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IN THE COURT OF COMMON PLEAS
HURON COUNTY, OHIO

KENNETH M. STRONG,
Executor of the Estate of
Dolores F. Strong
73 Townsend Avenue
Norwalk, Ohio 44857

Plaintiff,

-vs-

DR. RONALD D. WINLAND
8400 Olentangy River Rd.
Columbus, Ohio 43214

and

DR. EARL McLONEY
257 Benedict Avenue
Norwafk, Ohio 44857

and

NORWALK CLINIC, INC.
c/o Statutory Agent,
Cornelius J. Ruffing
25 Christie Avenue
Norwalk, Ohio 44857

Defendants.

Case No. CVA-92-866

Judge Phillip M. White

The deposition of THOMAS ABRAHAM, M.D. taken under the provisions of the Ohio Rules of Civil Procedure, before Terri W. Sparkman, (CSR-2704), Certified Shorthand Reporter and Notary Public, at 252 East Lovell, Suite 358, East Medical Center, Ralamazoo, Michigan, on August 11, 1994, commencing at 2:30 p.m., pursuant to Notice.

APPEARANCES

IN BEHALF OF THE PLAINTIFF:

MICHAEL F. BECKER CO., L.P.A.
600 Standard Building
1370 Ontario Street
Cleveland, Ohio 44113
BY: JEANNE M. TOSTI

ON BEHALF OF THE DEFENDANTS:

JACOBSON, MAYNARD, TUSCHMAN & KALUR
333 N. Summit Street:
Summit Center
Suite 1600
Toledo, Ohio 43604-2619
BY: STEPHEN A. SRIVER, M.D.

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EXHIBITS

None submitted

PROCEEDINGS

MS. TOSTI: Would you swear the witness, please?

THOMAS ABRAHAM, M.D.

having been duly sworn by the Notary Public to **tell** the truth, the whole truth, and nothing **but** the truth, was examined and testified as follows:

MS. TOSTI: We would like the record to show that this deposition is being taken pursuant to Ohio Rules of Civil Procedure, and that this is a discovery deposition being taken pursuant to Rule 26 of the Ohio Rules for purposes of discovery only, and under cross examination to elicit expert medical opinion testimony from Dr. Thomas Abraham, relative to this case.

As this deposition is taken by agreement of parties, can we have a stipulation from defense that any defects in notice or service or the use of a Michigan court reporter is waived?

MR. SKIVER: Sure.

EXAMINATION

BY MS. **TOSTI:**

Q. Doctor, would you state your full name and spell your last name, please?

A. Thomas Abraham, A-b-r-a-h-a-m.

Q. What is your business address?

A 252 East Lovell Street, Kalamazoo, Michigan.

Q Now, Dr. Skiver has provided us with a curriculum vitae, and I would like to show you a copy of what I have. If you would, tell me if this is current.

A This is current -- yes, it is. It is more current than the one I have. This is current.

Q Okay. I would like to ask you a few questions about your curriculum vitae. Would *it* be helpful *to* look at this one?

A Sure.

Q You have indicated on your vitae that you did a residency at St. Joseph Mercy Hospital, is that correct?

A That is correct.

Q What type of residency did you do?

A An internal medicine residency.

Q How long was that?

A Three years.

Q Also on your vitae you have indicated a fellowship at the University of Arizona.

A That is correct.

Q What did that involve?

A Pulmonary medicine.

Q And below that there is listed a Parker B. Francis fellow; what was that?

A That is a fellowship, basically funding a fellowship for

pulmonary research I did in my second year, part of my second year.

Q Now, under board certification you have indicated that you are board certified in internal medicine?

A That is correct,

Q And you have a subspecialty certification in pulmonary disease and also critical care?

A That is correct.

Q What is required in order to obtain a subspecialty certification, beyond normal board certification in internal medicine?

A A fellowship and then passing a subspecialty board exam.

Q Is these a time period that you have to put in in a fellowship that is required by the board before certification, is it like a number of years, months, certain amount of research?

Most pulmonary fellowships are two to three years, and there are basic requirements, which I don't have off the top of my head.

Q So the two fellowships that you served, or rather the Parker B. Francis fellowship, would that be what then qualified you to become certified in pulmonary disease?

No, the Parker B. Francis Foundation fellow was concurrent with my fellowship in pulmonary medicine at the University of Arizona. That was a source of some of

the funding and I did some of the research my second year.

Q So that would have been what the board considered when they were deciding if you could be certified in pulmonary medicine, that particular fellowship?

A The fellowship in pulmonary medicine at the University of Arizona is the important one.

Q How about for critical care, what would be the requirements to become certified in critical care?

A At the time I took the boards you had to have a fellowship in one of several subspecialties. It could be pulmonary medicine, it could be cardiology, and then pass a subspecialty board. Critical care was a new specialty at that time with a new board.

Q Are you indicating that you took a test, then?

A Yes.

Q And then in addition you had completed a fellowship in a subspecialty, and that qualified you?

A Correct, plus practice experience.

Q Now,,you are currently a Clinical. Professor of Medicine at Michigan State University, is that correct?

A Correct.

Q What are your duties and responsibilities in regard to that particular professorship?

A Primarily to teach medical students, interns and

residents. I also coordinate the teaching curriculum in pulmonary and critical care medicine.

Q Do you do formal classroom teaching?

A Do some conference work and bedside round teaching,

Q But you don't have classroom responsibilities, as far as lecture and instruction?

A Correct.

Q As a coordinator of the pulmonary component of that program, what do you do?

A Basically I make sure that the material regarding pulmonary medicine is covered adequately and that the residents are getting appropriate experience, that the literature is updated, things like that.

Q You also note on your vitae that you are an instructor at Kalamazoo Valley Community College, and what are your duties and responsibilities in relation tu that position?

A Generally I end up giving one or two lectures a year to the respiratory therapy students.

Q Have you ever lectured or taught on the subjects of congestive heart failure or pulmonary edema?

In our discussions in rounds we often talk about those issues.

Q This would be informal discussions, though?

Most of them informal discussions. I may have talked at

a conference about that.

Q Would you have any outlines or notes from any of these discussions or lectures that you produced?

A No, I do not. Most of them are done spontaneously.

Q You have also indicated that you have some research activities on your vitae, major interests, I believe, major research interests?

A Most of those were back during my fellowship. I have not really done any research as a practicing physician.

Q So currently you are not actively involved in research?

A Correct.

Q Have you in the past done any research on the subject of congestive failure or pulmonary edema?

A No, I have not.

Q Okay. Do you have any type of publications or papers that are currently being prepared or have been submitted for publication and have not been published?

A No, I do not.

Q Have you ever had your deposition taken before, Doctor?

A Yes, I have.

Q In what type of a circumstance?

A I have had several depositions in cases regarding workmen's comp with patients of mine. I have also done a few depositiqns regarding malpractice cases.

Q Where you were consulted as an expert?

A That is correct.
Q I will ask you some more questions about those in a minute. The cases that you have acted a a medicolegal expert, how many times would you say that you have done that?
A I think to the best of my recollection I have done it three times.
Q How many have you done in the last year, would you say?
A None.
Q Of *the* three that you have done, what was the breakdown as far as for plaintiff or for defendant?
A All three were for the defendant.
Q Wave you ever given testimony in any case similar to the subject matter of this case?
A No, I don't believe I have.
Q Have you ever testified in open court as a medical expert?
A One time.
Q And what type of case was that?
A That was a case involving a pulmonary embolism.
Q And I take it -- was that one of the ones you had done for a plaintiff or defendant in a malpractice case, or was that one of your workers' comp cases?
A That was for the defendant.
Q Have you reviewed other *cases* for Dr. Skiver, other than

this one?

A One other case,

Q What type of case was th t?

A That was the pulmonary embolism case.

Q Okay. Have you reviewed cases for anyone else at Dr. Skiver's law firm?

A No, I have not.

Q Do you provide your name to any of the national services available throughout the country that does medicolegal reviews, offering your services for a fee?

A No, I do not.

Q How were you first introduced to Dr. Skiver?

I met Dr. Skiver many years ago when I was a resident and he was a resident a year ahead of me.

Q And where was that?

At St. Joe's in Ann Arbor.

Q How long did you work with Dr. Skiver?

We overlapped for over a year, and I worked directly with him for a couple months, I think.

Q Was that the residency you served for your internal medicine --

A Internal medicine, that is correct.

Q Okay. How would you term your relationship with him?

A Professional.

Q Did you have any type of social relationship with him at

all as friends?

4 No, we did not.

2 After you finished your residency did you have any further professional contact with Dr. Skiver?

A Not until that one case that he called me up about many years later,

2 When did you do that case, that was within the last year for Dr. Skiver, the pulmonary embolism case?

4 A couple years, two years ago. Was it?

MR. SKIVER: At least.

A Maybe more.

3 When were you first contacted by Dr. Skiver in regard to this case?

A I can't remember the date.

■ Approximately?

A A few months ago.

Q I believe that your report is dated April 11 of 94; is that any help in determining when you were contacted?

A Probably a little before that.

Q Several weeks or months?

A Probably a few weeks before. He asked me to review the case.

Q And when you were contacted, what assignment did Dr. Skiver give you?

A He just asked me to review the case and tell him what I

thought.

Q Doctor, what is your usual charge for doing a medicolegal review?

A 250 dollars an hour.

Q Have you ever been named as a defendant in a medical malpractice suit?

A Yes.

MR. SRIVER: Objection. Go ahead.

A Yes.

Q Is that suit currently pending --

MR. SRIVER: Just a continuing objection.

A There is a suit against our group that is currently pending.

Q Is there more than one suit?

A No.

Q Was that suit filed here in Michigan?

A That is correct.

Q In Kalamazoo?

A I think so, either Kalamazoo or a small outlying community.

Q Were you a treating physician in that case?

A No, I was not.

Q Consulting physician?

A No, I had nothing to do with that individual patient...

Q So in this instance, then, the suit is against the group

practice --

A Correct.

Q -- but not against you as an individual?

A That is correct.

Q What is the subject matter of the suit?

A They allege that an abnormal chest x-ray was not appropriately followed up.

Q Do you know who the plaintiff's attorney is in that case?

A No, I do not.

Q Do you know the name of the plaintiff?

A No, I don't. I don't know that, either. I have seen it, but I can't recall it.

Q Have you authored or coauthored any medical journal articles or textbooks chapters on the subject of congestive failure or pulmonary edema?

A No, I have not.

Q Other than the papers and abstracts and monographs listed on your vitae, do you have any additional publications?

A No, I do not.

Q Of the ones that are listed under the bibliography on your vitae, do any of these pertain to the subject of congestive heart failure or pulmonary edema?

A No, they do not.

Q Have you ever submitted any articles for publication in a journal of cardiology?

A No, I have not.

Q Doctor, you don't hold yourself out as a specialist in the field of cardiology, do you?

A No, I do not.

Q And you have never completed a residency for specialization in cardiology?

A No, I have not.

Q And you haven't done any research in the field of cardiology or published in any recognized cardiology journals, is that correct?

A That is correct.

Q Would you defer to the expertise of a cardiologist in regard to diagnosis and treatment of cardiac conditions?

MR. SKIVER: Objection. Are you talking about congestive heart failure, the subject of this matter, or coronary artery disease or what?

MS. TOSTI: I'm speaking in general, with regard to cardiac conditions in general.

MR. SKIVER: Any type of cardiac condition, okay.

A Not all cardiac conditions.

Q There are specific cardiac conditions that you would defer to a cardiologist?

A There are some that I might, yes.
Q In regard to congestive heart failure and pulmonary edema, would you defer to the expertise of a cardiologist in that area?
A In general not, unless there is some complicating issue that I felt I needed a cardiologist.
Q Can you give me an example of what those complicating issues might be?
A A person had severe valvular disease that might need invasive diagnostic testing, something like that.
Q What have you reviewed for your deposition today?
A I have not reviewed anything specifically for the deposition.
Q In regard to this case have you reviewed the medical records?
A I reviewed the medical records, yes.
Q Have you reviewed the depositions of any of the defendants in the case or plaintiff's expert?
A I reviewed the depositions of the two defendants, the plaintiff's expert and several nurses, I believe.
Q Have you reviewed the depositions of either the plaintiff or the plaintiff's daughter?
A I have not reviewed those.
Q In your review of this case for Dr. Skiver, did you refer to any textbooks or articles?

A No, I did not.

Q And I assume that is true for preparation for this particular deposition, that you did not review any textbooks or articles?

A That is correct.

Q Have you done any research into the medical literature relative to this case?

A No, I have not.

Q Have you consulted with any other physicians in preparation for this deposition, other than Dr. Skiver?

A No.

Q Do you have any personal notes or a personal file on this case?

A No, I do not.

Q Is there a textbook that is considered to be the leading textbook in the field of pulmonology?

A I don't think there is -- I don't consider any textbook a leading book or authoritative.

Q Is there one that is used frequently or one that you use in the clinical area in the teaching capacity that you have?

A There is not one particular textbook that I use or recommend.

Q You don't have a recommended text for the individuals that are serving a residency in pulmonology?

A Well, we don't have any residents or fellows in pulmonology, we have internal medicine residents, and they generally use the textbooks of internal medicine.

Q What would be a couple of the ones you have seen used by the doctors in your program?

MR. SKIVER: Objection, relevancy. Go ahead.

A Well, there are several textbooks of internal medicine that are available. There is Harrison's, Cecil's.

Q Let me stop you, Doctor. Is there any in the field of pulmonology, specifically pulmonology that are used?

A There are several textbooks in pulmonology that are available. Frazier and Peret is one, and there is a few other authors. There are several others. Baum is one. There are several texts available.

Q Is there a text that is considered to be the leading text in the field of critical care?

A There are several. textbooks, none that I know of as being necessarily a leading text or a better text.

Q Are there any that you refer to in your clinical practice?

A There is none that I refer to on a regular basis. I have looked at individual books occasionally.

Q Can you tell me what those might be?

A Would you believe me if I told you I don't recall the authors. I usually go down to the library, and there

are a couple new textbooks of critical care I have puffed out on occasion. I can't remember who the authors are now.

Q That is fine, Doctor, if you can't remember, just tell me you don't remember. We will go on to the next thing. What medical journals do you currently subscribe to?

A I subscribe to Chest, the American Review of Pulmonary and Critical Care Medicine and the New England Journal.

Q Do you have any association with the PIA Insurance Company?

MR. SKIVER: Objection. Go ahead.

A No, I do not.

Q Are you or have you ever been an insured of PIA?

A No, I have not.

Q Prior to accepting this case for review, did you have any contact with Dr. Winland or Dr. McLoney, did you know them either professionally or personally?

A Not at all.

Q Doctor, could you tell me what congestive heart failure is?

A Congestive heart failure is the inability of the heart to pump blood adequately, leading to increased pressures in the pulmonary vasculature.

Q And what are some of the factors that would put a patient at risk for the treatment of congestive heart

failure?

A People develop heart failure -- one of the most common is ischemic heart disease, coronary artery disease, significant or severe valvular disease, chronic obstructive pulmonary disease.

Q Any others that you can think of?

A Those are the major ones,

Q Would hypertension increase an individual's risk for the development of congestive failure?

A Hypertension can, yes.

Q How about diabetes?

A Diabetes leads to an ischemic heart, so *yes*, that could.

Q How about electrolyte imbalance?

A I'm not aware of any electrolyte imbalance leading to heart failure.

Q When a patient first starts to develop signs of congestive heart failure, what are the ones that are most commonly seen?

A Congestive heart failure can be manifested by shortness of breath, edema, sometimes just chronic -- sometimes fatigue can be a presenting sign of heart failure.

Q And then as the symptoms progress, are there any other symptoms or signs that would become evident?

A Well, those can become worse. People sometimes will wake up in the middle of night short of breath, and

those symptoms basically progress.

Q Is orthopnea associated or consistent with congestive heart failure?

A Yes, orthopnea can be seen in congestive heart failure.

Q Are **rales** considered to be consistent with congestive heart failure?

A It is consistent with. It is commonly seen in many, many things, but certainly one of the things is heart failure.

Q It wouldn't be unusual to find those symptoms we have just discussed, though, in a patient with congestive failure?

A No, it would not be.

Q Doctor, could you tell me what orthopnea is, what the mechanism is that causes it?

A Orthopnea is shortness of breath in the recumbent position. There is a couple different mechanisms. You can have orthopnea based on pulmonary disease. When an individual **lies** down, blood flow is redistributed to areas in the lung that are poorly ventilated and they become short of breath.

In congestive heart failure, similarly you can have redistribution of blood to areas that are poorly perfused -- I mean poorly ventilated, leading to shortness of breath, and pulmonary artery pressures can

go up in the recumbent position.

Q Then when the patient goes into an upright position they achieve some measure of relief from the shortness of breath if they have orthopnea?

A Correct, either pulmonary or cardiac orthopnea can be relieved in the upright position.

Q What is pulmonary edema?

A Pulmonary edema is the filling of alveoli, air sacs, with fluid.

Q And how is it differentiated from congestive heart failure?

A It is sort of the end stage of congestive heart failure, end in the sequence of the things that happen,

Q So would it be fair to say that that congestive heart failure and pulmonary edema are on a continuum, with congestive heart failure leading into pulmonary edema at the more advanced serious stage?

A That is correct, if you are talking about the cardiac cause of pulmonary edema. There are non-cardiac causes, but if you are talking about just the cardiac causes, that is basically severe congestive heart failure with flooding of the alveoli with fluid.

Q What are some of the signs and symptoms of pulmonary edema?

A Severe shortness of breath, severe tachycardia,

sweating. Often the patient will be coughing frothy sputum, sometimes pink colored.

Q Do you see wheezing with pulmonary edema?

A Occasionally see wheezing, yes.

Q What is the cause of the wheezing?

A It is thought that you have edema of the airways and that can lead to some narrowing of the airways and develop a wheeze. There are probably other mechanisms involved.

Q Elements of bronchospasm?

A Edema of the airway leading to bronchospasm.

Q Would you agree that pulmonary edema is considered to be a medical emergency?

A Carefully defined, not used in slang, but as sometimes doctor's use it, yes.

Q And that it would require immediate intervention, correct?

A Intervention of some type, yes.

Q And that a patient in pulmonary edema would require close medical management?

A Require medical management. What do you mean by close medical management?

Q That the patient would have to be watched very carefully for any changes in condition, and monitored very carefully to determine what the appropriate treatment

would be for the patient.

What do you mean by carefully? I'm not sure what you mean by the term carefully.

Q Would you agree that this patient would need observation on a continuous basis if they are in pulmonary edema?

MR. SKIVER: Which patient, a patient in general?

Q A patient in pulmonary edema would require constant observation to be watched for possible changes in condition?

A I think the patient would need to be frequently monitored by nursing personnel. How frequent would depend on the severity.

Q Can you give me at least a gauge as to what you mean by frequent?

A What do I mean by frequent?

Q Hourly?

A Hourly may be adequate, maybe more frequent than that.

Q Patients that have pulmonary edema can deteriorate very rapidly, can't they?

A They certainly can get worse in a pretty rapid sate. Yes, that certainly is possible.

Q How is pulmonary edema diagnosed?

A It is diagnosed clinically by the way I described the symptoms. chest x-ray is helpful in providing some

information. Primary a clinical diagnosis.

Q Would blood gases be useful?

A Blood gases may or may not be abnormal. There is nothing specific about blood gases that will tell you someone has pulmonary edema.

Q Would a chest x-ray be the definitive test for determining whether a patient has pulmonary edema?

A No, I don't think a chest x-ray is definitive, it is one piece of information.

Q Generally how is pulmonary edema treated?

A It is treated with diuretics, reduce fluid, get the individual to get rid of some fluid, Sometimes it is treated with drugs to decrease the resistance. If there is hypertension, that is treated. Primarily the initial treatment is diuretics.

MR. SRIVER: Just for clarification, we are talking cardiac here, correct?

MS. TOSTI: Yes.

Q As far as the diuretics, what type of diuretics are used to treat pulmonary edema?

A Most any diuretic. Furosemide, which is Lasix, is one of the more common ones. There are others.

Q How are those usually given, orally or IV?

A They can be given intravenously. Usually they are given intravenously in the hospital setting.

Q Is oxygen utilized in the treatment of pulmonary edema?
A In most cases oxygen is administered.
Q What about cardiac monitoring?
A Cardiac monitoring can be used.
Q Would you say that in most instances cardiac monitoring is used in the treatment of acute pulmonary edema?
A In severe acute pulmonary edema, I think that is probably true.
Q In most instances of pulmonary edema that you have seen clinically, is cardiac monitoring used?
A The way I use pulmonary edema, edema the way I described it, yes.
Q And is hemodynamic monitoring used in the treatment of patients with pulmonary edema?
A It can be.
Q And in most of the patients that you see clinically is hemodynamic monitoring used in the treatment?
A NO.
Q Would you agree that patients with pulmonary edema are at increased risk for cardiac arrhythmias?
A I think that is true.
Q And that would include increased risk for ventricular arrhythmias, wouldn't it?
A Any type of arrhythmia.
Q Would *you* also agree that ventricular arrhythmias can be

life threatening?

A I would agree with that.

Q So if a patient is diagnosed with acute pulmonary edema, wouldn't it be prudent to place the patient on a cardiac monitor to observe for arrhythmias?

A If the patient clearly had pulmonary edema by the criteria I discussed, I think that would probably be something that I would do.

Q Now, Doctor, you are currently engaged in active clinical practice, is that correct?

A That is *correct.*

Q How would you describe your current practice, is it limited to any particular patient population?

A No, it is not limited by patient population. I do pulmonary medicine and critical care medicine.

Q Do you do any general internal medicine?

A A smattering, usually by default. That is patients without a general doctor I will do some of the general medicine.

Q Is the majority of your practice confined to a critical care unit?

A The majority of my practice is -- well, perhaps 30 to 40 percent of my practice is critical care, the other is non-critical care pulmonary medicine, either the hospital *or* the office.

Q So you would be seeing pulmonary patients both in your office and also on a consult basis here in the hospital?

A Correct.

Q As far as the critical care patients, these are patients that are haspitalized patients that you are caring for?

A In the critical care unit, yes.

Q What is the size of your critical care unit?

A We have eight beds in the Medical Intensive Case, we also see some patients in the Cardiac Care Unit. I think there are seven beds in the cardiac unit.

Q Do you have any management or administrative responsibilities for the ICU?

A Not directly. My partner is the Medical Director of the Medical Intensive Care Unit, so we fill in for him when he is not around.

Q And how about with the cardiac unit, do you have any management responsibilities?

A I have no management responsibility in the cardiac unit.

Q As far as the patients that you see in the coronary care unit, are you called in these OR a consulting basis, or do you have any regular responsibilities as far as overseeing patient care in that unit?

A Patients I see these are usually either patients I have been called in to see in consultation or occasionally one of my patients will be put up there for lack of a

bed someplace else.

Q Do you see patients with congestive heart failure routinely in your clinical practice?

A Yes, I do.

Q How many patients in the last year have you had primary responsibility for management and treatment of congestive heart failure, just an estimate?

A A hundred.

Q Again, how many patients in the last year have you seen and had primary management responsibility that have been diagnosed with pulmonary edema?

A Oh, perhaps a dozen.

Q Now, these patients with pulmonary edema, were the majority of them in the ICU that you are describing?

A The ones with pulmonary edema, the majority were in the ICU, yes.

Q And the patients that you described with congestive failure, were these hospitalized patients or were these patients that you were seeing in your clinical practice in your office, the majority of them?

A Well, congestive heart failure patients I see in the office, I see some in the hospital. You know, most of them are in the hospital, some I treat as outpatient.

Q Have you had any patients in your critical care unit in the last month that have had congestive heart failure?

A I'm sure we have. I have been away for a couple of weeks, but we almost always have somebody with congestive heart failure.

Q Would these patients be on cardiac monitors?

MR. SKIVER: Objection. Go ahead.

A All of the people in the intensive care unit are on cardiac monitors.

Q And would any of these patients have been managed hemodynamically with Swan-Ganz catheters?

A It is not uncommon to have Swan-Ganz catheters in for various reasons.

Q Doctor, how many cases have you managed where there was congestive heart failure combined with dehydration and electrolyte imbalance?

A Well, I see a lot of congestive heart failure and electrolyte imbalances. I have seen a few people who have come in dehydrated and developed congestive heart failure.

Q When you say a few, can you put a number on that?

A That is hard.

Q More or less than five?

A Oh, more than that. Over the last year, ten, maybe. It is hard to say.

Q Would you agree that early detection and diagnosis of congestive heart failure increases the success of

cardiac asthma with a patient that has congestive heart failure?

A Again, I -- it is not terribly common. It happens, I see it every year a few times. It is not the most common presentation of heart failure.

Q What are rales?

A Rales are sounds that axe probably made by expanding alveoli or actually the -- actually, that is a very good question. There is a lot of debate as to what rales are. People have been debating that since I was a fellow, and what causes rales. It used to be thought it was the opening of the alveoli, but it is probably not the opening of the alveoli. It probably has to do with stiff interstitium, the area between the alveoli. They are crackly sounds that are heard in the lung,

Q And would you agree that it is not usual to find rales in the chest of a patient that has congestive heart failure?

A That is correct. Rales can be heard very commonly in all sorts of disorders, heart failure is one of them.

Q Would you agree that in severe congestive heart failure it is common to find rales in the chest?

A Yes, I would.

Q Infiltrations in the chest are usually seen on chest x-ray before rales are actually heard in the chest,

treatment?

A I don't have any data to support that. I don't know of any data that necessarily supports that.

Q What does dyspnea on exertion mean?

A Shortness of breath on exertion.

Q So it is short of breath or problems breathing that is associated with activity, correct?

A Correct.

Q And this particular type of shortness of breath is only seen when the patient is doing some type of activity, and that when they are at rest they are not having any difficulty breathing?

A By definition short of breath with activity is shortness of breath with activity.

Q So it would be an intermittent type of breathing problem?

A With activity.

Q Have you heard the term cardiac asthma before?

A Yes, I have.

Q Could you tell me what that means?

A Basically wheezing associated with heart failure.

Q And you have seen that associated with congestive heart failure?

A Yes, it can be.

Q And would you also agree that it is not unusual to find

isn't that correct?

A Infiltrates before the rales?

Q Yes.

A No, I think that is incorrect.

Q So it is your opinion that rales will be heard before you will see evidence of it on chest x-ray?

A I think that's true.

Q What is hypoxia?

A Low levels of oxygen in the blood.

Q And what is the effect of hypoxia on cardiac function?

A Hypoxia can depress cardiac function.

Q And would you agree that hypoxia increases the risk of ventricular arrhythmia?

A Yes, I would.

Q And would you an also agree that hypoxia can cause a patient to become confused?

A That is possible.

Q Have you, in your practice, seen patients who have developed hypoxia as a result of congestive heart failure?

A Pes, I have.

Q Would you agree that when a patient has multiple risk factors for congestive heart failure, and then develops shortness of breath, rales and wheezing, that the physician has a duty to rule out congestive heart

failure in that patient?

What do you mean by duty?

The standard of care would **require** that the physician rule out congestive failure, if that patient has known risk factors for congestive heart failure and is exhibiting shortness of breath, **rales** and wheezing?

I think with shortness of breath, rales and wheezing the patient needs to be evaluated. One of the things he would look for is heart failure.

Q So that would be within the differential diagnosis that the doctor **would** make?

A **with those symptoms, yes.**

Q And with multiple risk factors **for** congestive failure?

A I think that **is** part of it. With or without **risk factors,** I think that is in the differential diagnosis of those symptoms that *you* included.

Q So even without the risks factors, if the patient is exhibiting those signs and symptoms you would rule out **--**

A **If** we **are** talking about an 18 year old that is otherwise healthy and has those symptoms, I guess I would put it low on the list of things to look for. Again, as you describe those symptoms, heart failure has got to be the differential diagnosis.

Q Do you have an opinion **as** to whether Mrs. Strong had any

Q Do you agree that on admission to the hospital that Mrs. Strong had to be hydrated cautiously because of the risk of developing congestive heart failure while undergoing treatment for her dehydration and electrolyte imbalance?

A I think that is a fair statement.

Q So if Mrs. Strong developed signs of shortness of breath and breathing difficulties after admission, CHF would have to be included in the differential diagnosis for that patient?

A I would agree with that.

Q And would you agree that if she developed those symptoms, that Dr. Winland and/or Dr. McLoney would have the duty to rule out congestive heart failure, if breathing difficulties did arise?

MR. SKIVER: Objection. Go ahead.

A If she developed breathing difficulties, they had to consider all possibilities, heart failure would be one of them. I think they would need to proceed with their best judgment based on the clinical picture.

Q Doctor, when you have a differential diagnosis, that is a variety of diagnoses that could apply to a patient at a particular time, and then isn't the doctor's usual manner of proceeding to rule out the diagnoses and finally arrive at the most likely one?

risk factors for congestive heart failure at the time of her admission to Fisher-Titus Medical Center?

A She had mild coronary artery disease by a heart catheterization that was performed a year or two before. So yes, she had diabetes, she had peripheral. vascular disease, she had hypertension.

Q Didn't she also have aortic stenosis?

A The report was mild aortic stenosis. I don't know if that was considered by the cardiologist to be clinically significant aortic stenosis. I believe that it was not.

Q So based on the risk factors that you have just outlined, would you agree that Dr. Winland would have a duty to watch Mrs. Strong for signs of congestive heart failure after admission to the hospital?

A I think that he has a duty to observe her for many things. One of the things he needs to consider is congestive heart failure.

Q But in this instance, because of the risk factors, and because she was at higher risk than an individual without those risk factors, there was a duty to watch very carefully for congestive heart failure in this instance?

A As I said., I think the prudent doctor would observe her and treat her -- observe her for many things, heart failure being one of them.

A The usual thing to do is to examine the patient, assess the information you have, and based on the information you have make a decision on what the most likely problems are and what the most likely diagnoses are and proceed from there. You don't have to rule out every possible diagnosis. You don't have to do every conceivable test to rule something out.

Q Well, Doctor, when do you choose to do a diagnostic test to rule out one of those diagnoses included in the differential?

A When you make assessment of the patient based on your observations and make a clinical decision on what the appropriate action would be.

Q Now, would *you* agree that a chest x-ray would be helpful in ruling out congestive heart failure a5 a cause of breathing difficulties?

A I think it is helpful at times.

Q Isn't a chest x-ray the most frequently used initial diagnostic study when a physician wants to rule out congestive heart failure?

MR. SKIVER: Objection, calls for speculation. Go ahead.

A I have not seen any studies that said that. It is commonly used, but whether it is the most commonly used, I don't know.

Q In your practice is the chest x-ray most frequently used in initial diagnostic studies when a physician, or when you want to rule out congestive heart failure?

A It may be one of the most common ones, yes. You are talking about studies, other than examination?

Q I'm taking about diagnostic studies.

A Other than physical examination and history, x-ray is very common, yes.

Q In your review of the records, were you able tu determine if Mrs. Strong had a history of congestive heart failure prior to her admission to the hospital in November of '91?

A I saw some comments made about possible heart failure in the past. I had no objective data from the stuff that I reviewed that there was heart failure.

Q Did you find any indication in the hospital report that Dr. Winland changed or corrected his admission note or progress note opinion that Mrs. Strong had a history of congestive heart failure?

A I believe in one of the depositions, it may have been Dr. Winland's, there was some discussion --

Q Doctor, I'm asking in regard to the hospital records, if you found any discussion that he changed his initial opinion from what he stated in his admission note or his progress note?

A Opinion ragarding what, again? I'm sorry.

Q Regarding whether or not Mrs. Strong had a history of congestive heart failure.

I can't recall if there was a change. I remember reading a note saying she had to be hydrated carefully because of history of failure. That is what I remember. I don't remember if that was a change or not.

Q So you would agree that the medical record indicates, the hospital record indicates that Mrs. Strong had a history of congestive heart failure?

A I mentioned that note by Dr. Winland suggesting that she had a history of it.

Q Do you have an opinion as to what point in time Mrs. Strong began exhibiting signs and symptoms of congestive heart failure?

A Well, she --

MR. SKIVER: Do you want to look at the records?

A Let me take a look and see. I'm trying to think of the time here. At 7 p.m. on the 28th Dr. Winland described shortness of breath and hypoxia, chest x-ray which he interprets as consistent with CHF. So certainly at that point I would agree that she had CHF.

Q At any point prior to that, in your opinion, was Mrs. Strong exhibiting signs of congestive heart

failure?

A She had intermittent signs of shortness of breath, which conceivably could have been construed as heart failure. I think she received some Lasix the night before, so it is possible that she had some mild heart failure at that time.

Q In your evaluation of the chart was it your opinion that she was exhibiting signs of congestive failure prior to that 7 p.m. note that you just indicated?

A Well, she had some signs that would be consistent with failure and consistent with other things. I think the doctor on call felt that she may have had heart failure. I assume that is the reason he gave her Lasix.

Q And Doctor, if you did indeed believe that she was exhibiting signs of congestive failure, wouldn't it have been prudent to order a chest x-ray at that time to rule out congestive failure?

A Not necessarily, depending on the clinical situation, what the patient looked like, your examination of her, et cetera.

Q Since you have the medical records in front of you, I would like you to take a look at the nurses' notes on the morning of November 27th, 1991. If you could, tell me what you think was causing her dyspnea early in the morning that the nurses are charting.

MR. SKIVER: At what point in time?

MS. TOSTI: I believe it is the initial note the nurses write, where she states that the patient is complaining of feeling short of breath when she exerts herself.

MR. SKIVER: Is that at 0900?

MS. TOSTI: Yes.

A Well, I don't know what is causing that. She has a lot of pain, I guess as described. I don't know for certain what is causing that shortness of breath.

Q If Mrs, Strong had been having pain for several weeks prior to admission from her herpes zoster --

A I understand she was having pain.

Q And at the time of admission, was there any indication that she was having shortness of breath?

MR. SKIVER: Objection.

A I guess I would have to look back at the initial note, if there was mention of shortness of breath at the time. Is this 0900 on the 27th?

Q I believe it is the morning of the 27th.

A I don't recall seeing a comment about shortness of breath on admission. I would have to double check, go through it, but offhand I can't recall mention of that.

Q So, Doctor, if there is no indication in the chart that she had shortness of breath on admission, and this is a

new finding, you would agree that this is a change in her condition?

MR. SKIVER: Objection.

A If it really is a new condition. I mean, by definition if it is new, it is new.

Q I would be happy to wait while you take a look at the admission note and the emergency room record.

MR. SKIVER: That is assuming there are nu other -- I mean, the fact that she did not have chest pain. You are just saying based upon the record.

MS. TOSTI: I am asking him the source of complaint of shortness of breath, and if he has an opinion. If he doesn't have an opinion, that's fine.

A I don't know. Based on the information I have at this point in time, I don't know what was causing her shortness of breath. It could be many things.

Q Doctor, I would like you to assume that she did not have shortness of breath on admission, and there was no other documentation in the hospital record up to this point that she had any shortness of breath. If at this point in time, at 0900 on the 27th, she is now starting to complain of shortness of breath on exertion, would this raise a level of concern that she might be developing early signs of congestive heart failure?

A That could be one of the explanations for it, yes.

Q Doctor, take a look at the documentation on 1400 on that same page.

A Okay.

Q I believe the nurses have written, complaints of feeling wheezing and wheeze her in the left lower lobe on osculation, Do you have an opinion as to what was causing that particular problem?

A Again, a *lot* of things can be causing wheezing. If you are trying to get at is this cardiac asthma, general cardiac asthma is heard diffusely, not localized. Localized wheezing could be due to a lot of different things.

Q Okay. In this instance, and I would like you to assume again that that wheezing was not present on admission, and this was the first indication of wheezing, would that raise a Level of concern that she might be developing congestive heart failure?

A It might, it might. I'm not sure if that would be the first things that I would think of, but it might.

Q I would like you to take a look at the note at 1530 hours, and the nurses have charted, complains of not being able to breathe, wants her 02 repositioned with the head of the bed in high Fowler's, states she was better able to breathe now. Would you agree that that is a description of orthopnea?

A I would agree with that.
Q And would you also agree orthopnea is consistent with congestive heart failure?
A Yes, I would.
Q And would that raise your suspicion that she might be developing problems with congestive heart failure?
A It would.
Q Doctor, did you have an opportunity to review Mrs. Strong's intake and output records?
A Yes, I did.
Q And do you have an opinion as to whether or not she had an excessive positive fluid balance?
A I think that is very hard to say.
MR. SKIVER: Wait a minute. At what point in time?
Q How about on the 27th? I believe there is nursing documentation --
A I will have to look at that specifically.
Q This is the page I am interested in. I believe it is from the 27th.
A Well, it is difficult to say, because she is incontinent of urine, so it is hard to know.
Q If you take a look at the nurses' notes from that day, I believe that the nurses indicate one episode of incontinency of a, I believe it is, small amount of

urine.

MR. SKIVER: Just to clarify a point. Are we talking about the I and O for that date, or her general fluid status considering all things?

MS. TOSTI: I would like to talk about the I and O for that particular day.

MR. SKIVER: Okay.

Doctor, I would like you to assume that she was incontinent one time of a small amount of urine, without having it indicated as to what that small amount is. Looking at this fluid balance, which the nurses have charted an intake of 2,989 CCs, and an output of -- I'm not sure if that is 450 or 460. Would that particular fluid balance increase your suspicion, coupled with the things that we just reviewed, in regard to the shortness of breath that she had, that this lady might be developing congestive heart failure?

I think that is one thing you would have to consider. We don't know what the amount of incontinence is. She was supposedly dehydrated by a couple of observations, so she might very well be down a couple liters of fluid, plus her insensible loss, which could be, if she is breathing fast, could be as high as a liter. I think you can just look at that, that looks like it is way out of balance, but it may not be,

Q Take a look at her respirations that are charted for that day, and the nurses have indicated she is running between a respiratory rate of 16 to 20. Given that, and the other information that you have reviewed on this chart, looking at that fluid balance, and considering that she may have had one episode of incontinency of a small amount of urine, do you think that this fluid balance is abnormal for Mrs. Strong?

MR. SKIVER: I'm going to object. If we are talking about a point in time, or her general balance, that is another question, so we can just clarify the question.

Q I am speaking of the 27th, the fluid balance for the date of the 27th, and whether seeing this would have raised concern for this patient, considering that she has had signs and symptoms of respiratory distress, and in addition has a fluid balance of intake of 2989 and an output of 450 or 460.

MR. SKIVER: Objection to the words respiratory distress. Go ahead.

A I guess I would have to know, and it is hard not having seen the patient, how dehydrated I thought she was. If I thought she was two to three liters down, then that would not concern me at all.

Q I believe the emergency room physician described her as

mildly dehydrated.

A That could be a liter, with a liter of insensible loss, that is two liters, so she has got almost three liters in, 460 out, maybe she had another, I don't know how much, five, six, maybe she had a total of five or six out, so maybe a liter: or 500 CCs to the good. Maybe that is not so bad, again depending on how dehydrated he thought she was.

Q In your opinion, then, the discrepancy between the intake and output on this particular day wouldn't necessarily raise your level of concern that she might be developing congestive heart failure?

A Not necessarily. Again, depending on my clinical assessment at the time, which obviously I can't make just by looking at the records.

Q Would you agree from your review of the record that Mrs. Strong was alert and oriented at the time she was admitted to the hospital on the 26th?

A That is what it says, yes.

Q And that during the morning and through the afternoon of the 27th she continued to be alert and oriented?

A That is correct.

Q Do you have an opinion as to what caused her confusion on the evening of the 27th?

A That is hasd to say. Confusion is very common in the

hospital in elderly people. People get confused when they are in different environments. There is a slang term that the residents use called sundowning. It is not a term that I like to use, but residents use it. It is basically something seen in patients when the sun goes down. I don't know what caused her confusion at this time.

Q You are talking like a translocation syndrome or something?

A I have not used that term. I'm not sure what that means.

Q Mrs. Strong didn't have that problem the previous night on the 26th, is that correct?

A I don't know. I don't think she had that the night before. I would have to double check. Whether she did or not, again, it is hard to know exactly what caused it. There are many causes of confusion, many possible causes of confusion.

Q And she was admitted to the hospital a month previous to this and didn't have any problems with confusion, based on the record?

A I don't know that. I don't think I reviewed her previous admission, the prior admission,

Q Doctor, if you had a patient that had previously been admitted to the hospital a month before and had never

had any problems with confusion, and had come into the hospital and spent at least one night there and didn't have any problems with confusion, would you still feel that this lady may still be having this sundown syndrome that you described?

A That is possible, There are many possible explanations for her confusion, as well.

Q But in this particular instance you don't have an opinion as to what is causing her confusion?

A It could be many things. It could be her low sodium. She had a sodium that is low, and that certainly could explain it.

Q But, Doctor', she was admitted with a low sodium and was alert and oriented for more than 24 hours after admission, so is it likely that that would have caused her confusion?

A I think so, at night especially. She was alert and oriented the next day, *too,* so you have to say what came on and what went away. She was oriented, she was confused, and she was oriented. Something went, came on and then went away. It is hard to tell what that was.

Q At what point are you saying she was oriented?

A There are notes, I believe, by the physician saying she was alert. It says alert and confused at times.

MR. SRIVER: That is on the 28th?

A On the 28th.

Q If you take a look at the nurses' notes, the nurses chart throughout the day that she is confused, she is seeing things, she is talking out of her head.

MR. SKIVER: Which date are we talking about?

MS. TOSTI: On the 28th.

MR. SKIVER: What is the question?

MS. TOSTX: Dr. Abraham indicated she had an episode of confusion and the following day she was alert and orientsd. I'm saying I don't find that in the record, and I'm saying I would like him to show me where there is indications that this lady was back to being herself.

MR. SKIVER:, The record indicates confused at times, which of course means she was alert at times.

MS. TOSTI: I'm looking at the narrative notes.

MR. SKIVER: We are talking the 28th, the next day.

MS. TOSTI: You are looking at a one time assessment --

MR. SKIVER: Your question was show you some point in the chart, and here is a point in the chart. We can banter back and forth, but --

A I guess I would say her confusion seems to be

intermittent.

Q Would you agree that after she developed the confusion on the 27th, that she continued to be confused, at least intermittently, after that?

A Intermittently, and by definition she was not confused intermittently. (sic)

Q Is there any clinical significance to a patient that is observed picking at the air with their eyes closed?

A Well, I have seen that in alcohol withdrawal, but I don't think that was the case here. I don't know of anything specific, other than the individual being confused. Almost anything that causes neurologic dysfunction could do that.

Q Including hypoxia?

A It is possible.

Q Have you been told by anyone whether or not Dr. McLoney was the individual that ordered nasal oxygen for Mrs. Strong on the afternoon of the 27th?

A I believe I saw an order for oxygen. I can't recall who it was that ordered it offhand. Is there an order?

Q I was just wondering if you had been told in your review of the case as to who wrote that order.

A No.

Q When Dr. McLoney was called on the evening of the 27th at 10:35 at night, do you have an opinion as to whether

his actions that were taken at that time, if they were appropriate?

A Let me just double check and make sure which actions we are talking about.

Q I believe the nurses gave him a call, it was about 10:30 at night, and then he gave some telephone orders,

A I'm not sure I know which orders you are referring to. The orders were discontinuing the Vicodin, it looks like, and starting Darvocet. She was taking Vicodin, and certainly codeine can cause confusion, so I think that was an appropriate thing to do, stop the Vicodin.

Q Do you know when the last dose of Vicodin she had was?

A I would have to look. You probably know that.

Q Is it likely, if she hadn't had that in the last six hours, that it was causing her confusion?

A Since the confusion was so intermittent, I think it is certainly possible the Vicodin could be contributing to it, even if it had been given in a few hours.

Q Do you think at 10:30 at night that Dr. McLoney should have come in and taken a look at Mrs. Strong, rather than assessing her over the telephone, based on the nurse's information?

A Well, that is always a difficult: decision to make. Depending on the nurses that you are dealing with, and the information you are getting, things can often be

handled over the phone. It is a judgment call. A lot of it depends on the doctor's understanding of the nurses and the ability of the nurses to assess and his trust of the nurses. It is hard to say. It is a judgment call that he made based on the information he got from the nurses.

Q Would you agree that it is important for a doctor to know that a patient has risk factors for congestive heart failure before ordering any type of medication for the patient?

A *Any* type?

Q Yes.

A No.

Q In this instance do you think there is any problem with changing the medications of Darvocet and Vicodin without knowing that this patient also had risk factors for congestive heart failure and had been exhibiting breathing problems during the day?

A I see no problem with discontinuing the Vicodin and starting the Darvocet.

Q Given the fact this lady had exhibited breathing problems through the day, do you think that Dr. McLoney was correct to make assessments over the phone, rather than coming to *see* this patient?

Again, that is a judgment call that he made based on his

knowledge of the nurses. That is a judgment call we all have to make. I don't know the nurses, I don't know the quality of the work they do. I assume he was satisfied with that, so I would have to go along with that.

Q If you were managing this patient, would you have done anything differently?

A That is very hard to say.

Q In regard to this particular instance.

A Is this particular instance?

Q Yes.

A Again, depending on -- some of our nurses are very good and I would get enough information over the phone, then I think I probably could manage that problem over the phone, A lot of times the nurses will tell me they think I need to come in and see this guy, he is not looking good. You rely a lot on the nurses if you know them well, rely a lot on then.

Q I would like to you take a look at the nurses' notes from November 28 at 0400.

MR. SRIVER: Let's make sure we have the same page here, Jeanne. How does it start off?

MS. TOSTI: I may have the wrong number. It is the morning of the 28th.

Q Doctor, I would like you to take a look at the nurse's note written on the morning of 11-28 at 0400.

A Okay.

Q There is an indication there, I think in the second line of that note, that says restlessness accompanied with shortness of breath.

A Okay.

Q Would you agree that this is consistent with a patient that may be having dyspnea on exertion?

MR. STRIKER: Dyspnea on exertion?

A Yes.

MS. TOSTI: Yes.

A I don't know if there is much exertion there, but certainly it is consistent with dyspnea, because she is short of breath. She is in bed, right? I don't think she is really exerting herself much.

Q Accompanied with her restlessness?

A That is usually not what I think of as exertion when I talk about dyspnea on exertion. I wouldn't argue she is short of breath.

Q I would like you to take a look, I think it is on the next page of those notes, for 11-28 at 0603.

A Okay.

Q Do you have an opinion as to what was causing Mrs. Strong's confusion, agitation and shortness of breath as documented by the nurses at that time?

A 6:30 in the morning? Well, again, many things could be

contributing to it. Electrolyte disturbance, drugs, possibility of congestive failure could be leading to those symptoms.

Q Doctor, when you say drugs, I would like to know specifically what drugs we are talking about.

A Like Vicodin, which was the -- I don't know the last time she got it, but -- she had Demerol and Vistaril earlier, and I don't know if she had any of that. Certainly pain can cause a little confusion at times, as well, There could be a multitude of factors. It is hard to be certain which one, or pin down any one particular factor that was totally responsible for those symptoms.

Q To your knowledge did she receive any type of pain medications during that night, from 11-27 to the morning of the 28th, any medications that would contribute to her shortness of breath or her confusion?

A Let me look here. It is hard to read the dates.

MR. SKIVER: If you have a sheet that applies, Jeanne, it might be helpful.

This one, I believe, is for the 27th, if you look at the top of the page. I believe this is the 28th, because this is the day she --

MR. SKIVER: Why don't you just flip it around? That might be easier.

A This is the 28th, this is the 27th?
Q Yes.
A That is Vicodin, that is Vicodin, and she got some at whatever time this is. What time is that?
Q Nine o'clock at night, 2100 hours.
A That is what those numbers mean? All. right. She got that at 2100.

MR. SRIVER: You have to go to the next page to find out the next day.

A I guess that is the last one I can see that Darvocet -- Darvocet actually occasionally can cause confusion, I think. It is probably not as common as with some others, but I think it can. She got some Valium at six, and conceivably that could do it, as well,
Q That was in response to the call to Dr. McLoney.
A Okay. At five o'clock the Darvocet could have conceivably contributed. There are a lot of contributing factors. I'm not sure you can say any one thing for certain caused it.
Q Would you agree looking at the nurses' notes, that from the 27th to the morning of the 28th that there appears to be some type of deterioration in Mrs. Strong? The evening before she starts out alert and oriented, becomes slightly confused, and during the night we have a patient that is having nightmares and continues to

have respiratory difficulties that are charted by the nurses?

A Yes, she certainly is having trouble that night.

Q And we get to a point when the nurses call Dr. McLoney again at six o'clock in the morning, telling him she is confused, she is agitated, and she is short of breath?

A Right.

Q Given that progression of symptoms -- would you agree there is a progression of symptoms?

A There appears to be, yes.

Q Would you agree that this should raise the level of suspicion that this lady may be developing congestive heart failure?

A I think that would be one of the things you would have to consider strongly, *yes.*

Q You would agree that Dr. McLoney should have been considering congestive heart failure in his differential diagnosis at six o'clock in the morning when he was called?

A I think probably he did. Yes, I would agree with that.

Q Do you have an opinion, and you may want to look at Dr. McLoney's orders from six o'clock in the morning on the 28 28th, do you have an opinion as to whether or not Dr. McLoney at six o'clock met the standard of care in regards to his actions after those symptoms were

reported to him?

A Well, he gave her Lasix, which I think is appropriate, and I have no problem with that. The Valium, you could argue whether that needed to be given or not. At two milligrams, I don't think that is a big issue, I think he must have been considering heart failure, because he gave her a diuretic.

Q If he was considering heart failure, wouldn't it have been prudent at that point to order a chest x-ray for this patient?

A Not necessarily so. If he was considering heart failure and felt that was a likely diagnosis, I think it is reasonable to treat her with a diuretic and see what kind of results she had.

Q Considering this lady was at risk for congestive heart failure, and Dr. Winland had said she had to be hydrated very carefully, once she started developing these symptoms of shortness of breath, wouldn't it have been prudent of Dr. McLoney at that time to order a chest x-ray?

MR. SKIVER: Objection, asked and answered.

A I'm agreeing that he probably thought she had heart failure. The diagnosis he made is certainly the diagnosis he treated. I'm not sure an x-ray would have added a lot to that. If she didn't respond by

improving, that is something that the next step might have been to get an x-ray.

Q Lasix is a potent diuretic, right?

A That is correct.

Q And if Lasix is indicated, doesn't that mean that Mrs. Strong was in fluid overload at that point?

A Well, I think that is probably what he was concerned about, heart failure, and that is why he gave the Lasix.

Q Do you have an opinion as to why this Lasix was given IV rather than P.O.?

A I think most people in the hospital give it IV. It works faster, it is probably more effective when given as IV.

Q Because it was given at that time, would that be an indication that this was the type of situation that needed to be treated immediately.

MR. SKIVER: Objection, calls for speculation.

A I don't know what was in his mind at the time. I think once he made the diagnosis, he wanted to treat it properly,

Q Would you agree that in this instance there was an urgent need to give Lasix?

I think it needed to be given promptly, and I believe that is what happened,

Q And what type of a response did Mrs. Strong have to the

Lasix that was given, if you know?

A I understand she clinically improved, from my recollection of reading the nurses' notes. At 6:30 she was resting more comfortably, color pink, skin warm and dry, breathing easier, 02 continued. So she seems to have responded clinically to that.

Q So would that be an indication, then, that Mrs. Strong likely was developing congestive failure, and that the Lasix relieved some of the fluid load and improved her condition?

MR. SKIVER: Objection.

A It could be that, it could be that the confusion was maybe due to something else, and the Lasix was irrelevant. It is hard to know for certain. She got the Lasix and she seemed to improve, so that would probably maybe reinforce a diagnosis of heart failure.

Q Isn't it likely that if a chest x-ray was done that morning at 6:30, that there would have been evidence of congestive heart failure on it?

MR. SRIVER: Objection.

A I don't know what the x-ray would have shown.

Q But, Doctor, isn't it likely it would have shown congestive heart failure, given the improvement in her symptoms after the Lasix?

MR. SKIVER: Objection, asked and answered.

Go ahead.

A I can't say it is likely, I don't know what it likely would have shown.

Q I would like you to take a look at Dr. Winland's orders that he wrote on the morning of the 28th, I think it is at about 8:30 in the morning. They are not timed, but I believe he was in in the morning.

A 11-28?

Q Right, the ones immediately after the telephone orders that were given by Dr. McLoney.

A Okay.

Q Now, on the morning of the 28th were Dr. Winland's orders, to restrict fluids to 500 CCs a shift and to reduce the IV rate to 30 CCs an hour, an appropriate and adequate response to Mrs. Strong's condition?

A I think so, yes.

Q And should congestive heart failure have been in Dr. Winland's differential diagnosis at that point in time?

A I suspect that it was, based on these orders.

Q Why, in your opinion, if you have an opinion in regard to this, did you think Mrs. Strong needed a fluid restriction?

A Well, as we talked about treating heart failure, you want to get rid of fluid, so the less you put in the less you have to get out. At this point if you felt she

was in failure, then the less you put in, the less you would have to try to get out.

Q Would you agree that Mrs. Strong was at high risk for complications if she did experience a fluid overload?

A I'm not exactly sure what you mean by that question.

Q That she would be at high risk for developing complications if she should experience fluid overload?

MR. SKIVER: You just reasked the same question,

A I don't understand what you mean by that question,

Q Would Mrs. Strong, given her risk factors that she came into the hospital with, and given the fact that Dr. Winland had reported that she had to be hydrated cautiously, if this lady developed a fluid overload, would she be at high risk for developing a complication such as pulmonary edema or severe congestive failure?

MR. SKIVER: Objection, go ahead.

A I'm still not sure I understand what you are trying to get at. He stated in his note that he thought she needed to be hydrated carefully, and --

MR. SKIVER: If you don't understand the question --

MS. TOSTI: Let me rephrase it, and I apologize if it was inartfully phrased,

Q This particular patient, if she developed a fluid

overload, would have to be watched very carefully because she has an increased likelihood of developing a complication than someone who did not come into the hospital with these same risk factors?

A What complications are you talking about?

Q complication of congestive failure, complication of pulmonary edema, possible complication of arrhythmias.

A We are talking about heart failure. You are saying if she developed a heart failure, is she at increased risk for developing heart failure? It appears they are treating what they suspect is heart failure.

Q Perhaps my phrasing pulmonary edema as a complication of congestive heart failure is incorrect, then. If this lady has already begun to develop signs of fluid overload, this is something that would raise concern about her condition and her treatment, would that be correct?

A I think they are concerned, that is why they are treating her.

Q Would you agree that because she has now had signs of fluid overload, that this would be a lady that you would have to watch very carefully, even more carefully than what had happened up to this point in time?

MR. SKIVER: Objection.

A Well, it looks like she they had been watching her

pretty carefully, The nurses had been monitoring her pretty frequently. I don't see that she needs to be watched any more carefully. I think she needs to be evaluated as her response to therapy and decisions made as time goes on, what to do next. It looks like she has developed heart failure and they are treating it.

Q Wouldn't the level of concern for this lady be increased because of the fact we now have evidence of fluid overload?

A I'm not sure what you mean by level of concern, I mean, how worried the doctor would be? I'm not sure what you mean by level of concern. I think they are concerned and they are treating it, they are managing their concern by treating it, I think, appropriately. I'm sure, the nurses are going to watch closely, as they have been doing the night before. I'm not sure what you mean by concern. It looks like there is a lot of concern.

Q But would you agree at this point in time, from the orders that Dr. Winland has reported, that it would indicate that there was a concern for fluid overload?

A I think that is what they were trying to treat, yes.

Q And., Doctor, wouldn't a chest x-ray at this point in time have been helpful in determining whether or not there was any type of congestive failure that was of significant levels of this lady?

A A chest x-ray might have added some information, it might not have added any useful information. I'm not exactly sure what it would have shown, if it would have shown failure that would just confirm what they thought was going on.

Q Doctor, do you have an opinion as to whether or not she was in failure the morning that Dr. Winland saw her?

A I think she was probably in some heart failure the morning he saw her, yes.

Q Now, in the nurses' assessment on the morning of the 28th, the nurses indicate that Mrs. Strong developed some slight ankle edema, and I would like you to assume that this was a new finding that she did not have at the time of admission, or up until that point in time. You would agree that this is a sign that is consistent with congestive heart failure?

A Yes, I would.

Q Okay. The fact that she is exhibiting an additional symptom of congestive heart failure, would that be an indication that her congestive heart failure was progressing to a more severe level?

A Well, if she didn't have it when she came in, and I don't think she probably did, and she has it now, then she has progressed from not having it to having it. She is showing some of the signs of having it. The edema is

probably one of the first objective signs that she had heart failure, *congestive* heart failure, so yes, I think that is a sign of congestive heart failure.

Q Wouldn't this be a patient that you would want to put in the intensive care unit in order to watch her carefully?

A Not necessarily. I treat many patients with heart failure on the floor.

Q With patients that also have dehydration as well as electrolyte imbalance?

A Sure.

Q Is it your opinion this lady could continue to be treated on the floor, based on what we have discussed so far in regard to the signs and symptoms she is exhibiting?

A I think so. Again, that is a judgment call, depending on the nurses and the level of nursing coverage, et cetera. Yes, I think taking care of heart failure on the floor is perfectly legitimate. I don't know that there is anything that could have been done in the unit they don't do on the floor.

Q What methods are available to investigate or evaluate whether pulmonary edema is present? How would you determine whether a person was in pulmonary edema?

MR. SXIVER: Are you talking about studies or --

Pulmonary edema as distinguished from congestive heart failure?

Pulmonary edema,

Well, pulmonary edema, by definition, as I said, is alveolar filling, so a chest x-ray is useful in that respect, It can give you some suggestion of that. Clinical exam, as I said before, tachycardia, profuse sweating, severe dyspnea, frothy sputum, pink-tinged sputum. Those are the things that are most commonly used to diagnosis pulmonary edema.

Doctor, is it correct that you don't have to have all of those symptoms present in order to have a patient in pulmonary edema?

Well, pulmonary edema is a pretty specific diagnosis, and it really is the very end. stage of heart failure, so most of those should be present to make the diagnosis of pulmonary edema rather than just simple heart failure.

Did Mrs. Strong have all of those symptoms when she was eventually diagnosed with pulmonary edema?

I don't know. Well, after her -- I don't believe I saw all those symptoms recorded. I would have to look back and see, but I don't recall all those being documented, I don't know if they were there and not well documented or she just didn't have all those.

Have you seen patients in your clinical practice with

pulmonary edema that didn't have frothy sputum?

MR. SKIVER: Are we talking about cardiac pulmonary edema or non-cardiac?

MS. TOSTI: Cardiac.

A Yes, but they also have many of the other things. You don't have to have everything, but you need to have most of those things. Pink, frothy sputum is common in pulmonary edema. Tachycardia, diapiresis, severe dyspnea are all very common in pulmonary edema.

Q Have you also seen confusion with pulmonary edema?

A Sure, yes

Q And how about extreme anxiousness and agitation?

A Well, people can be very agitated when they are at that stage, yes.

Q How quickly can pulmonary edema develop?

A Depending on the cause. If you have acute myocardial infarction it can happen very, very quickly.

Q Doctor, are most patients that develop acute pulmonary edema treated in an ICU setting?

A Acute pulmonary edema most of it is treated in the ICU. By my definition of acute pulmonary edema, yes.

Q When you put a patient into the unit that has pulmonary edema, what type of treatment is usually given to the patient?

A Diuretics, afterload reduction, oxygen. Those are the

primary treatments. Very severs they may require mechanical ventilation.

Q You are familiar with hemodynamic monitoring with Swan-Ganz catheters?

A Yes, I am.

Q Would you agree that hemodynamic monitoring can give you some very precise information that tells about the heart function, such as measurements reflecting output and venous pressures?

A Actually I think hernodynamic monitoring is over used and can give you some misleading information. It can give you some useful information, but can be misleading, as well. When you say very precise, it depends on the setting and who is using it, the experience of the people with it. It can be very precise or can be very misleading, but it can give you some information.

Q Would you agree that increased venous pressure and changes in cardiac output are recognized much more quickly when a patient is hemodynamically monitored, as compared to someone who is not sonitored hemodynamical1y?

A Vencus pressure and what?

Q Vencus pressure and cardiac output, changes in cardiac output?

A Right, if you don't monitor either one of those, cardiac

output or venous pressure, then you are not going to know what they are, so that is true.

Q When a patient is at high risk for developing congestive heart failure, you would watch for signs of decreased cardiac output, isn't that correct?

MR. SKIVER: Are *you* talking about with the use of a Swan-Ganz or just generally?

MS. TOSTI: Talking about generally.

Q Clinically, a patient at risk for --

A A patient's risk for decreased cardiac output are subtle and often cardiac output isn't down in heart failure. A low cardiac output state would not be something that I would be looking for in somebody with acute heart failure. People with very chronic end stage cardiomyopathy might have a low output state. That is a difficult thing to clinically assess. Cardiac output is very difficult to clinically *assess* in most people.

Q You indicated that in treatment of patients with pulmonary edema, one of the things you would be concerned about would be afterload. Are most patients that are treated in the intensive care unit for pulmonary edema treated with Swan-Ganz catheter and hemodynamic monitoring?

A No.

Q How are you making these determinations of afterload,

then?

A I said afterload reducers.

Q You are speaking of medications, then?

A Yes.

Q This would not be true of any type of readouts from hemodynamic monitoring, based on that?

A Sometimes they are used. They are not always used, and afterload reducers aren't always used.

Q In the majority of patients with acute pulmonary edema initially, do you use in your practice hemodynamic monitoring?

A I think initially in acute pulmonary edema, the answer is no. I think most of the cardiologists here do not put Swan-Ganz immediately in someone who is in acute pulmonary edema. The first thing is it is hard to lie them down to do it.

Q Do you think that once, in this case, Mrs. Strong was diagnosed with pulmonary edema, that she should have been moved into the intensive care unit?

A When a diagnosis of pulmonary edema was made?

Q Yes.

A I think she should be moved into the intensive care unit when her clinical situation warranted it, that is when they couldn't manage her well on the floor. By my definition of pulmonary edema, she probably should have

been in the intensive care unit. I didn't see all those signa and symptoms in her, so I don't know if it was necessary to move her into it. By my definition of pulmonary edema, yes, most people are in the intensive care unit.

Q When would a Swan-Ganz catheter be indicated for a patient with congestive heart failure?

A I think you use a Swan when you have a question, that is you need a question that needs to be answered with hemodynamic monitoring. You don't know something, you are having a hard time deciding whether they are in failure or not, or you feel you do need to use afterload reducers, and you want to assess the effect of it. You have to have a specific reason to do it. You don't do it just because somebody is in failure, just because somebody is in pulmonary edema.

Q Would that same answer go for a patient of pulmonary edema?

A Yes.

Q Now, in this instance, because Mrs. Strong had dehydration as well as electrolyte imbalance, plus the risk factors we discussed --

MR. SKIVER: At what point in time?

MS. TOSTI: At the point she is diagnosed with pulmonary edema on the 28th --

MR. SKZVER: We were talking about being dehydrated, we are talking about being fluid overloaded,

MS. TOSTX: Her admitting diagnosis was dehydration and electrolyte imbalance. I think we have discussed the fact there was evidence of fluid overload on the morning of the 28th, and that Dr. Winland's and Dr. McLoney's orders reflected a management of a fluid overload problem.

Q Right, Doctor?

A Yes.

Q Given the fact we now have a patient that is in fluid overload, exhibiting signs of congestive heart failure, and also has an electrolyte imbalance, wouldn't this patient be one that would benefit from management in the intensive care unit with a Swan-Ganz catheter?

A No, I think the appropriate thing would be to treat her with diuretics, and if there was a specific question, I mean if the doctor really didn't know or if they didn't know if she had heart failure, then it might be appropriate. If they felt they were pretty clear she had heart failure at that point in time, I think treating it clinically is very appropriate. If problems develop and it was unclear at some Later date if she was responding to therapy appropriately, or these is another question that needs to be answered, then that would be

the time to place a Swan. I always tell my residents a Swan-Ganz catheter is never an emergency procedure.

Q Just so I'm clear, it is your opinion, then, it was within the standard of care to manage this lady on the night of the 28th OR a general medical floor, rather than move her into an intensive care unit?

A Yes.

MR. SKIVER: You are talking about prior to the arrest, of course?

MS. TOSTI: Right.

Q At the point when Dr. Winland had evidence of pulmonary edema and arterial blood gases, but before her arrest.

MR. SRIVER: I'm going object to throwing in he had evidence of pulmonary edema prior, because there was no evidence of that prior to the arrest. His diagnose in the chart was congestive heart failure.

A If you are using the term pulmonary edema based only on the chest x-ray, I wouldn't agree with that.

Q Why don't you tell me what your disagreement is, then. If there is evidence of pulmonary edema on a chest x-ray --

A I don't think pulmonary edema is a radiographic diagnosis.

Q Okay.

A I think x-ray is one piece of information. It is a

clinical diagnosis. A Swan-Ganz catheter can give you information measuring the pressures, which would be another piece of confirmatory evidence. I don't think you need to do it right then. I don't think there is any one piece of information that makes a diagnosis of pulmonary edema. A chest x-ray is not solely a radiographic diagnosis, and I would not accept a diagnosis of pulmonary edema based solely on an x-ray.

Q But you agree that Dr. Winland at that point in time had a diagnosis of congestive failure?

A Yes.

Q Do you believe patients with acute episode of congestive heart failure should be placed on a cardiac monitoring for at least 24 hours to determine if arrhythmias are present?

A Again, that is a judgment call. I don't think it is mandatory.

Q Did *you* have an opinion as to whether *Mrs.* Strong was at increased risk for cardiac arrhythmias, once she was diagnosed with congestive failure by Dr. Winland on the evening of the 28th? I don't know that she had -- I mean, there is always a risk for arrhythmias in people with heart disease. Whether that required a cardiac monitor or not, I'm not sure that absolutely was required, to do a cardiac monitoring. Many people

would, and I certainly wouldn't argue with doing it.

Q Would most people?

A Well, I don't know if most people would. I think many would.

Q What would the standard of care call for in this instance?

A I think the standard of care would not mandate that she be monitored at that point in time.

Q If the patient had a diagnosis of pulmonary edema, should the patient be placed on a cardiac monitor to watch for cardiac arrhythmias?

A Pulmonary edema, as I said, pulmonary edema by my definition, is treated in the intensive care unit, and all those people are monitored, so the answer is yes.

(Brief recess)

Q Doctor, do you have an opinion as to what caused Mrs. Strong's arrest on the night of the 28th?

A Again, I don't know for certain what caused her arrest. She may have had a myocardial infarction, she may have had a pulmonary embolism. She may have had a cardiac arrhythmia. It is hard to know exactly what caused it.

Q Mrs. Strong lived for about a month after the arrest, and was treated in the hospital. Was there any indication in the records that you reviewed that she had a myocardial infarction?

A I didn't see any evidence regarding that, although I did not see anything that ruled it out.

Q Did you take a look at any EKGs that were done post-arrest?

A EKGs weren't helpful in diagnosing it.

Q Do you agree with what the death certificate indicates, that the primary cause of death was anoxic encephalopathy?

MR. SKIVER: Let me interpose a question here. I don't think he had all the nursing home notes or anything like that to review.

MS. TOSTI: Has he had the death certificate?

MR. SKIVER: I don't know if he has got the death certificate.

Q I can show you the death certificate.

MR. SKIVER: As to what happened in the nursing home, I don't think he has that.

A I think that is probably fair, You could argue cardiac arrest first and anoxic encephalopathy is a complicating factor of that, but I think that is reasonable.

MS. TOSTI: Off the record for a second.

(Brief discussion off the record)

Q Do you have an opinion as to what point in time, if any, prior to her arrest, that Mrs. Strong's condition was irreversible?

A Well, certainly her chronic disease was irreversible, her chronic vascular disease, her coronary disease. So the chronic disease I think is irreversible. The heart failure sometimes can be reversible, and it can be irreversible. I'm not exactly sure which condition you are referring to.

Q I'm speaking of the congestive heart failure, and whether you have a opinion, and if you don't that's fine, if you have an opinion as to what point in time, if any, prior to her arrest, that her condition was irreversible?

A Well, sometimes congestive heart failure is never irreversible. I don't know at any point in time. I wouldn't be able to say at this point in time it was reversible or irreversible.

Q So you do not have an opinion as to whether or not Mrs. Strong's condition was irreversible prior to her arrest?

A By condition *you* mean congestive heart failure?

Q Yes.

A I don't know if that congestive heart failure was reversible or not prior to her arrest.

Q If Mrs. Strong had not suffered a cardiac arrest, do you have any opinion as to her life expectancy?

A That is always very difficult to say. She has

significant chronic disease, and I would think that probably her life expectancy would be fairly short. You are always on thin ice when you guess how long people are going to live, but I would say less than five years would be a reasonable estimate.

Q What is the basis of that opinion?

Clinical experience.

Q Do you have any research that you can cite me to that would support that?

Off the top of my head, no. There is some data that I can remember from a while back suggesting that the development of cardiac, heart failure, with significant valvular disease, has a short life expectancy. I don't know that her valvular disease was that severe. People with diabetes and peripheral vascular disease and coronary artery disease have a high risk -- have a high mortality.

Q Do you know generally what a life expectancy would be for a woman of Mrs. Strong's age and race?

A Are you talking about the standard life tables?

Q The standard life tables.

A Offhand, I don't know.

Q After Mrs. Strong's arrest, and the care she received at Fisher-Titus, do you have an opinion whether she was able to initiate any voluntary movements or communicate,

or whether she was aware of he surroundings?
From the notes that I read, and I didn't read those in great detail, because I didn't think that was a major focus, she was severely impaired, from what I understand, and not very communicative.

Q If Mrs. Strong was able to follow simple commands and initiate voluntary movements, would this be an indication that she was conscious or aware of her environment?

MR. SXIVER: Objection.

. If she was able to respond?

! Yes.

. If she was responding in a meaningful way, that --

! If she was following simple commands, that would be an indication she was aware at least to some degree of her surroundings?

\ To some degree.

2 Do you have any criticisms of he care that was given to Mrs. Strong by Dr. Winland and Dr. McLoney?

A No.

Q Doctor, have we covered all of your opinions relevant to the appropriate standard of care to be applied in this case?

A 1 believe so.

Q Do you have any additional opinions that we have not

covered?

A No, I don't believe so.

Q Doctor, you had an opportunity to evaluate several chest x-rays, is that correct?

A No, I have not seen any chest x-rays.

MS. TOSTI: You did make a request for chest x-rays in this case.

MR. SRLVER: I don't think I sent them to him. He hasn't seen them, I don't think. Obviously --

A No, I have not seen any x-rays.

MR. SKIVER: I don't know if we got them.

MS. TOSTI: I don't know if you got them, either. I know that you requested them.

Q Do you have any opinions that Mrs. Strong had any other clinical problems that are not documented in the medical record?

A I have no knowledge of anything that is not documented in the record,

Q *Any* pulmonary diseases from anything that you have read in the record that you think she may have that are not indicated in this record?

A I have no indication of anything other than what is in the record, no.

Q Have you made any arrangement: to testify in person at the upcoming trial in this matter in Huron County?

A No, I have not.

Q Have you been asked to testify in person?

A No, I have not.

MS. TOSTI: I think we are done,

MR. SKIVER: Reserve signature,

(Deposition concluded)

CERTIFICATE

State of Michigan)
) ss
County of Kent)

I, Terri W. Sparkman, CSR-2704, Certified Shorthand Reporter and Notary Public in and for Kent County, Michigan, do hereby certify that the foregoing deposition of THOMAS ABRAHAM, M.D., was taken before me at the time and place hereinbefore set forth, and that said witness was duly sworn by me to tell the truth and nothing but the truth, and thereupon was examined and testified as in the foregoing deposition appears;

That this deposition was taken in shorthand and thereafter transcribed by me, and that it is a true and correct transcript of my original shorthand notes.

I further certify that I am not counsel for or related to either of the parties to the foregoing entitled cause, nor employed by them or their attorneys; neither am I interested in the subject matter or outcome of the foregoing cause.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this _____ day of _____, 1994.

Terri Sparkman, CSR
Notary Public in and for
Ionia County, Michigan

My Commission expires January 9, 19