completed the study must be indicated. In intervention studies, the number of patients withdrawn for adverse effects should be given.

For selection procedures, these terms should be used, if appropriate: random sample (where "random" refers to a formal, randomized selection in which all eligible subjects have a fixed and usually equal chance of selection); population-based sample; referred sample; consecutive sample; volunteer sample; convenience sample. These terms assist the reader to determine an important element of the generalizability of the study. They also supplement (rather than duplicate) the terms used by professional indexers when articles are entered into computerized databases.

5. *Intervention(s).* The essential features of any interventions should be described, including their method and duration of administration. The intervention should be named by its most common clinical name (for example, the generic term "chlorthalidone"). Common synonyms should be given as well to facilitate electronic text-word searching. This would include the brand name of a drug if a specific product was studied.

6. *Main Outcome Measure(s).* The primary study outcome measurement(s) should be indicated as planned before data collection began. If the paper does not emphasize the main planned outcomes

Adapted from Haynes RB, Mulrow CD, Huth EJ, Altman DG, Gardner MJ. More informative abstracts revisited. *Ann Intern Med*. 1990;113:69-76.

of a study, this fact should be stated and the reason indicated. If the hypothesis being reported was formulated during or after data collection, this information should be clearly stated.

7. *Results.* The main results of the study should be given. Measurements that require explanation for the expected audience of the manuscript should be defined. Important measurements not included in the presentation of results should be declared. As relevant, it should be indicated whether observers were blinded to patient groupings, particularly for subjective measurements. Due to the current limitations of retrieval from electronic databases, results must be given in narrative or point form rather than tabular form if the abstract is to appear in computerized literature services such as MEDLINE. If possible, the results should be accompanied by confidence intervals (for example, 95%) and the exact level of statistical significance. For comparative studies, confidence intervals should relate to the differences between groups. For nonsignificant differences for the major study outcome measure(s), the clinically important difference sought should be stated and the confidence interval for the difference between the groups should be given. When risk changes or effect sizes are given, absolute values should be indicated so that the reader can determine the absolute as well as relative impact of the finding. Approaches such as "number needed to treat" to achieve a unit of benefit are encouraged when appropriate; reporting of relative differences alone is usually inappropriate. If appropriate, studies of screening and diagnostic tests should use the terms "sensitivity," "specificity," and "likelihood ratio." If predictive values or accuracy is given, prevalence or pretest likelihood should be given as well. No data should be reported in the abstract that do not appear in the rest of the manuscript.

8. *Conclusions.* Only those conclusions of the study that are directly supported by the evidence reported should be given, along with their clinical application (avoiding speculation and overgeneralization), and indicating whether additional study is required before the information should be used in usual clinical settings. Equal emphasis must be given to positive and negative findings of equal scientific merit.

To permit quick and selective scanning, the headings outlined above should be included in the abstract. For brevity, parts of the abstract can be written in phrases rather than complete sentences. (For example: "2. *Design.* Double-blind randomized trial," rather than "2. *Design.* The study was conducted as a double-blind, randomized trial.") This technique may make reading less smooth but facilitates selection scanning and allows more information to be conveyed per unit of space.

Review Manuscripts (Including Meta-analyses)

Authors submitting review manuscripts and reports of the results of meta-analyses should prepare an abstract of no more than 250 words under the following headings: Objective, Data Sources, Study Selection, Data Extraction, Data Synthesis, and Conclusions. The content following each heading should be as follows:

1. *Objective.* The abstract should begin with a precise statement of the primary objective of the review. The focus of this statement should be guided by whether the review emphasizes factors such as cause, diagnosis, prognosis, therapy, or prevention. It should include information about the specific population, intervention, exposure, and test or outcome that is being reviewed.

2. *Data Sources.* A succinct summary of data sources should be given, including any time restrictions. Potential sources include experts or research institutions active in the field, computerized databases and published indexes, registries, abstract booklets, conference proceedings, references identified from bibliographies of pertinent articles and books, and companies or manufacturers of tests or agents being reviewed. If a bibliographic database is used, the exact indexing terms used for article retrieval should be stated, including any constraints (for example, English language or human subjects).

3. *Study Selection.* The abstract should describe the criteria used to select studies for detailed review from among studies identified as relevant to the topic. Details of selection should include particular populations, interventions, outcomes, or methodologic designs. The method used to apply these criteria should be specified (for example, blind review, consensus, multiple reviewers). The proportion of initially identified studies that met selection criteria should be stated.

4. *Data Extraction.* Guidelines used for abstracting data and assessing data quality and validity (such as criteria for causal inference) should be described. The method by which the guidelines were applied should be stated (for example, independent extraction by multiple observers).

5. *Data Synthesis.* The main results of the review, whether qualitative or quantitative, should be stated. Methods used to obtain these results should be outlined. Meta-analyses should state the major outcomes that were pooled and include odds ratios or effect sizes and, if possible, sensitivity analyses. Numerical results should be accompanied by confidence intervals, if applicable, and exact levels of statistical significance. Evaluations of screening and diagnostic tests should address issues of sensitivity, specificity, likelihood ratios, receiver operating characteristic curves, and predictive values. Assessments of prognosis could include summarizations of survival characteristics and related variables. Major identified sources of variation between studies should be stated, including differences in treatment protocols, co-interventions, confounders, outcome measures, length of follow-up, and dropout rates.

6. *Conclusions.* The conclusions and their applications should be clearly stated, limiting generalization to the domain of the review. The need for new studies may be suggested.

Glossary of Methodologic Terms

BEFORE-AFTER TRIAL. Investigation of therapeutic alternatives in which individuals of one period and under one treatment are compared with individuals at a subsequent time, treated in a different fashion. If the disorder is not fatal and the "before" treatment is not curative, the same individuals may be studied in the before and after periods, strengthening the design through increased group comparability for the two periods. See also CROSSOVER TRIAL.

BLIND or BLINDED. Masked. Unaware. The term may be modified according to the purpose of the blinding. For example, clinicians or patients can be blind to the treatments that patients are receiving and observers can be blind to each other's assessments, making their observations uninfluenced by one another (see also DOUBLE-BLIND). To avoid confusion, the term MASKED is preferred in studies in which vision loss of patients is an outcome of interest.

CASE-CONTROL STUDY (CASE-REFERENT OR CASE-COMPARISON STUDY). Study generally used to test possible causes of a disease or disorder, in which individuals who have a designated disorder are compared with individuals who do not have the disorder with respect to previous current exposure to a putative causal factor. For example, persons with hepatic cancer (cases) are compared with persons without hepatic cancer (controls) and history of hepatitis B is determined for the two groups. A CASE-CONTROL STUDY is often referred to as a RETROSPECTIVE STUDY (even if patients are recruited prospectively) because the logic of the design leads from effect to cause.

CASE SERIES. A series of patients with a defined disorder. The term is usually used to describe a study reporting on a consecutive collection of patients treated in a similar manner, without a concurrent control group. For example, a surgeon might describe the characteristics of and outcomes for 100 consecutive patients with cerebral ischemia who received a revascularization procedure. See also CONSECUTIVE SAMPLE.

COHORT. A group of persons with a common characteristic or set of characteristics. Typically, the group is followed for a specified period to determine the incidence of a disorder or complications of an established disorder (that is, prognosis), as in COHORT ANALYTIC STUDY (prospective study) (see also INCEPTION COHORT).

COHORT ANALYTIC STUDY. Prospective investigation of the factors that might cause a disorder in which a cohort of individuals who do not have evidence of an outcome of interest but who are exposed to the putative cause are compared with a concurrent cohort who are also free of the outcome but not exposed to the putative cause. Both cohorts are then followed to compare the incidence of the outcome of interest.

CONFOUNDER, CONFOUNDING VARIABLE. A factor that distorts the true relationship of the study variables of central interest by virtue of being related to the outcome of interest but extraneous to the study question and unequally distributed among the groups being compared. For example, age might confound a study of the effect of a toxin on longevity if individuals exposed to the toxin were older than those not exposed.

CONSECUTIVE SAMPLE. Sample in which the units are chosen on a strict "first come, first chosen" basis. All individuals who are

eligible should be included as they are seen.

CONVENIENCE SAMPLE. Individuals or groups selected at the convenience of the investigator or primarily because they were available at a convenient time or place.

COST-BENEFIT ANALYSIS. A form of economic assessment, usually from society's perspective, in which the costs of medical care are compared with the economic benefits of the care, with both costs and benefits expressed in units of currency. The benefits typically include reductions in future health care costs and increased earnings due to the improved health of those receiving the care.

COST-EFFECTIVENESS ANALYSIS. An economic evaluation in which alternative programs, services, or interventions are compared in terms of the cost per unit of clinical effect (for example, cost per life saved, cost per millimeter of mercury of blood pressure lowered, or cost per quality-adjusted life-year gained). The last form of measuring outcomes (and equivalents such as "healthy days of life gained") gives rise to what is also referred to as COST-UTILITY ANALYSIS.

COST-UTILITY ANALYSIS. See COST-EFFECTIVENESS ANALYSIS.

CRITERION STANDARD. Preferred term to "gold standard." A method having established or widely accepted accuracy for determining a diagnosis, providing a standard to which a new screening or diagnostic test can be compared. The method need not be a single or simple procedure but could include follow-up of patients to observe the evolution of their conditions or the consensus of an expert panel of clinicians, as is frequently used in the study of psychiatric conditions. CRITERION STANDARD can also be used in studies of the quality of care to indicate a level of performance, agreed to by experts or peers, to which the performance of individual practitioners or institutions can be compared.

CROSSOVER TRIAL. A method of comparing two or more treatments or interventions in which subjects or patients, on completion of the course of one treatment, are switched to another. Typically, allocation to the first treatment is by random process. Participants' performance in one period is used to judge their performance in others, usually reducing variability. See also BEFORE-AFTER TRIAL.

DATA-SET. Raw data gathered by investigators.

DOUBLE-BLIND or DOUBLE MASK. (1) Neither the subject nor the study staff (those responsible for patient treatment and data collection) are aware of the group or intervention to which the subject has been assigned. (2) Any condition in which two different groups of persons are purposely denied access to information in order to keep that information from influencing some measurement, observation, or process.

ECONOMIC EVALUATION. Comparative analysis of alternative courses of action in terms of both their costs and consequences.

END POINT. See OUTCOMES.

GOLD STANDARD. See CRITERION STANDARD.

INCEPTION COHORT. A designated group of persons, assembled at a common time early in the development of a specific clinical disorder (for example, at the time of first exposure to the putative cause or at the time of initial diagnosis), who are followed thereafter (see also COHORT).

LIKELIHOOD RATIO. For a screening or diagnostic test (including clinical signs or symptoms), expresses the relative odds that a given test result would be expected in a patient with (as opposed to one without) a disorder of interest.

MASKED. See BLIND.

MATCHING. The deliberate process of making a study group and a comparison group comparable with respect to factors that are extraneous to the purpose of the investigation but that might interfere with the interpretation of the study's findings (for example, in case-control studies, individual cases might be matched or paired with a specific control on the basis of comparable age, gender, clinical features, or a combination).

NONRANDOMIZED CONTROL TRIAL. Experiment in which assignment of patients to the intervention groups is at the convenience of the investigator or according to a preset plan that does not conform to the definition of RANDOM. See also RANDOMIZED CONTROL TRIAL.

OUTCOMES. All possible changes in health status that may occur in following subjects or that may stem from exposure to a causal factor or from preventive or therapeutic interventions. The narrower term END POINTS refers to health events that lead to completion or termination of follow-up of an individual in a trial or cohort study, for example, death or major morbidity, particularly related to the study question.

PRIMARY CARE. Medical care provided by the clinician of first contact for the patient. Typically, the primary care physician is a general practitioner, family practitioner, primary care internist, or primary care pediatrician. Primary care may also be administered by health professionals other than physicans, notably, specially trained nurses (nurse practitioners) and paramedics. Usually, a general practitioner, family practitioner, nurse practitioner, or paramedic provides only primary care services but a person with specialty qualifications may provide primary care, alone or in combination with referral services (see also REFERRED CARE). Thus, it is the nature of the contact (first compared with referred) that determines the care designation rather than the qualifications of the practitioner.

PRIMARY CARE CENTER, PRIMARY CARE SETTING. Medical care facility that offers first-contact health care only. Patients requiring specialized medical care are referred elsewhere. Some primary care centers provide a mixture of primary and referred care. Thus it is the nature of the service provided (first contact) rather than the setting per se that distinguishes primary from more advanced levels of care. See also PRIMARY CARE, REFERRED CARE, TERTIARY CARE CENTER.

PROSPECTIVE STUDY. See COHORT and COHORT ANALYTIC STUDY.

RANDOM. Governed by a formal chance process in which the occurrence of previous events is of no value in predicting future events. The probability of assignment of, for example, a given subject to a specified treatment group is fixed and constant (typically 0.50) but the subject's actual assignment cannot be known until it occurs.

RANDOM SAMPLE. A sample derived by selecting sampling units (for example, individual patients) such that each unit has an independent and fixed (generally equal) chance of selection. Whether a given unit is selected is determined by chance (for example, by a table of randomly ordered numbers).

RANDOMIZATION, RANDOM ALLOCATION. Allocation of individuals to groups by chance, usually done with the aid of a table of random numbers. Not to be confused with systematic allocation (for example, on even and odd days of the month) or allocation at the convenience or discretion of the investigator.

RANDOMIZED TRIAL (RANDOMIZED CONTROL[LED] TRIAL, RANDOMIZED CLINICAL TRIAL, RCT). Experiment in which individuals are randomly allocated to receive or not receive an experimental preventive, therapeutic, or diagnostic procedure and then followed to determine the effect of the intervention.

REFERRED CARE. Medical care provided to a patient when referred by one health professional to another with more specialized qualifications or interests. There are two levels of referred care: secondary and tertiary. Secondary care is usually provided by a broadly skilled specialist such as a general surgeon, general internist, or obstetrician. Tertiary care is provided on referral of a patient to a subspecialist, such as an orthopedic surgeon, neurologist, or neonatologist. See also TERTIARY CARE CENTER.

RETROSPECTIVE STUDY. See CASE-CONTROL STUDY.

SECONDARY CARE. See REFERRED CARE.

SENSITIVITY. The sensitivity of a diagnostic or screening test is the proportion of people who truly have a designated disorder who are so identified by the test. The test may consist of or include clinical observations.

SEQUENTIAL SAMPLE. See CONSECUTIVE SAMPLE.

SPECIFICITY. The specificity of a diagnostic or screening test is the proportion of people who are truly free of a designated disorder who are so identified by the test. The test may consist of or include clinical observations.

SURVEY. Observational or descriptive, nonexperimental study in which individuals are systematically examined for the absence or presence (or degree of presence) of characteristics of interest.

TERTIARY CARE. See REFERRED CARE.

TERTIARY CARE CENTER. A tertiary care center is a medical facility that receives referrals from both primary and secondary care levels and usually offers tests, treatments, and procedures that are not available elsewhere. Most tertiary care centers offer a mixture of primary, secondary, and tertiary care services so that it is the specific level of service rendered rather than the facility that determines the designation of care in a given study. See also REFERRED CARE.

SI Units

Système International Conversion Factors for Frequently Used Laboratory Components

System*	Component	Present Reference Intervals (Examples)†	Present Conventional Unit‡	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits§	Suggested Minimum Increment
			Hematology					
(B) Ercs	Erythrocyte sedimentation rate							
	Female	0-30	mm/hr	1	0-30	mm/h	XX	
	Male	0-20	mm/hr	1	0-20	mm/h	XX	
B	Hematocrit							
	Female	33-43	%	0.01	0.33-0.43	1	0.XX	
	Male	39-49	%	0.01	0.39-0.49	1	0.XX	
B	Hemoglobin							
	Mass concentration							
	Female	12.0-15.0	g/dL	10	120-150	g/L	XXX	
	Male	13.6-17.2	g/dL	10	136-172	g/L	XXX	
	Substance concentration (HB[Fe])							
	Female	12.0-15.0	g/dL	0.6206	7.45-9.31	mmol/L	XX.XX	
	Male	13.6-17.2	g/dL	0.6206	8.44-10.67	mmol/L	XX.XX	
(B) Ercs	Mean corpuscular hemoglobin							
	Mass concentration	27-33	pg	1	27-33	pg	XX	
	Substance concentration (Hb[Fe])	27-33	pg	0.06206	1.68-2.05	fmol	X.XX	
(B) Ercs	Mean corpuscular hemoglobin concentration							
	Mass concentration	33-37	g/dL	10	330-370	g/L	XX0	
	Substance concentration (Hb[Fe])	33-37	g/dL	0.6206	20-23	mmol/L	XX	
(B) Ercs	Mean corpuscular volume							
	Erythrocyte volume	76-100	cu μm	1	76-100	fL	XXX	
B	Red blood cell count (erythrocytes)							
	Female	3.5-5.0	10^6/cu mm	1	3.5-5.0	10^{12}/L	X.X	
	Male	4.3-5.9	10^6/cu mm	1	4.3-5.1	10^{12}/L	X.X	
(Sf) Ercs	Red blood cell count	0	/cu mm	1	0	10^6/L	XX	
B	Reticulocyte count (adults)	10 000-75 000	/cu mm **(Dual report)**	0.001	10-75	10^6/L	XX	
	Number fraction	1-24	0/00 (No. per 1000 erythrocytes) **(Dual report)**	1	1-24	10^{-3}	XX	
		0.1-2.4	**% (Dual report)**	10	1-24	10^{-3}	XX	
B	Thrombocytes (platelets)	150-450	10^3/cu mm	1	150-450	10^9/L	XXX	
B Lkcs	White blood cell count	3200-9800	/cu mm	0.001	3.2-9.8	10^9/L	XX.X	
	Number fraction (differential)	. . .	%	0.01	. . .	1	0.XX	
(Sf) Lkcs	White blood cell count	0-5	/cu mm	1	0-5	10^6/L	XX	
			Clinical Chemistry					
S	Alanine aminotransferase (ALAT)	0-35 (35°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Albumin	4.0-6.0	g/dL	10.0	40-60	g/L	XX	1 g/L
S	α_1-Antitrypsin	150-350	mg/dL **(Dual report)**	0.01	1.5-3.5	g/L	X.X	0.1 g/L
P	Ammonia							
	As ammonia (NH_3)	10-80	μg/dL **(Dual report)**	0.5872	5-50	μmol/L	XXX	5 μmol/L
	As ammonium (NH_4^+)	10-85	μg/dL **(Dual report)**	0.5543	5-50	μmol/L	XXX	5 μmol/L
	As nitrogen (N)	10-65	μg/dL **(Dual report)**	0.7139	5-50	μmol/L	XXX	5 μmol/L
S	Amylase, enzymatic (Somogyi/Caraway)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
		50-150	Somogyi units/dL	1.850	100-300	U/L	XX0	10 U/L
S	Aspartate aminotransferase (ASAT)	0-35 (37°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Bilirubin							
	Total	0.1-1.0	mg/dL **(Dual report)**	17.10	2-18	μmol/L	XX	2 μmol/L
	Conjugated	0-0.2	mg/dL **(Dual report)**	17.10	0-4	μmol/L	XX	2 μmol/L
S	Calcium							
	Male	8.8-10.3	mg/dL **(Dual report)**	0.2495	2.20-2.58	mmol/L	X.XX	0.02 mmol/L
	Female <50 y	8.8-10.0	mg/dL **(Dual report)**	0.2495	2.20-2.50	mmol/L	X.XX	0.02 mmol/L
U	Calcium, normal diet	<250	mg/24 hr	0.02495	<6.2	mmol/d	X.X	0.1 mmol/d
B, P, S	Carbon dioxide content (bicarbonate + CO_2)	22-28	mEq/L	1.00	2-28	mmol/L	XX	1 mmol/L
S	Chloride	95-105	mEq/L	1.00	95-105	mmol/L	XXX	1 mmol/L
P	Cholesterol	<200	mg/dL **(Dual report)**	0.02586	<5.20	mmol/L	X.XX	0.05 mmol/L
P	Cholesterol esters, as a fraction of total cholesterol	60-75	%	0.01	0.60-0.75	1	X.XX	0.01

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡Present conventional units should be reported parenthetically after the SI units *only* for those units marked "Dual report."

§"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful; XX0, that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure.

Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Conventional Unit‡	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits§	Suggested Minimum Increment
S	Complement, C3	70-160	mg/dL	0.01	0.7-1.6	g/L	X.X	0.1 g/L
S	Copper	70-140	µg/dL	0.1574	11.0-22.0	µmol/L	XX.X	0.2 µmol/L
U	Copper	<40	µg/24 hr	0.0574	<0.6	µmol/d	X.X	0.2 µmol/d
P	Corticotropin (ACTH)	20-100	pg/mL	0.2202	4-22	pmol/L	XX	1 pmol/L
S	Creatine							
	Male	0.17-0.50	mg/dL	76.25	10-40	µmol/L	X0	10 µmol/L
	Female	0.35-0.93	mg/dL	76.25	30-70	µmol/L	X0	10 µmol/L
U	Creatine							
	Male	0-40	mg/24 hr	7.625	0-300	µmol/d	XX0	10 µmol/L
	Female	0-80	mg/24 hr	7.625	0-600	µmol/d	XX0	10 µmol/d
S	Creatine kinase (CK)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
S	Creatine kinase isoenzymes, MB fraction	>5 in myocardial infarction	%	0.01	>0.05	1	X.XX	0.01
S	Creatinine	0.6-1.2	mg/dL (Dual report)	88.40	50-110	µmol/L	XX0	10 µmol/L
U	Creatinine	Variable	g/24 hr (Dual report)	0.040	Variable	mmol/d	XX.X	0.1 mmol/d
S, U	Creatinine clearance	75-125	mL/min (Dual report)	0.01667	1.24-2.08	mL/s	X.XX	0.02 mL/s
U	Cystine	10-100	mg/24 hr	4.161	40-420	µmol/d	XX0	10 µmol/d
P	Digoxin, therapeutic	0.5-2.2	ng/mL (Dual report)	1.281	0.6-2.8	nmol/L	X.X	0.1 nmol/L
		0.5-2.2	µg/L (Dual report)	1.281	0.6-2.8	nmol/L	X.X	0.1 nmol/L
P	Ethyl alcohol	>100	mg/dL	0.2171	>22	mmol/L	XX	1 mmol/L
P	Fibrinogen	200-400	mg/dL	0.01	2.0-4.0	g/L	X.X	0.1 g/L
P	Follicle-stimulating hormone (FSH)							
	Female	2.0-15.0	mIU/mL	1.00	2-15	IU/L	XX	1 IU/L
	Peak production	20-50	mIU/mL	1.00	20-50	IU/L	XX	1 IU/L
	Male	1.0-10.0	mIU/mL	1.00	1-10	IU/L	XX	1 IU/L
U	Follicle-stimulating hormone (FSH)							
	Follicular phase	2-15	IU/24 hr	1.00	2-15	IU/d	XXX	1 IU/d
	Midcycle	8-40	IU/24 hr	1.00	8-40	IU/d	XXX	1 IU/d
	Luteal phase	2-10	IU/24 hr	1.00	2-10	IU/d	XXX	1 IU/d
	Menopausal women	35-100	IU/24 hr	1.00	35-100	IU/d	XXX	1 IU/d
	Male	2-15	IU/24 hr	1.00	2-15	IU/d	XXX	1 IU/d
S	γ-Glutamyl transferase (GGT)	0-30 (30°C)	Units/L	1.00	0-30	U/L	XX	1 U/L
P	Glucose	70-110	mg/dL (Dual report)	0.05551	3.9-6.1	mmol/L	XX.X	0.1 mmol/L
B	Hemoglobin							
	Male	14.0-18.0	g/dL	10.0	140-180	g/L	XXX	1 g/L
	Female	11.5-15.5	g/dL	10.0	115-155	g/L	XXX	1 g/L
S	Immunoglobulins							
	IgG	500-1200	mg/dL	0.01	5.00-12.00	g/L	XX.XX	0.01 g/L
	IgA	50-350	mg/dL	0.01	0.50-3.50	g/L	XX.XX	0.01 g/L
	IgM	30-230	mg/dL	0.01	0.30-2.30	g/L	XX.XX	0.01 g/L
	IgD	<6	mg/dL	10	<60	mg/L	XX0	10 mg/L
	IgE							
	0-3 y	0.5-1.0	U/mL	2.4	1-24	µg/L	XX	1 µg/L
	3-80 y	5-100	U/mL	2.4	12-240	µg/L	XX	1 µg/L
S	Iron							
	Male	80-180	µg/dL (Dual report)	0.1791	14-32	µmol/L	XX	1 µmol/L
	Female	60-160	µg/dL (Dual report)	0.1791	11-29	µmol/L	XX	1 µmol/L
S	Iron-binding capacity	250-460	µg/dL (Dual report)	0.1791	45-82	µmol/L	XX	1 µmol/L
S	Lactate dehydrogenase (L→P)	50-150 (37°C)	Units/L	1.00	50-150	U/L	XXX	1 U/L
			Wroblewski units/mL	0.482	. . .	U/L	XXX	1 U/L
S	Lactate, dehydrogenase isoenzymes							
	LD_1	15-40	%	0.01	0.15-0.40	1	X.XX	0.01
	LD_2	20-45	%	0.01	0.20-0.45	1	X.XX	0.01
	LD_3	15-30	%	0.01	0.15-0.30	1	X.XX	0.01
	LD_4 and LD_5	5-20	%	0.01	0.05-0.20	1	X.XX	0.01
	LD_1	10-60	Units/L	1	10-60	U/L	XX	1 U/L
	LD_2	20-70	Units/L	1	20-70	U/L	XX	1 U/L
	LD_3	10-45	Units/L	1	10-45	U/L	XX	1 U/L
	LD_4 and LD_5	5-30	Units/L	1	5-30	U/L	XX	1 U/L
B	Lead, toxic	>60	µg/dL (Dual report)	0.04826	>2.90	µmol/L	X.XX	0.05 µmol/L
			mg/dL (Dual report)	48.26	. . .	µmol/L	X.XX	0.05 µmol/L
U	Lead, toxic	>80	µg/24 hr (Dual report)	0.004826	>0.40	µmol/d	X.XX	0.05 µmol/d

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡Present conventional units should be reported parenthetically after the SI units *only* for those units marked "Dual report."

§"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful; XX0, that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure.

Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Conventional Unit‡	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits§	Suggested Minimum Increment
P	Lipids, total	400-850	mg/dL (Dual report)	0.01	4.0-8.5	g/L	X.X	0.1 g/L
P	Lipoproteins							
	Low-density (LDL), as cholesterol	50-190	mg/dL (Dual report)	0.02586	1.30-4.90	mmol/L	X.XX	0.05 mmol/L
	High-density (HDL), as cholesterol							
	Male	30-70	mg/dL (Dual report)	0.02586	0.80-1.80	mmol/L	X.XX	0.05 mmol/L
	Female	30-90	mg/dL (Dual report)	0.02586	0.80-2.35	mmol/L	X.XX	0.05 mmol/L
S	Magnesium	1.8-3.0	mg/dL (Dual report)	0.4114	0.80-1.20	mmol/L	X.XX	0.02 mmol/L
P	Phenytoin, therapeutic	10-20	mg/L	3.964	40-80	μmol/L	XX	5 μmol/L
P	Phosphatase, acid (prostatic)	0-3	King-Armstrong units/dL	1.77	0-5.5	U/L	X.X	0.05 U/L
			Bodansky units/dL	5.37	0-16.1	U/L	X.X	0.5 U/L
S	Phosphatase, alkaline	30-120	Units/L	1.00	30-120	U/L	XXX	1 U/L
			Bodansky units/dL	5.37	161-644	U/L	XXX	1 U/L
			King-Armstrong units/dL	7.1	213-852	U/L	XXX	1 U/L
S	Phosphate (as phosphorus)	2.5-5.0	mg/dL (Dual report)	0.3229	0.80-1.60	mmol/L	X.XX	0.05 mmol/L
S	Potassium	3.5-5.0	mEq/L	1.00	3.5-5.0	mmol/L	X.X	0.1 mmol/L
P	Progesterone							
	Follicular phase	<2	ng/mL (Dual report)	3.180	<6	nmol/L	XX	2 nmol/L
	Luteal phase	2-20	ng/mL (Dual report)	3.180	6-64	nmol/L	XX	2 nmol/L
S	Protein, total	6-8	g/dL	10.0	60-80	g/L	XX	1 g/L
Sf	Protein, total	<40	mg/dL	0.01	<0.40	g/L	X.XX	0.01 g/L
U	Protein, total	<150	mg/24 hr	0.001	<0.15	g/d	X.XX	0.01 g/d
S	Sodium	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
S	Sodium ion	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
U	Sodium ion	Diet dependent	mEq/24 hr	1.00	Diet dependent	mmol/d	XXX	1 mmol/d
U	Steroids							
	Hydroxycorticosteroids (as cortisol)							
	Female	2-8	mg/24 hr	2.759	5-25	μmol/d	XX	1 μmol/d
	Male	3-10	mg/24 hr	2.759	10-30	μmol/d	XX	1 μmol/d
U	17-Ketogenic steroids (as dehydroepiandrosterone)							
	Female	7-12	mg/24 hr	3.467	25-40	μmol/d	XX	1 μmol/d
	Male	9-17	mg/24 hr	3.467	30-60	μmol/d	XX	1 μmol/d
U	17-Ketosteroids (as dehydroepiandrosterone)							
	Female	6-17	mg/24 hr	3.467	20-60	μmol/d	XX	1 μmol/d
	Male	6-20	mg/24 hr	3.467	20-70	μmol/d	XX	1 μmol/d
U	Ketosteroid fractions							
	Androsterone							
	Female	0.5-3.0	mg/24 hr	3.443	1-10	μmol/d	XX	1 μmol/d
	Male	2.0-5.0	mg/24 hr	3.443	7-17	μmol/d	XX	1 μmol/d
	Dehydroepiandrosterone							
	Female	0.2-1.8	mg/24 hr	3.467	1-6	μmol/d	XX	1 μmol/d
	Male	0.2-2.0	mg/24 hr	3.467	1-7	μmol/d	XX	1 μmol/d
	Etiocholanolone							
	Female	0.8-4.0	mg/24 hr	3.443	2-14	μmol/d	XX	1 μmol/d
	Male	1.4-5.0	mg/24 hr	3.443	4-17	μmol/d	XX	1 μmol/d
				58.07	580-870	μmol/L	XX0	10 μmol/L
P	Testosterone							
	Female	<0.6	ng/mL (Dual report)	3.467	<2.0	nmol/L	XX.X	0.5 nmol/L
	Male	4.0-8.0	ng/mL (Dual report)	3.467	14.0-28.0	nmol/L	XX.X	0.5 nmol/L
S	Triiodothyronine (T_3)	75-220	ng/dL (Dual report)	0.01536	1.2-3.4	nmol/L	X.X	0.1 nmol/L
S	Urate (as uric acid)	2.0-7.0	mg/dL	59.48	120-420	μmol/L	XX0	10 μmol/L
U	Urate (as uric acid)	Diet dependent	g/24 hr	5.948	Diet dependent	mmol/d	XX	1 mmol/d
S	Urea nitrogen	8-18	mg/dL (Dual report)	0.3570	3.0-6.5	mmol/L of urea	X.X	0.5 mmol/L
U	Urea nitrogen	12-20 (diet dependent)	g/24 hr (Dual report)	35.70	430-700	mmol/d of urea	XX0	10 mmol/d
U	Urobilinogen	0-4.0	mg/24 hr	1.693	0.0-6.8	μmol/d	X.X	0.1 μmol/d
S	Zinc	75-120	μg/dL	0.1530	11.5-18.5	μmol/L	XX.X	0.1 μmol/L
U	Zinc	150-1200	μg/24 hr	0.0153	2.3-18.3	μmol/d	XX.X	0.1 μmol/d

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

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Letters

Limiting Specific Interventions in Advance Directives

To the Editor.—The article by Dr Brett[1] on the limitations of health values forms is well-stated and thought-provoking. I agree that it is very important that each person state specific goals, such as relief of pain or a peaceful death. Perhaps all such lists should be preceded by a statement that requests a trial of such therapies if the proxy and the physician think it may restore a function important to the patient, such as the ability to communicate or to relieve pain.

The list of specific interventions would be honored only after such a trial fails or when the patient's condition seems hopeless or when there are therapies that violate a patient's known religious beliefs. I disagree that "if proxies or physicians [can] override the patient's . . . choices . . . little reason existed to complete a detailed checklist in the first place."[1] If the options chosen by those making advance directives are looked upon as guidelines rather than legally binding decisions, the listing of specific interventions serves several purposes.

It can serve as the basis for discussion between the person and the proxy and the physician about concerns that might cause them to forgo a beneficial therapy (eg, a fear of dialysis based on incorrect information). Many of us have had to deal with situations where the identity of the proxy was clear but the proxy had no clear understanding of the patient's wishes.

In states where certain therapies cannot be refused by the proxy unless there is clear and convincing evidence of the patient's wishes, the lack of a specific document may place the proxy and the physician in a difficult bind. In New Hampshire, the proxy must be able to document the patient's willingness to forgo artificially provided nutrition and hydration or the patient must be given such therapy.

A specific indication by the patient that in hopeless or terminal conditions he or she would not want a given therapy can relieve the proxy of the feeling of guilt. It is not the rare family member who says, in essence, "I wouldn't want any more treatment for myself, but I don't want to be the one who pulls the plug."

My principal objection to lists of options matched to various scenarios, as promulgated by Emanuel and Emanuel[2] is that it implies that patients have a right to receive therapies even when their condition is hopeless. A pertinent example would be patients who are demented and terminally ill. The grid provided by Emanuel and Emanuel[2] would imply that such patients may request resuscitation, mechanical ventilation, and dialysis. I would hold that they not only have no right to such futile therapies, but that to offer it to them as an option is unethical.

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Bedford, NH

1. Brett AS. Limitations of listing specific medical interventions in advance directives. *JAMA.* 1991; 266:825-828.
2. Emanuel LL, Emanuel EJ. The medical directive: a new comprehensive advance care document. *JAMA.* 1989;261:3288-3293.

To the Editor.—Dr Brett's arguments against specifying unwanted interventions in health care directives[1] are exceptionally thoughtful and deserve serious attention. But, there are strong reasons for specification that also should be considered.

Physicians do not always feel able to honor patient wishes that are expressed only generally. Physicians who respect patient preferences can still get stuck—on uncertainty about just what a patient wants, or on what the law allows, or on opposition from other clinicians or the family. Specifying preferences can help resolve such problems.

Directives involve families, as well as physicians and patients. Physicians often seek family approval to withhold or withdraw life-sustaining procedures, even when patient wishes are known, and often will not honor patient choices if any family member objects. An important role of directives is to inform and persuade families, so that family members will accept patient choices and feel clear enough about choices to stand up to any resistance. Family members often need to see choices stated specifically to reach that clarity and resolve.

Brett worries that "intervention-focused directives will become the standard" for sufficiency, but physicians who are hostile to directives often act as if specificity is the standard already. General declarations about use of life-sustaining treatment are easier to circumvent than general assertions coupled with specific statements. Also, specific statements are more likely to generate discussion that reveals physician opposition at a time when the patient can respond. Too often, general preference statements result in conflict about when, and to what, they apply. By then, emotions can be running high, and many patients have lost the capacity to clarify their intentions.

The law in many states effectively requires that unwanted procedures be specified. Some statutes prohibit withholding or withdrawing life-sustaining treatments, particularly artificially provided nutrition and hydration, without specific instruction.

Edited by Drummond Rennie, MD, Deputy Editor (West), and Bruce B. Dan, MD, Senior Editor.

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Examples of Reference Style:

1. Lomas J, Enkin M, Anderson GM, Hannah WJ, Vayda E, Singer J. Opinion leaders vs audit and feedback to implement practice guidelines: delivery after previous cesarean section. *JAMA*. 1991;265:2202-2207.
2. Marcus R, Couston AM. Water-soluble vitamins: the vitamin B complex and ascorbic acid. In: Gilman AG, Rall TW, Nies AS, Taylor P, eds. *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 8th ed. New York, NY: Pergamon Press; 1990:1530-1552.

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References

1. International Committee of Medical Journal Editors. Statements from the International Committee of Medical Journal Editors. *JAMA*. 1991;265:2697-2698.
2. Glass RM. New information for authors and readers: group authorship, acknowledgments, and rejected manuscripts. *JAMA*. 1992;268:99. Correction. 1993;269:48.
3. Lundberg GD, Flanagin A. New requirements for authors: signed statements of authorship responsibility and financial disclosure. *JAMA*. 1989;262:2003-2004.
4. Iverson CL, Dan BB, Glitman P, et al. *American Medical Association Manual of Style*. 8th ed. Baltimore, Md: Williams & Wilkins; 1988.
5. International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. *JAMA*. 1993;269:2282-2286.
6. Lundberg GD. SI unit implementation—the next step. *JAMA*. 1988;260:73-76.
7. 41st World Medical Assembly. Declaration of Helsinki: recommendations guiding physicians in biomedical research involving human subjects. *Bull Pan Am Health Organ*. 1990;24:606-609.

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Authors submitting manuscripts reporting original data should prepare an abstract of no more than 250 words under the following headings: Objective, Design, Setting, Patients (or Other Participants), Interventions (if any), Main Outcome Measure(s), Results, and Conclusions. The content following each heading should be as follows:

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Adapted from Haynes RB, Mulrow CD, Huth EJ, Altman DG, Gardner MJ. More informative abstracts revisited. *Ann Intern Med*. 1990;113:69-76.

hypothesis being reported was formulated during or after data collection, this information should be clearly stated.

7. *Results.* The main results of the study should be given. Measurements that require explanation for the expected audience of the manuscript should be defined. Important measurements not included in the presentation of results should be declared. As relevant, it should be indicated whether observers were blinded to patient groupings, particularly for subjective measurements. Due to the current limitations of retrieval from electronic databases, results must be given in narrative or point form rather than tabular form if the abstract is to appear in computerized literature services such as MEDLINE. If possible, the results should be accompanied by confidence intervals (for example, 95%) and the exact level of statistical significance. For comparative studies, confidence intervals should relate to the differences between groups. For nonsignificant differences for the major study outcome measure(s), the clinically important difference sought should be stated and the confidence interval for the difference between the groups should be given. When risk changes or effect sizes are given, absolute values should be indicated so that the reader can determine the absolute as well as relative impact of the finding. Approaches such as "number needed to treat" to achieve a unit of benefit are encouraged when appropriate; reporting of relative differences alone is usually inappropriate. If appropriate, studies of screening and diagnostic tests should use the terms "sensitivity," "specificity," and "likelihood ratio." If predictive values or accuracy is given, prevalence or pretest likelihood should be given as well. No data should be reported in the abstract that do not appear in the rest of the manuscript.

8. *Conclusions.* Only those conclusions of the study that are directly supported by the evidence reported should be given, along with their clinical application (avoiding speculation and overgeneralization), and indicating whether additional study is required before the information should be used in usual clinical settings. Equal emphasis must be given to positive and negative findings of equal scientific merit.

To permit quick and selective scanning, the headings outlined above should be included in the abstract. For brevity, parts of the abstract can be written in phrases rather than complete sentences. (For example: "2. *Design.* Double-blind randomized trial," rather than "2. *Design.* The study was conducted as a double-blind, randomized trial.") This technique may make reading less smooth but facilitates selection scanning and allows more information to be conveyed per unit of space.

Review Manuscripts (Including Meta-analyses)

Authors submitting review manuscripts and reports of the results of meta-analyses should prepare an abstract of no more than 250 words under the following headings: Objective, Data Sources, Study Selection, Data Extraction, Data Synthesis, and Conclusions. The content following each heading should be as follows:

1. *Objective.* The abstract should begin with a precise statement of the primary objective of the review. The focus of this statement should be guided by whether the review emphasizes factors such as cause, diagnosis, prognosis, therapy, or prevention. It should include information about the specific population, intervention, exposure, and test or outcome that is being reviewed.

2. *Data Sources.* A succinct summary of data sources should be given, including any time restrictions. Potential sources include experts or research institutions active in the field, computerized databases and published indexes, registries, abstract booklets, conference proceedings, references identified from bibliographies of pertinent articles and books, and companies or manufacturers of tests or agents being reviewed. If a bibliographic database is used, the exact indexing terms used for article retrieval should be stated, including any constraints (for example, English language or human subjects).

3. *Study Selection.* The abstract should describe the criteria used to select studies for detailed review from among studies identified as relevant to the topic. Details of selection should include particular populations, interventions, outcomes, or methodologic designs. The method used to apply these criteria should be specified (for example, blind review, consensus, multiple reviewers). The proportion of initially identified studies that met selection criteria should be stated.

4. *Data Extraction.* Guidelines used for abstracting data and assessing data quality and validity (such as criteria for causal inference) should be described. The method by which the guidelines were applied should be stated (for example, independent extraction by multiple observers).

5. *Data Synthesis.* The main results of the review, whether qualitative or quantitative, should be stated. Methods used to obtain these results should be outlined. Meta-analyses should state the major outcomes that were pooled and include odds ratios or effect sizes and, if possible, sensitivity analyses. Numerical results should be accompanied by confidence intervals, if applicable, and exact levels of statistical significance. Evaluations of screening and diagnostic tests should address issues of sensitivity, specificity, likelihood ratios, receiver operating characteristic curves, and predictive values. Assessments of prognosis could include summarizations of survival characteristics and related variables. Major identified sources of variation between studies should be stated, including differences in treatment protocols, co-interventions, confounders, outcome measures, length of follow-up, and dropout rates.

6. *Conclusions.* The conclusions and their applications should be clearly stated, limiting generalization to the domain of the review. The need for new studies may be suggested.

Glossary of Methodologic Terms

BEFORE-AFTER TRIAL. Investigation of therapeutic alternatives in which individuals of one period and under one treatment are compared with individuals at a subsequent time, treated in a different fashion. If the disorder is not fatal and the "before" treatment is not curative, the same individuals may be studied in the before and after periods, strengthening the design through increased group comparability for the two periods. See also CROSSOVER TRIAL.

BLIND or BLINDED. Masked. Unaware. The term may be modified according to the purpose of the blinding. For example, clinicians or patients can be blind to the treatments that patients are receiving and observers can be blind to each other's assessments, making their observations uninfluenced by one another (see also DOUBLE-BLIND). To avoid confusion, the term MASKED is preferred in studies in which vision loss of patients is an outcome of interest.

CASE-CONTROL STUDY (CASE-REFERENT OR CASE-COMPARISON STUDY). Study generally used to test possible causes of a disease or disorder, in which individuals who have a designated disorder are compared with individuals who do not have the disorder with respect to previous current exposure to a putative causal factor. For example, persons with hepatic cancer (cases) are compared with persons without hepatic cancer (controls) and history of hepatitis B is determined for the two groups. A CASE-CONTROL STUDY is often referred to as a RETROSPECTIVE STUDY (even if patients are recruited prospectively) because the logic of the design leads from effect to cause.

CASE SERIES. A series of patients with a defined disorder. The term is usually used to describe a study reporting on a consecutive collection of patients treated in a similar manner, without a concurrent control group. For example, a surgeon might describe the characteristics of and outcomes for 100 consecutive patients with cerebral ischemia who received a revascularization procedure. See also CONSECUTIVE SAMPLE.

COHORT. A group of persons with a common characteristic or set of characteristics. Typically, the group is followed for a specified period to determine the incidence of a disorder or complications of an established disorder (that is, prognosis), as in COHORT ANALYTIC STUDY (prospective study) (see also INCEPTION COHORT).

COHORT ANALYTIC STUDY. Prospective investigation of the factors that might cause a disorder in which a cohort of individuals who do not have evidence of an outcome of interest but who are exposed to the putative cause are compared with a concurrent cohort who are also free of the outcome but not exposed to the putative cause. Both cohorts are then followed to compare the incidence of the outcome of interest.

CONFOUNDER, CONFOUNDING VARIABLE. A factor that distorts the true relationship of the study variables of central interest by virtue of being related to the outcome of interest but extraneous to the study question and unequally distributed among the groups being compared. For example, age might confound a study of the effect of a toxin on longevity if individuals exposed to the toxin were older than those not exposed.

CONSECUTIVE SAMPLE. Sample in which the units are chosen on a strict "first come, first chosen" basis. All individuals who are eligible should be included as they are seen.

CONVENIENCE SAMPLE. Individuals or groups selected at the convenience of the investigator or primarily because they were available at a convenient time or place.

COST-BENEFIT ANALYSIS. A form of economic assessment, usually from society's perspective, in which the costs of medical care are compared with the economic benefits of the care, with both costs and benefits expressed in units of currency. The benefits typically include reductions in future health care costs and increased earnings due to the improved health of those receiving the care.

COST-EFFECTIVENESS ANALYSIS. An economic evaluation in which alternative programs, services, or interventions are compared in terms of the cost per unit of clinical effect (for example, cost per life saved, cost per millimeter of mercury of blood pressure lowered, or cost per quality-adjusted life-year gained). The last form of measuring outcomes (and equivalents such as "healthy days of life gained") gives rise to what is also referred to as COST-UTILITY ANALYSIS.

COST-UTILITY ANALYSIS. See COST-EFFECTIVENESS ANALYSIS.

CRITERION STANDARD. Preferred term to "gold standard." A method having established or widely accepted accuracy for determining a diagnosis, providing a standard to which a new screening or diagnostic test can be compared. The method need not be a single or simple procedure but could include follow-up of patients to observe the evolution of their conditions or the consensus of an expert panel of clinicians, as is frequently used in the study of psychiatric conditions. CRITERION STANDARD can also be used in studies of the quality of care to indicate a level of performance, agreed to by experts or peers, to which the performance of individual practitioners or institutions can be compared.

CROSSOVER TRIAL. A method of comparing two or more treatments or interventions in which subjects or patients, on completion of the course of one treatment, are switched to another. Typically, allocation to the first treatment is by random process. Participants' performance in one period is used to judge their performance in others, usually reducing variability. See also BEFORE-AFTER TRIAL.

DATA-SET. Raw data gathered by investigators.

DOUBLE-BLIND or DOUBLE MASK. (1) Neither the subject nor the study staff (those responsible for patient treatment and data collection) are aware of the group or intervention to which the subject has been assigned. (2) Any condition in which two different groups of persons are purposely denied access to information in order to keep that information from influencing some measurement, observation, or process.

ECONOMIC EVALUATION. Comparative analysis of alternative courses of action in terms of both their costs and consequences.

END POINT. See OUTCOMES.

GOLD STANDARD. See CRITERION STANDARD.

INCEPTION COHORT. A designated group of persons, assembled at a common time early in the development of a specific clinical disorder (for example, at the time of first exposure to the putative cause or at the time of initial diagnosis), who are followed thereafter (see also COHORT).

LIKELIHOOD RATIO. For a screening or diagnostic test (including clinical signs or symptoms), expresses the relative odds that a given test result would be expected in a patient with (as opposed to one without) a disorder of interest.

MASKED. See BLIND.

MATCHING. The deliberate process of making a study group and a comparison group comparable with respect to factors that are extraneous to the purpose of the investigation but that might interfere with the interpretation of the study's findings (for example, in case-control studies, individual cases might be matched or paired with a specific control on the basis of comparable age, gender, clinical features, or a combination).

NONRANDOMIZED CONTROL TRIAL. Experiment in which assignment of patients to the intervention groups is at the convenience of the investigator or according to a preset plan that does not conform to the definition of RANDOM. See also RANDOMIZED CONTROL TRIAL.

OUTCOMES. All possible changes in health status that may occur in following subjects or that may stem from exposure to a causal factor or from preventive or therapeutic interventions. The narrower term END POINTS refers to health events that lead to completion or termination of follow-up of an individual in a trial or cohort study, for example, death or major morbidity, particularly related to the study question.

PRIMARY CARE. Medical care provided by the clinician of first contact for the patient. Typically, the primary care physician is a general practitioner, family practitioner, primary care internist, or primary care pediatrician. Primary care may also be administered by health professionals other than physicans, notably, specially trained nurses (nurse practitioners) and paramedics. Usually, a general practitioner, family practitioner, nurse practitioner, or paramedic provides only primary care services but a person with specialty qualifications may provide primary care, alone or in combination with referral services (see also REFERRED CARE). Thus, it is the nature of the contact (first compared with referred) that determines the care designation rather than the qualifications of the practitioner.

PRIMARY CARE CENTER, PRIMARY CARE SETTING. Medical care facility that offers first-contact health care only. Patients requiring specialized medical care are referred elsewhere. Some primary care centers provide a mixture of primary and referred care. Thus it is the nature of the service provided (first contact) rather than the setting per se that distinguishes primary from more advanced levels of care. See also PRIMARY CARE, REFERRED CARE, TERTIARY CARE CENTER.

PROSPECTIVE STUDY. See COHORT and COHORT ANALYTIC STUDY.

RANDOM. Governed by a formal chance process in which the occurrence of previous events is of no value in predicting future events. The probability of assignment of, for example, a given subject to a specified treatment group is fixed and constant (typically 0.50) but the subject's actual assignment cannot be known until it occurs.

RANDOM SAMPLE. A sample derived by selecting sampling units (for example, individual patients) such that each unit has an independent and fixed (generally equal) chance of selection. Whether a given unit is selected is determined by chance (for example, by a table of randomly ordered numbers).

RANDOMIZATION, RANDOM ALLOCATION. Allocation of individuals to groups by chance, usually done with the aid of a table of random numbers. Not to be confused with systematic allocation (for example, on even and odd days of the month) or allocation at the convenience or discretion of the investigator.

RANDOMIZED TRIAL (RANDOMIZED CONTROL[LED] TRIAL, RANDOMIZED CLINICAL TRIAL, RCT). Experiment in which individuals are randomly allocated to receive or not receive an experimental preventive, therapeutic, or diagnostic procedure and then followed to determine the effect of the intervention.

REFERRED CARE. Medical care provided to a patient when referred by one health professional to another with more specialized qualifications or interests. There are two levels of referred care: secondary and tertiary. Secondary care is usually provided by a broadly skilled specialist such as a general surgeon, general internist, or obstetrician. Tertiary care is provided on referral of a patient to a subspecialist, such as an orthopedic surgeon, neurologist, or neonatologist. See also TERTIARY CARE CENTER.

RETROSPECTIVE STUDY. See CASE-CONTROL STUDY.

SECONDARY CARE. See REFERRED CARE.

SENSITIVITY. The sensitivity of a diagnostic or screening test is the proportion of people who truly have a designated disorder who are so identified by the test. The test may consist of or include clinical observations.

SEQUENTIAL SAMPLE. See CONSECUTIVE SAMPLE.

SPECIFICITY. The specificity of a diagnostic or screening test is the proportion of people who are truly free of a designated disorder who are so identified by the test. The test may consist of or include clinical observations.

SURVEY. Observational or descriptive, nonexperimental study in which individuals are systematically examined for the absence or presence (or degree of presence) of characteristics of interest.

TERTIARY CARE. See REFERRED CARE.

TERTIARY CARE CENTER. A tertiary care center is a medical facility that receives referrals from both primary and secondary care levels and usually offers tests, treatments, and procedures that are not available elsewhere. Most tertiary care centers offer a mixture of primary, secondary, and tertiary care services so that it is the specific level of service rendered rather than the facility that determines the designation of care in a given study. See also REFERRED CARE.

SI Units

Système International Conversion Factors for Frequently Used Laboratory Components

System*	Component	Present Reference Intervals (Examples)†	Present Conventional Unit‡	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits§	Suggested Minimum Increment
			Hematology					
(B) Ercs	Erythrocyte sedimentation rate							
	Female	0-30	mm/hr	1	0-30	mm/h	XX	
	Male	0-20	mm/hr	1	0-20	mm/h	XX	
B	Hematocrit							
	Female	33-43	%	0.01	0.33-0.43	1	0.XX	
	Male	39-49	%	0.01	0.39-0.49	1	0.XX	
B	Hemoglobin							
	Mass concentration							
	Female	12.0-15.0	g/dL	10	120-150	g/L	XXX	
	Male	13.6-17.2	g/dL	10	136-172	g/L	XXX	
	Substance concentration (HB[Fe])							
	Female	12.0-15.0	g/dL	0.6206	7.45-9.31	mmol/L	XX.XX	
	Male	13.6-17.2	g/dL	0.6206	8.44-10.67	mmol/L	XX.XX	
(B) Ercs	Mean corpuscular hemoglobin							
	Mass concentration	27-33	pg	1	27-33	pg	XX	
	Substance concentration (Hb[Fe])	27-33	pg	0.06206	1.68-2.05	fmol	X.XX	
(B) Ercs	Mean corpuscular hemoglobin concentration							
	Mass concentration	33-37	g/dL	10	330-370	g/L	XX0	
	Substance concentration (Hb[Fe])	33-37	g/dL	0.6206	20-23	mmol/L	XX	
(B) Ercs	Mean corpuscular volume							
	Erythrocyte volume	76-100	cu μm	1	76-100	fL	XXX	
B	Red blood cell count (erythrocytes)							
	Female	3.5-5.0	10^6/cu mm	1	3.5-5.0	10^{12}/L	X.X	
	Male	4.3-5.9	10^6/cu mm	1	4.3-5.1	10^{12}/L	X.X	
(Sf) Ercs	Red blood cell count	0	/cu mm	1	0	10^6/L	XX	
B	Reticulocyte count (adults)	10 000-75 000	/cu mm **(Dual report)**	0.001	10-75	10^6/L	XX	
	Number fraction	1-24	0/00 (No. per 1000 erythrocytes) **(Dual report)**	1	1-24	10^{-3}	XX	
		0.1-2.4	% **(Dual report)**	10	1-24	10^{-3}	XX	
B	Thrombocytes (platelets)	150-450	10^3/cu mm	1	150-450	10^9/L	XXX	
B Lkcs	White blood cell count	3200-9800	/cu mm	0.001	3.2-9.8	10^9/L	XX.X	
	Number fraction (differential)	. . .	%	0.01	. . .	1	0.XX	
(Sf) Lkcs	White blood cell count	0-5	/cu mm	1	0-5	10^6/L	XX	
			Clinical Chemistry					
S	Alanine aminotransferase (ALAT)	0-35 (35°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Albumin	4.0-6.0	g/dL	10.0	40-60	g/L	XX	1 g/L
S	α_1-Antitrypsin	150-350	mg/dL **(Dual report)**	0.01	1.5-3.5	g/L	X.X	0.1 g/L
P	Ammonia							
	As ammonia (NH_3)	10-80	μg/dL **(Dual report)**	0.5872	5-50	μmol/L	XXX	5 μmol/L
	As ammonium (NH_4^+)	10-85	μg/dL **(Dual report)**	0.5543	5-50	μmol/L	XXX	5 μmol/L
	As nitrogen (N)	10-65	μg/dL **(Dual report)**	0.7139	5-50	μmol/L	XXX	5 μmol/L
S	Amylase, enzymatic (Somogyi/Caraway)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
		50-150	Somogyi units/dL	1.850	100-300	U/L	XX0	10 U/L
S	Aspartate aminotransferase (ASAT)	0-35 (37°C)	Units/L	1.00	0-35	U/L	XX	1 U/L
			Karmen units/mL	0.482	. . .	U/L	XX	1 U/L
S	Bilirubin							
	Total	0.1-1.0	mg/dL **(Dual report)**	17.10	2-18	μmol/L	XX	2 μmol/L
	Conjugated	0-0.2	mg/dL **(Dual report)**	17.10	0-4	μmol/L	XX	2 μmol/L
S	Calcium							
	Male	8.8-10.3	mg/dL **(Dual report)**	0.2495	2.20-2.58	mmol/L	X.XX	0.02 mmol/L
	Female <50 y	8.8-10.0	mg/dL **(Dual report)**	0.2495	2.20-2.50	mmol/L	X.XX	0.02 mmol/L
U	Calcium, normal diet	<250	mg/24 hr	0.02495	<6.2	mmol/d	X.X	0.1 mmol/d
B, P, S	Carbon dioxide content (bicarbonate + CO_2)	22-28	mEq/L	1.00	2-28	mmol/L	XX	1 mmol/L
S	Chloride	95-105	mEq/L	1.00	95-105	mmol/L	XXX	1 mmol/L
P	Cholesterol	<200	mg/dL **(Dual report)**	0.02586	<5.20	mmol/L	X.XX	0.05 mmol/L
P	Cholesterol esters, as a fraction of total cholesterol	60-75	%	0.01	0.60-0.75	1	X.XX	0.01

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡Present conventional units should be reported parenthetically after the SI units *only* for those units marked "Dual report."

§"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful; XX0, that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure.

Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Conventional Unit‡	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits§	Suggested Minimum Increment
S	Complement, C3	70-160	mg/dL	0.01	0.7-1.6	g/L	X.X	0.1 g/L
S	Copper	70-140	µg/dL	0.1574	11.0-22.0	µmol/L	XX.X	0.2 µmol/L
U	Copper	<40	µg/24 hr	0.0574	<0.6	µmol/d	X.X	0.2 µmol/d
P	Corticotropin (ACTH)	20-100	pg/mL	0.2202	4-22	pmol/L	XX	1 pmol/L
S	Creatine							
	Male	0.17-0.50	mg/dL	76.25	10-40	µmol/L	X0	10 µmol/L
	Female	0.35-0.93	mg/dL	76.25	30-70	µmol/L	X0	10 µmol/L
U	Creatine							
	Male	0-40	mg/24 hr	7.625	0-300	µmol/d	XX0	10 µmol/L
	Female	0-80	mg/24 hr	7.625	0-600	µmol/d	XX0	10 µmol/d
S	Creatine kinase (CK)	0-130 (37°C)	Units/L	1.00	0-130	U/L	XXX	1 U/L
S	Creatine kinase isoenzymes, MB fraction	>5 in myocardial infarction	%	0.01	>0.05	1	X.XX	0.01
S	Creatinine	0.6-1.2	mg/dL (Dual report)	88.40	50-110	µmol/L	XX0	10 µmol/L
U	Creatinine	Variable	g/24 hr (Dual report)	8.840	Variable	mmol/d	XX.X	0.1 mmol/d
S, U	Creatinine clearance	75-125	mL/min (Dual report)	0.01667	1.24-2.08	mL/s	X.XX	0.02 mL/s
U	Cystine	10-100	mg/24 hr	4.161	40-420	µmol/d	XX0	10 µmol/d
P	Digoxin, therapeutic	0.5-2.2	ng/mL (Dual report)	1.281	0.6-2.8	nmol/L	X.X	0.1 nmol/L
		0.5-2.2	µg/L (Dual report)	1.281	0.6-2.8	nmol/L	X.X	0.1 nmol/L
P	Ethyl alcohol	>100	mg/dL	0.2171	>22	mmol/L	XX	1 mmol/L
P	Fibrinogen	200-400	mg/dL	0.01	2.0-4.0	g/L	X.X	0.1 g/L
P	Follicle-stimulating hormone (FSH)							
	Female	2.0-15.0	mIU/mL	1.00	2-15	IU/L	XX	1 IU/L
	Peak production	20-50	mIU/mL	1.00	20-50	IU/L	XX	1 IU/L
	Male	1.0-10.0	mIU/mL	1.00	1-10	IU/L	XX	1 IU/L
U	Follicle-stimulating hormone (FSH)							
	Follicular phase	2-15	IU/24 hr	1.00	2-15	IU/d	XXX	1 IU/d
	Midcycle	8-40	IU/24 hr	1.00	8-40	IU/d	XXX	1 IU/d
	Luteal phase	2-10	IU/24 hr	1.00	2-10	IU/d	XXX	1 IU/d
	Menopausal women	35-100	IU/24 hr	1.00	35-100	IU/d	XXX	1 IU/d
	Male	2-15	IU/24 hr	1.00	2-15	IU/d	XXX	1 IU/d
S	γ-Glutamyl transferase (GGT)	0-30 (30°C)	Units/L	1.00	0-30	U/L	XX	1 U/L
P	Glucose	70-110	mg/dL (Dual report)	0.05551	3.9-6.1	mmol/L	XX.X	0.1 mmol/L
B	Hemoglobin							
	Male	14.0-18.0	g/dL	10.0	140-180	g/L	XXX	1 g/L
	Female	11.5-15.5	g/dL	10.0	115-155	g/L	XXX	1 g/L
S	Immunoglobulins							
	IgG	500-1200	mg/dL	0.01	5.00-12.00	g/L	XX.XX	0.01 g/L
	IgA	50-350	mg/dL	0.01	0.50-3.50	g/L	XX.XX	0.01 g/L
	IgM	30-230	mg/dL	0.01	0.30-2.30	g/L	XX.XX	0.01 g/L
	IgD	<6	mg/dL	10	<60	mg/L	XX0	10 mg/L
	IgE							
	0-3 y	0.5-1.0	U/mL	2.4	1-24	µg/L	XX	1 µg/L
	3-80 y	5-100	U/mL	2.4	12-240	µg/L	XX	1 µg/L
S	Iron							
	Male	80-180	µg/dL (Dual report)	0.1791	14-32	µmol/L	XX	1 µmol/L
	Female	60-160	µg/dL (Dual report)	0.1791	11-29	µmol/L	XX	1 µmol/L
S	Iron-binding capacity	250-460	µg/dL (Dual report)	0.1791	45-82	µmol/L	XX	1 µmol/L
S	Lactate dehydrogenase (L→P)	50-150 (37°C)	Units/L	1.00	50-150	U/L	XXX	1 U/L
			Wroblewski units/mL	0.482	. . .	U/L	XXX	1 U/L
S	Lactate, dehydrogenase isoenzymes							
	LD_1	15-40	%	0.01	0.15-0.40	1	X.XX	0.01
	LD_2	20-45	%	0.01	0.20-0.45	1	X.XX	0.01
	LD_3	15-30	%	0.01	0.15-0.30	1	X.XX	0.01
	LD_4 and LD_5	5-20	%	0.01	0.05-0.20	1	X.XX	0.01
	LD_1	10-60	Units/L	1	10-60	U/L	XX	1 U/L
	LD_2	20-70	Units/L	1	20-70	U/L	XX	1 U/L
	LD_3	10-45	Units/L	1	10-45	U/L	XX	1 U/L
	LD_4 and LD_5	5-30	Units/L	1	5-30	U/L	XX	1 U/L
B	Lead, toxic	>60	µg/dL (Dual report)	0.04826	>2.90	µmol/L	X.XX	0.05 µmol/L
			mg/dL (Dual report)	48.26	. . .	µmol/L	X.XX	0.05 µmol/L
U	Lead, toxic	>80	µg/24 hr (Dual report)	0.004826	>0.40	µmol/d	X.XX	0.05 µmol/d

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

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Système International Conversion Factors for Frequently Used Laboratory Components (cont)

System*	Component	Present Reference Intervals (Examples)†	Present Conventional Unit‡	Conversion Factor	SI Reference Intervals†	SI Unit Symbol	Significant Digits§	Suggested Minimum Increment
P	Lipids, total	400-850	mg/dL (Dual report)	0.01	4.0-8.5	g/L	X.X	0.1 g/L
P	Lipoproteins							
	Low-density (LDL), as cholesterol	50-190	mg/dL (Dual report)	0.02586	1.30-4.90	mmol/L	X.XX	0.05 mmol/L
	High-density (HDL), as cholesterol							
	Male	30-70	mg/dL (Dual report)	0.02586	0.80-1.80	mmol/L	X.XX	0.05 mmol/L
	Female	30-90	mg/dL (Dual report)	0.02586	0.80-2.35	mmol/L	X.XX	0.05 mmol/L
S	Magnesium	1.8-3.0	mg/dL (Dual report)	0.4114	0.80-1.20	mmol/L	X.XX	0.02 mmol/L
P	Phenytoin, therapeutic	10-20	mg/L	3.964	40-80	µmol/L	XX	5 µmol/L
P	Phosphatase, acid (prostatic)	0-3	King-Armstrong units/dL	1.77	0-5.5	U/L	X.X	0.05 U/L
			Bodansky units/dL	5.37	0-16.1	U/L	X.X	0.5 U/L
S	Phosphatase, alkaline	30-120	Units/L	1.00	30-120	U/L	XXX	1 U/L
			Bodansky units/dL	5.37	161-644	U/L	XXX	1 U/L
			King-Armstrong units/dL	7.1	213-852	U/L	XXX	1 U/L
S	Phosphate (as phosphorus)	2.5-5.0	mg/dL (Dual report)	0.3229	0.80-1.60	mmol/L	X.XX	0.05 mmol/L
S	Potassium	3.5-5.0	mEq/L	1.00	3.5-5.0	mmol/L	X.X	0.1 mmol/L
P	Progesterone							
	Follicular phase	<2	ng/mL (Dual report)	3.180	<6	nmol/L	XX	2 nmol/L
	Luteal phase	2-20	ng/mL (Dual report)	3.180	6-64	nmol/L	XX	2 nmol/L
S	Protein, total	6-8	g/dL	10.0	60-80	g/L	XX	1 g/L
Sf	Protein, total	<40	mg/dL	0.01	<0.40	g/L	X.XX	0.01 g/L
U	Protein, total	<150	mg/24 hr	0.001	<0.15	g/d	X.XX	0.01 g/d
S	Sodium	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
S	Sodium ion	135-147	mEq/L	1.00	135-147	mmol/L	XXX	1 mmol/L
U	Sodium ion	Diet dependent	mEq/24 hr	1.00	Diet dependent	mmol/d	XXX	1 mmol/d
U	Steroids							
	Hydroxycorticosteroids (as cortisol)							
	Female	2-8	mg/24 hr	2.759	5-25	µmol/d	XX	1 µmol/d
	Male	3-10	mg/24 hr	2.759	10-30	µmol/d	XX	1 µmol/d
U	17-Ketogenic steroids (as dehydroepiandrosterone)							
	Female	7-12	mg/24 hr	3.467	25-40	µmol/d	XX	1 µmol/d
	Male	9-17	mg/24 hr	3.467	30-60	µmol/d	XX	1 µmol/d
U	17-Ketosteroids (as dehydroepiandrosterone)							
	Female	6-17	mg/24 hr	3.467	20-60	µmol/d	XX	1 µmol/d
	Male	6-20	mg/24 hr	3.467	20-70	µmol/d	XX	1 µmol/d
U	Ketosteroid fractions							
	Androsterone							
	Female	0.5-3.0	mg/24 hr	3.443	1-10	µmol/d	XX	1 µmol/d
	Male	2.0-5.0	mg/24 hr	3.443	7-17	µmol/d	XX	1 µmol/d
	Dehydroepiandrosterone							
	Female	0.2-1.8	mg/24 hr	3.467	1-6	µmol/d	XX	1 µmol/d
	Male	0.2-2.0	mg/24 hr	3.467	1-7	µmol/d	XX	1 µmol/d
	Etiocholanolone							
	Female	0.8-4.0	mg/24 hr	3.443	2-14	µmol/d	XX	1 µmol/d
	Male	1.4-5.0	mg/24 hr	3.443	4-17	µmol/d	XX	1 µmol/d
				58.07	580-870	µmol/L	XX0	10 µmol/L
P	Testosterone							
	Female	<0.6	ng/mL (Dual report)	3.467	<2.0	nmol/L	XX.X	0.5 nmol/L
	Male	4.0-8.0	ng/mL (Dual report)	3.467	14.0-28.0	nmol/L	XX.X	0.5 nmol/L
S	Triiodothyronine (T_3)	75-220	ng/dL (Dual report)	0.01536	1.2-3.4	nmol/L	X.X	0.1 nmol/L
S	Urate (as uric acid)	2.0-7.0	mg/dL	59.48	120-420	µmol/L	XX0	10 µmol/L
U	Urate (as uric acid)	Diet dependent	g/24 hr	5.948	Diet dependent	mmol/d	XX	1 mmol/d
S	Urea nitrogen	8-18	mg/dL (Dual report)	0.3570	3.0-6.5	mmol/L of urea	X.X	0.5 mmol/L
U	Urea nitrogen	12-20 (diet dependent)	g/24 hr (Dual report)	35.70	430-700	mmol/d of urea	XX0	10 mmol/d
U	Urobilinogen	0-4.0	mg/24 hr	1.693	0.0-6.8	µmol/d	X.X	0.1 µmol/d
S	Zinc	75-120	µg/dL	0.1530	11.5-18.5	µmol/L	XX.X	0.1 µmol/L
U	Zinc	150-1200	µg/24 hr	0.0153	2.3-18.3	µmol/d	XX.X	0.1 µmol/d

*P represents plasma; B, blood; S, serum; U, urine; Sf, spinal fluid; Ercs, erythrocytes; and Lkcs, leukocytes.

†These reference values are not intended to be definitive since each laboratory determines its own values. They are provided for illustration only.

‡Present conventional units should be reported parenthetically after the SI units *only* for those units marked "Dual report."

§"Significant digits" refers to the number of digits used to describe the reported results. XX implies that results expressed to the nearest whole number are meaningful; XX0, that results are only meaningful when rounded to the nearest 10, and that results reported to lower numbers or decimal points are beyond the sensitivity of the procedure.

Letters

National Health Care Reform: The Aura of Inevitability Intensifies

To the Editor.—In his Editorial "National Health Care Reform," Dr Lundberg[1] repeats the common misconception that specialists "do expensive things." He talks about the "incentive/disincentive of paying much for procedures (whether or not they are needed or effective) and little for primary care." It made me angry to read in print once again the false conception of what specialists do and what specialists can offer. It is often the primary practitioner in defending his own economic turf who states that the minute you go to a specialist, he will "do something," meaning he will do some type of expensive procedure. In dermatology, we like to consider ourselves as "primary care doctors of the skin." We feel patients should have direct access to our services and knowledge, and it should not be a financial burden to send anyone to us or to have to have a patient be able to walk in themselves. We don't look for expensive procedures to do—we just try to diagnose the problem accurately and make the patient better.

Health maintenance organizations (HMOs) buy the hypothesis that primary care physicians will always save money, and God forbid, self-referral to a dermatologist will actually cost money. Quite the contrary! I propose that HMO patients with skin conditions should be required to see a dermatologist first! It will save money.

It is also known that when presented with a list of 20 of the most common dermatologic diagnoses, most primary care physicians are lucky to diagnose 60% of these correctly the first time. Dermatologists are often in the 90% range. If that is doing something, to me it is doing the right thing—it is making the right diagnosis and using the right medicine the first time.

Please do not repeat the mistake that dermatologists should not be the first point of entry to the medical care system if a patient has a skin condition. Doesn't it save money to get the diagnosis right the first time and not try shotgun therapy after shotgun therapy searching for whatever might work? Why is primary access directly to the dermatologist by a patient such anathema?

The definition of specialist does not mean "invasive procedure-oriented practitioner looking for a way to use his new medical instrument." To me, the definition of specialist as it applies to dermatology means the person best trained to diagnose and cure a problem related to the skin. I would hope that our patients, in HMOs or otherwise, have access to us the first time, not at the end of a long chain of physicians trying to guess what is wrong by trying to guess what might fix it.

Michael H. Coverman, MD
Austin, Tex

1. Lundberg GD. National health care reform: the aura of inevitability intensifies. *JAMA.* 1992;267:2521-2524.

To the Editor.—The recent Editorial dealing with the scope of proposals for health care reform in the United States demonstrated the pressures for such reform.[1] But it did not explore either the adverse reactions of the people in or contemplating entering the medical profession or the implications for the future of health care of some of the current changes and those being proposed, if they lead to a decrease in the number and quality of individuals interested in the profession.

The double burdens of malpractice and micromanagement are rapidly becoming intolerable. The people driving these problems—trial lawyers and medical bureaucrats—are having such a profoundly demoralizing effect on the medical community that many physicians I know are becoming disenchanted, considering early retirement or career changes, and discouraging their own children (as well as anyone else who asks) from going into the profession. This will dilute the quality of practitioners. Within a generation or two—if the current problems persist—few bright, aggressive people will be interested in medicine. One must ask oneself what this will mean for the quality of medical care in the United States, particularly for the 85% of the people currently insured.

Whatever solutions for rising costs are adopted must take into consideration tort reform and preservation of physician autonomy or there will be no system to be reformed. And it is urgent that these problems be addressed at once.

Howard H. Kaufman, MD
West Virginia University
Morgantown

1. Lundberg GD. National health care reform: the aura of inevitability intensifies. *JAMA.* 1992;267:2521-2524.

To the Editor.—I was impressed with the power and simplicity of your graphic demonstration that the rapidly increasing portion of the US gross national product (GNP) that is spent on medical care has not proportionally advanced the mean life expectancy.[1] The rapid rise in the percentage of GNP spent for medical care since 1967 without increased life expectancy led you to doubt that US medicine provides a proportional value for this expense.

While life expectancy has little relation to health care expense, the median age of the US population may be the engine that is driving the explosion in percentage of the GNP used for health care costs (Figure).[2,3] Both of these measures began their rapid and unrelenting increases about 1970, and predict a difficult and expensive future. This dramatic aging of the US population is both the result of our most impressive medical successes and the cause of our medical economic

Guidelines for Letters

Letters will be published at the discretion of the editors as space permits and are subject to editing and abridgment. They should be typewritten double-spaced and submitted in duplicate. They should not exceed 500 words of text. References, if any, should be held to a minimum, preferably five or fewer. Letters discussing a recent *JAMA* article should be received within 1 month of the article's publication. Letters must not duplicate other material published or submitted for publication. A signed statement for copyright, authorship responsibility, and financial disclosure is essential for publication. Letters not meeting these guidelines are generally not acknowledged. We do not routinely return unpublished letters. Also see Instructions for Authors.

Edited by Drummond Rennie, MD, Deputy Editor (West), and Bruce B. Dan, MD, Senior Editor.

Letters

Mandatory National Health Service

To the Editor.—I had to write a response to the article concerning mandatory national health service by Dr Johns.[1]

Ideas concerning future medical delivery systems have been expressed well by authors of various articles in *JAMA* over the last few years. I am beginning to tire of articles emphatically pushing the "right" to medical care, the fact that "universal access" will solve all our medical problems, and the "fact" that specialists are always high-priced, do inappropriate procedures, and are now concerned about their financial bottom line. Now, to paraphrase Johns, "public service physicians would insure society's goal of competent, compassionate, and dedicated physicians."

I have spent time in Haiti, Romania, and Mexico donating medical time, equipment, and service. In all situations I've found that I have most enjoyed giving medical care when my efforts have been received with gratitude, even when all I had to offer was compassion. Often my "payment" has been only a smile or a handshake, sometimes a Haitian dollar, or a small item presented as a gift.

This type of care is not "free"—it is an interaction involving gratitude on behalf of the patient and humility on the part of the provider.

In this life, we all learn that you don't get something for nothing, and this unfortunately is implied when we accept health care as a right. Nationalizing our health care system will generate negative and demanding attitudes in physicians and patients. My friends in third world countries, as well as I, have had a very difficult time finding competence, compassion, and dedication as common attributes in public "servants."

Gary L. Brown, MD
Mount Vernon, Wash

1. Johns MME. Mandatory national health service: an idea whose time has come. *JAMA.* 1993;269:3156-3157.

To the Editor.—While it is gratifying to read that someone from Johns Hopkins acknowledges family medicine and general internal medicine in one sentence, the recommendations made by Dr Johns[1] for health care reform exhibit a naivete about primary care that seems to characterize overspecialized institutions such as Johns Hopkins.

Johns recommends a dual track in which "the path of the young physician would divide into those pursuing generalist training and those pursuing specialist training. For the first group, the internship year would be followed immediately by 2 years of advanced generalist residency training.... [M]edical school graduates pursuing specialist training... would go directly into 2 years of national health service...."

Johns here establishes a false Cartesian duality that maintains that primary care medicine is not a specialty and suggests that primary care can be adequately provided by internship-level "warm bodies" awaiting "specialty" training.

From my own experience as a National Health Corps physician in New Mexico (two cases of plague, several cases of pertussis, one clostridial sepsis, complicated diabetes and congestive heart failure, heroin addiction, medical problems complicated by chronic psychiatric disorders, eclampsia, histiocytosis, myxedema, thyroid storm, and more), I do not believe that a physician with 12 months of internship can provide adequate primary care.

The success of any health reform plan depends not on the placement of "warm bodies" in certain locales, but on the training of primary care specialists who can provide quality and cost-effective care. Comparisons of family medicine specialists and general internists have found that family physicians order fewer blood and x-ray examinations,[2] charge less,[3] hospitalize for fewer days,[4] and consult less,[5] without compromising the quality of care.

Consequently, any national health service program that relies on interns to provide sophisticated primary care in today's complex medical-social environment is likely to shortchange the public in quality while further inflating the cost of medical care.

While some form of national health service will do much to address inequalities in access to medical care, a true plan for health care reform would recognize primary care as a sophisticated and demanding specialty.

I would like to see only one primary care residency lasting 3 years. After 3 years of primary care training (focusing on cost-effective outpatient medical care), family physicians would complete an additional year in obstetrics and neonatology; pediatricians, an additional year in pediatrics; and medical subspecialists would go on to complete their fellowships. Such a program would best serve the health of the public.

Neal Devitt, MD
Santa Fe, NM

1. Johns MME. Mandatory national health service: an idea whose time has come. *JAMA.* 1993;269:3156-3157.
2. McClure CL, Gall EP, Meredith KE, et al. Family practice and internal medicine clinical judgment in a university setting. *J Fam Pract.* 1986;22:443-448.
3. McGann KP, Bowman MA. A comparison of morbidity and mortality for family physicians' and internists' admissions. *J Fam Pract.* 1990;31:541-545.
4. Bertakis RD, Robbins JA. Utilization of hospital services. *J Fam Pract.* 1989;28:91-96.
5. Bertakis RD, Robbins JA. Gatekeeping in primary care: a comparison of internal medicine and family practice. *J Fam Pract.* 1987;24:305-309.

To the Editor.—The Editorial by Dr Johns[1] is an important reminder to the health care task force that the success of any reform depends ultimately on the people who will implement it. Currently there are too few general practitioners in areas

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Edited by Drummond Rennie, MD, Deputy Editor (West), and Margaret A. Winker, MD, Senior Editor.

AMERICAN
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MANUAL OF STYLE

EIGHTH EDITION

layout, and figures are sent to the senior production assistants. They designate type face and check that the manuscript and the layout correspond with one another before sending the manuscript to the printer for typesetting and page makeup. The page proofs are sent to the senior editor and the chief editor for review, while proofreaders check them against the original copy-edited manuscript. The copy editor will also send the author a proofread copy of the proofs if the author specifically requests them when returning the copy-edited manuscript. Any changes made at this stage are sent to the printer by the production assistant. When there have been many changes, revised proofs may be requested from the printer.

4.6 **Advertising.**—The advertising division, which is administratively entirely separate from all editorial functioning, sells space for advertising. Advertisements must be assigned a specific position within an issue. The staffs of the AMA journals take care to ensure that there is no accidental link between advertisements and articles—for instance, that no advertisement for an antihypertension medication appears next to a report of research on hypertension. The AMA journals do *not* endorse any commercial products and scrupulously avoid any editorial content or structure that could imply such an endorsement.

4.7 **Makeup.**—For each issue, the production department gives the chief editor a list of manuscripts available for selection for that issue or subsequent issues. Once he or she has selected the editorial material for an issue, the senior production assistant merges the editorial and the advertising material, prepares the pages for the printer, and organizes the table of contents. This made-up issue is reviewed one final time before it is sent to the printer, along with instructions needed to produce the issue. Photographic negatives are prepared and proofread against the final copy before the issue is released for printing.

4.8 **Reprints.**—If reprints have been ordered, they will be shipped 6 to 8 weeks after the article appears in print. More reprints may be ordered at any time by contacting the Reprints staff.

4.9 **Corrections.**—Unfortunately, mistakes sometimes appear in print; fortunately, authors or readers usually call them to the journal's attention, and corrections can be published. In *JAMA*, corrections are printed at the end of the Letters to the Editor column. If the staff is notified quickly, the reprint film can be corrected before reprints are printed.

4.10 **Index.**—Although easily searched computerized databases may ultimately supplant them to some extent, indexes, organized by subject and author's surname, are published regularly in most medical journals. At *JAMA*, they appear in the last issues of June and December, at the end of the volume. New volumes begin with the first issues in July and January.

Artwork

April 3, 1993

The State of Illinois Building — JFK Assassination Conversation —

Mr. Zaid

Mr Gordon, Organizer Doug Carlson, Fellow Panelists - both groups - Fellow students of American History,

Good morning. Commend Doug Carlson for putting this Conference together & especially the choice of the ML King anniversary date.

I consider it an honor and a privilege to have the opportunity this morning to participate in this public discussion of facts and opinions some strongly held - about circumstances attendant to the death of John Fitzgerald Kennedy.

I agreed to organize this panel in order to promote the open confrontation, discussion & debate regarding this assassination in the hope that this kind of activity will help us as a country to move closer to a national consensus of voluntary understanding of what actually happened those awful days in November, 1963.

50 sec

Your program guide gives details about & some of the backgrounds and credentials of the panelists. I shall not waste your time repeating that information.

My three fellow panelists ~~[illegible]~~ are having their expenses paid to attend this presentation, they are not receiving a fee or an honorarium. We have no profit motive. I live in Chicago so — I am receiving neither fee, honorarium nor expense reimbursement.

In the back anteroom, I have provided (free of charge) a modest number of copies of the May 27, 1992 T&M that contains the Dennis Brea interviews with many principals and substantial numbers of my T&M editorial from Oct 7, 1992 and last week T&M that contains 2 more articles and one editorial on the subject.

I think it is safe to say that no one in this room was with Lee Harvey Oswald in the Texas School depository that November day; that no one here was in the President's Limousine in Dallas, was at the President's head in the Parkland emergency room administering primary surgical care, was in Air Force one on its way to Maryland or was a pathologist in the Naval Hospital at Bethesda responsible for the president's autopsy. If such person are here, please be recognized.

What do we know, what do we believe and what + when do we trust about the JFK assassination?

I believe it's safe to say that no one in this room stood next to the Dallas gunman who killed the President and observed it all. It's safe to say that no one in this room was in charge in the autopsy room in Bethesda that day in 1963.

So, we are all dependent on sources of information other than personal, real time observations.

And what are these sources?

1. Verbal statements from the people who were actually there — on the scene — those days
2. Written statements — past + present — from those same people the primary source participants

3. Bona fide physical evidence & its interpretation

4. Relevant experimental evidence

5. Her own knowledge about anatomy, medicine, surgery, pathology, forensic pathology, wound ballistics and what is scientific and what is not scientific

I wasn't in Dallas or Bethesda those days. I'm really not much of an expert in this thing at all. My role in this ~~thing~~ is that of a journalist along with Mr Dennis Breo of our staff. I have essentially no primary source information nor do I plan any. Whom do I trust?

I have known Dr Jame Hume — the principal autopsy pathologist — since 1957. to paraphrase Ronald Reagan — paraphrasing Lloyd Bentsen — I know Jim Humes — He is a friend of mine — I would trust him with my life, An outstanding general pathologist before + after 1963 — acclaimed by his peers — but never a fully trained forensic pathologist

Having from 1963 to 1968 — the US Attorney General appointed a 6 person Blue Ribbon Panel to study + re-evaluate the JFK autopsy. His study was repeated by Dr J. Boswell — the 2nd autopsy pathologist 4 of 6 members — unanimous support for the autopsy results and interpretation. A key member was the late Dr Russell Fisher — Chief Medical Examiner for the State of Maryland — probably the World's top forensic pathologist of his time. I knew Russell

Fisher. He was a friend of mine. I would trust him with my life. He examined two bullets from the rear 1979 - the Forensic Pathology subcommittee of the House Select Committee on Assassinations included 9 members. It voted 8 to 1 in support of the autopsy findings & basic interpretation. One of the members was Dr Earl Rose, the Forensic pathologist in Dallas in November 1963 whose legal responsibility it was to autopsy President Kennedy & who tried to stop the illegal movement of the body from Dallas. I have known Earl Rose since 1973 - He is a friend of mine. I would trust him with my life. He examined 2 bullets from the rear,

Another member of that 1979 subcommittee was Dr Charles Petty. Dr Petty is Professor of Pathology at the U of Texas Southwestern Medical School in Dallas TX. He head up the forensic science institute there which was built in large part because of the Dallas embarrassment over the assassination and their recognition of the need for autonomy forensic science. Dr Petty has been guest on this JFK issue for many years. This year he volunteered to write for JAM on this subject. Last week's JAM has his editorial which confirms and explains the single bullet theory. Charles Petty is arguably the top forensic pathologist in the World today. I have known

Chuck Petty since 1968. He is a friend of mine. I would trust him with my life.

These are the keys of trust — Jim Humes in 1963, Russell Fisher in 1968. Earl Rose in 1979 and again in JAMA in 1992, Chuck Petty in 1979 and again in JAMA in 1993. And then there is me.

To imagine or state that somehow these people we have been duped, or mislead, or are somehow part of a conspiracy to deny the truth on this issue for all ages ~~[illegible]~~ strains the vocabulary to find strong enough words to describe such ~~after~~ absurdity ~~absurdities~~. Such charges are somewhere among the descriptors — wild & crazy, off the wall, out in left field, incredible, insulting, or worse.

10

THE FINDINGS OF THESE INTERVIEWS WITH THESE RESPECTED PHYSICIANS MOST INVOLVED IN THE EMERGENCY CARE OF THE PRESIDENT IN DALLAS, AND THE POSTMORTEM EXAMINATION IN BETHESDA, MARYLAND ARE CAREFULLY DOCUMENTED IN 21 PAGES OF JOURNALISM IN THE MAY 27, AND OCTOBER 7, 1992 ISSUES OF JAMA.

THESE SPECIAL 16,000 WORD REPORTS WERE WRITTEN BY MR. BREO.

THE PHYSICIANS AGREED TO SPEAK WITH JAMA BECAUSE IT IS A RESPECTED MEDICAL PUBLICATION.

MOST HAD DECLINED INTERVIEWS FOR FROM 25 TO 28 YEARS.

DRS. HUMES AND BOSWELL SPECIFIED THAT THEY WANTED THE REPORT TO BE IN THE WORLDWIDE MEDICAL LITERATURE, WHICH OF COURSE JAMA IS.

THEY, AND DR. FINCK, STATED THAT THESE JAMA ARTICLES ARE THEIR STORY AND THAT THEY DID NOT PLAN TO GIVE FURTHER INTERVIEWS.

I STATED IN MAY 1992 AT THE PRESS CONFERENCE IN NEW YORK, THAT BASED UPON SOLID, UNEQUIVOCAL FORENSIC EVIDENCE AS REPORTED IN THE MAY 27 JAMA, I CAN STATE WITHOUT CONCERN OR QUESTION MY AGREEMENT WITH DRS. HUMES AND BOSWELL THAT PRESIDENT KENNEDY WAS STRUCK AND KILLED BY TWO, AND ONLY TWO, BULLETS FIRED FROM ONE RIFLE.

THE FIRST BULLET ENTERED THE BACK NEAR THE NECK AND EXITED THE FRONT OF THE THROAT.

THE ABRASION COLLAR AND BRUISING OF THE SKIN SURROUNDING THIS WOUND IS DIAGNOSTIC OF A WOUND OF ENTRANCE.

11

THE SECOND BULLET ENTERED THE BACK OF THE HEAD AND EXPLODED THE RIGHT SIDE OF THE HEAD, DESTROYING THE BRAIN WITH A SURELY LETHAL WOUND.

THE INWARD BEVELING OF THE BONE AT THE BACK OF THE SKULL AND OUTWARD BEVELING AT THE FRONT IS DIAGNOSTIC OF THE DIRECTION OF THE BULLET'S PATH.

THUS, BOTH BULLETS STRUCK FROM BEHIND.

NO OTHER BULLETS STRUCK THE PRESIDENT.

A SINGLE ASSASSIN WITH A SINGLE RIFLE FIRED BOTH BULLETS.

THE EYEWITNESS ACCOUNTS AND THE SCIENTIFIC FORENSIC EVIDENCE ARE INDISPUTABLE.

HERE ARE FURTHER SPECIFIC POINTS.

THE BODY WAS ILLEGALLY MOVED AFTER DEATH FROM DALLAS TO BETHESDA OVER THE STRONG PROTESTS OF DR EARL ROSE, THE RESPONSIBLE DALLAS PATHOLOGIST AND MEDICAL EXAMINER.

MURDER IS A STATE CRIME.

THE PATHOLOGISTS IN BETHESDA WERE, AS MILITARY PHYSICIANS, PROFESSIONALLY IN CHARGE OF THE AUTOPSY AND MADE THEIR FINDINGS INDEPENDENT OF GOVERNMENT INTERFERENCE AND IN GOOD FAITH AS MEDICAL PROFESSIONALS.

THE BODY WAS RECEIVED IN BETHESDA IN A BRONZE CASKET, NOT IN A BODY BAG.

THE BRAIN WAS IN THE HEAD AT THE TIME THE SCALP WAS REFLECTED AND THE CALVARIUM ENTERED.

THERE IS NO CREDIBLE EVIDENCE THAT ANYONE ALTERED THE STATE OF THE BODY BETWEEN THE DALLAS TRAUMA ROOM AND THE AUTOPSY.

12

SPECIFICALLY, THE TRACHEOSTOMY SITE WAS AT AUTOPSY, AS IT WAS AT DEATH.

THERE WAS NO CONSPIRACY AS REGARDS THE AUTOPSY, ITS FINDINGS OR ITS REPORT.

THE AUTOPSY FINDINGS CANNOT STATE WHICH ONE PERSON FIRED THE RIFLE; WHETHER THERE WERE OTHER SHOTS THAT MISSED; OR WHETHER LEE HARVEY OSWALD WORKED WITH THE NEW ORLEANS MOB OR THE CIA.

THE MOVIE, "JFK", IS PRIMARILY SKILLFUL FILM FICTION BUT IS A GRAVE INSULT TO THE MILITARY PHYSICIANS INVOLVED, AS WELL AS PATHOLOGISTS IN GENERAL, NAVY MEDICINE, AND A WHOLE LOT OF OTHER INNOCENT PEOPLE.

IN MY OPINION, THE BEST EXPLANATIONS FOR THE MOTIVATIONS OF THE MYRIAD CONSPIRACY THEORISTS ARE HIGH LEVELS OF NATURAL SUSPICION, DESIRE FOR PERSONAL RECOGNITION AND PUBLIC VISIBILITY, AND PROFIT, SINCE THIS HAS BECOME A BIG INDUSTRY.

WE ADD OUR VOICES TO THOSE WHO PETITION THE GOVERNMENT TO OPEN THE ARCHIVES TO SERIOUS STUDY AND TO WORK WITH THE NATIONAL MUSEUM OF HEALTH AND MEDICINE AT THE ARMED FORCES INSTITUTE OF PATHOLOGY IN WASHINGTON TO PLACE THE RELEVANT KENNEDY MATERIALS ON PERMANENT DISPLAY NEAR THOSE OF PRESIDENT LINCOLN FOR FULL VIEWING BY ANY AND EVERYONE.

WE HOPE THAT THE 1992 AND 1993 PRESENTATIONS AND DISCUSSIONS ABOUT THIS WILL HELP TO CALM THE ARDOR OF THE HONESTY

13

CONSPIRACY THEORISTS WHO HAVE SIMPLY NOT HAD ACCESS TO THE SCIENTIFIC FACTS.

WE FURTHER HOPE THAT AN ENTIRE GENERATION THAT HAS BEEN FED DOCUFICTION ON THIS MATTER, AS IF IT WERE TRUTH, WILL NO LONGER BE MISLEAD.

With + after that Press Conference in New York on May 19, 1992 came a Worldwide media hullabaloo, huge shouts of acclaim from many, shrieks of anger and pain from many others and a plethora of media appearances, newspaper + magazine columns, letters to the editor, telephone calls and even death threats.

The Doctors we interviewed clung tight to their pledge to give no further interviews despite massive media pressure.

On Oct 7, 1992 the FDA attempted to close the Case — with another Interview, letters, response to letters + an editorial — (handed out).

Did we close it out? No. But the protests following the Oct 7 publication were only 10% what they were in May. We clearly are winning this thing, & that brings us to last week's JAMA & todays program

In late March, 1993, JAMA will publish a new, original research article, an analytical critique of the letters we published in October and a new editorial by one of the World's top Forensic Pathologists who has never written on this before but who knows a lot about it (1). In addition, I have agreed to chair a panel at an Assassination Convention in Chicago on April 3, 1993 to encourage an open academic debate on these issues.

Dr Lattimer
Dr Wecht
Dr Micozzi

One of the panelists will be the Director of the National Museum of Health & Medicine in Wash DC, himself a Forensic Pathologist, who hopes to begin to achieve a national consensus on the JFK assassination