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COURT OF CLAIMS
OF OHIO

2014 JUN 16 PM 3:46

IN THE OHIO COURT OF CLAIMS

YONG HUI SHEFFIELD, ET AL.

Plaintiffs,

-v-

THE OHIO STATE UNIVERSITY
MEDICAL CENTER

Defendant.

Case No. 2013-00013

Judge Patrick McGrath

**IDENTIFICATION OF EXPERT WITNESSES AND
NOTICE OF FILING EXPERT REPORTS**

Now come Plaintiffs, by and through counsel, and hereby identify the persons below as expert witnesses retained in the above referenced matter who will testify on behalf of the Plaintiffs. Attached hereto as exhibits are copies of each of their expert reports and curriculum vitae.

1. Dan Gzesh, M.D.
431 Vernon Road
Jenkintown, Pennsylvania 19046

Dr. Gzesh is a vascular neurologist. A copy of Dr. Gzesh's report is attached hereto as Exhibit "A". A copy of Dr. Gzesh's Curriculum Vitae is attached hereto as Exhibit "B."

- 2.Carolynn Cassutt, RN, CRNI, CLNC, VA-BC
7563 South Salida Court
Centennial, Colorado 80016

Ms. Cassutt is a registered nurse who specializes in the area of vascular access. A copy of Ms. Cassutt's report is attached hereto as Exhibit "C". A copy of Ms. Cassutt's Curriculum Vitae is attached hereto as Exhibit "D."

- 3.
- David W. Boyd, Ph.D.
20 Berlin Court
Granville, OH 43023

Dr. Boyd is an economist. A copy of Dr. Boyd's economic report is attached hereto as Exhibit "E". A copy of Dr. Boyd's Curriculum Vitae is attached hereto as Exhibit "F".

- 4.
- Mark Levin, M.D.
6 Gel Court
Monsey, New York 10952

Dr. Levin is an internal medicine and medical oncology specialist. A copy of Dr. Levin's report is attached hereto as Exhibit "G". A copy of Dr. Levin's Curriculum Vitae is attached hereto as Exhibit "H".

Respectfully submitted,



Michael J. Rourke (0022950)
Robert P. Miller (0073037)
Rourke & Blumenthal, LLP
495 South High Street, Suite 450
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Attorneys for Plaintiffs

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and accurate copy of the foregoing was served upon the following counsel of record via ordinary U.S. mail, postage prepaid, this 16th day of June, 2014:

Karl Schedler, Esq.
Daniel Forsythe, Esq.
Assistant Attorneys General
Court of Claims Defense Section
30 East Broad Street, 17th Floor
Columbus, Ohio 43215



Robert P. Miller (0073037)

Dan Gzesh M.D.
431 Vernon Road
Jenkintown, PA 19046
dgzesh@gmail.com

Robert P. Miller, Esquire
Rourke & Blumenthal, LLP
495 S. High Street, Suite 450
Columbus, Ohio 43215

September 15, 2013

Re: Daniel Sheffield

Dear Mr. Miller,

At your request, I have reviewed medical records concerning Mr. Sheffield's care as outlined in Appendix 1. I have also personally reviewed DVD's of the medical imaging studies outlined in Appendix 2.

Brief Narrative

Daniel Sheffield, a 69 year old male with a history of follicular lymphoma s/p allogenic stem cell transplant, was admitted to the Wexner Medical Center of Ohio State University on 6/13/2012 with neutropenic fever, acute respiratory failure, hypotension and sepsis. He was successfully treated for Nocardia pneumonia, though initial hospital course was complicated by CMV viremia, renal insufficiency and atrial fibrillation. By 7/5/2012, he was tentatively scheduled for transfer to a rehabilitation facility.

Previous medical history included prostate cancer, hypertension, depression, and the lymphoma. Neurological history had been notable for status epilepticus in 11/2011 for which he was treated with phenytoin.

On 7/5/2012, a left internal jugular central venous catheter was removed by Paul Gallett RN. There is no documentation of the assumption of the Trendelenburg position during



removal, nor of an occlusive dressing application. Approximately forty minutes later, Mr. Sheffield collapsed and went into a coma. Imaging studies disclosed the presence of air emboli associated with multiple bilateral cerebral infarctions. Treatment with hyperbaric oxygen was attempted, but he had no meaningful neurological recovery. He ultimately progressed to a persistent vegetative state and died as a consequence of the injuries.

Pertinent Laboratory Data

7/6/2013 CSF- Cell count 1; protein 52; glucose 77; cultures negative; Crypto Ag negative

6/13/2012 Transthoracic echocardiogram- study quality "fair;" Ejection fraction 40%; shunt test not performed

7/6/2012 Transthoracic echocardiogram- very technically limited study; mild left ventricular hypertrophy; no shunt recognized

Assessment

Based on my review of the available medical records, I believe Mr. Sheffield's strokes were a consequence of multiple air emboli related to removal of the central venous catheter on 7/5/2012.

The differential diagnosis of pneumocephaly (intracranial air) includes penetrating wounds, infection with gas forming organisms, and intravascular emboli from extracranial sources. Lumbar puncture essentially excluded meningeal infection, and there was no history of cranial trauma or surgery. The 7/5/2012 CT scan demonstrated air in the dural sinuses and along the cortical sulci of both hemispheres. While the imaging does not clearly demonstrate intra-arterial air, the immediate development of multiple cerebral infarctions in the areas adjacent to the sulcal air strongly supports the hypothesis that the air was intra-arterial. The involvement of multiple bilateral arterial distributions is consistent with embolization from a source proximal to the aortic arch.

The close temporal association between the removal of the venous catheter and the subsequent neurological deterioration is extremely compelling. Although the echocardiogram did not disclose a cardiac right to left shunt, it was described as a "very technically difficult study." Also, extra-cardiac right-left shunts can also occur in the lungs and the liver. Thus the "normal" echocardiogram does not exclude venous air as the source of the emboli.

In order to protect against the development of air emboli during removal of central venous catheters, assumption of the Trendelenburg position and application of an

occlusive dressing are common clinical practice. It appears that these precautions were not employed in Mr. Sheffield's care on 7/5/2012.

In summary, I believe Mr. Sheffield's death was a consequence of multiple embolic strokes caused by technically inadequate removal of a central venous catheter.

All opinions are stated with a reasonable degree of medical certainty.

Sincerely yours,



Dan Gzesh MD

Appendix 1

Medical records, Wexner Medical Center at the Ohio State University, 6/13/2012-8/16/2012

Appendix 2

11/4/2011 CT head- age appropriate white matter changes and atrophy
11/17/2011 CT head- age appropriate white matter changes and atrophy
6/13/2012 CT head- age appropriate white matter changes and atrophy
6/28/2012 CT head- age appropriate white matter changes and atrophy
7/5/2012 CT head- air in superior sagittal and cavernous sinuses, and along the cortical sulci bilaterally right > left- unclear if air is localized to intravascular or subarachnoid spaces

11/18/2011 MRI head- age appropriate white matter changes and atrophy
7/8/2012 MRI head- acute infarcts bilateral anterior and middle cerebral artery distributions, right > left; pattern appears embolic
7/8/2012 MRA head- atrophic right vertebral and A1 arteries (normal variants)
7/8/2012 MRV head- normal
7/14/2012 MRI head with/without contrast- acute infarcts bilateral anterior and middle cerebral artery distributions, right > left without significant change compared with study of 7/8/2012; extensive gyral enhancement
7/19/2012 MRI head- subacute infarcts bilateral anterior and middle cerebral artery distributions, right > left

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Robert P. Miller, Esquire
Rourke & Blumenthal, LLP
495 S. High Street, Suite 450
Columbus, Ohio 43215

June 12, 2014

Re: Yong Hui Sheffield vs OSUMC

Dear Mr. Miller,

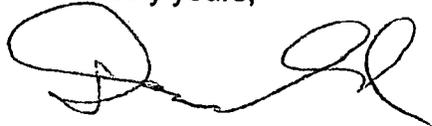
At your request, I have reviewed additional documents concerning Mr. Sheffield, as outlined in Appendix 3.

In my initial report, I argued that the removal of Mr. Sheffield's central venous catheter did not appear to have been performed according to an established safety protocol. Specifically, he was not first placed in the Trendelenburg position, and an occlusive dressing was not utilized at the catheter site. The depositions of Amber Sheffield, Yong Hui Sheffield, and Nurse Gullett confirm this assumption.

My opinion concerning the Mr. Sheffield's cause of death has therefore not changed. I believe it was a direct consequence of cerebral air emboli which were a consequence of the technically inadequate central venous catheter removal.

All opinions are stated with a reasonable degree of medical certainty.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Dan Gzesh', written in a cursive style.

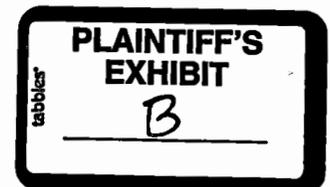
Dan Gzesh MD

Appendix 3

1. Deposition transcript, Paul A. Gullett RN, 12/30/2013
2. Deposition transcript, Amber Sheffield, 5/28/2014
3. Deposition transcript, Yong Hui Sheffield, 5/28/2014
4. Deposition transcript, Paul A. Gullett RN, 6/10/2014
5. Expert report,Carolynn Cassutt, RN, 12/15/2013

DAN JONATHAN GZESH, MD FAHA

CURRENT PROFESSIONAL APPOINTMENT	Clinical Associate Professor of Neurology Drexel University College of Medicine Division Head, Cerebrovascular Disease	2006-
PREVIOUS PROFESSIONAL APPOINTMENTS	Clinical Assistant Professor of Neurology Drexel University College of Medicine	2003-2006
	Section Head, Division of Neurology Director of Stroke Program Mercy Catholic Medical Center, Philadelphia, PA	1993-2006
	Clinical Instructor of Neurology Thomas Jefferson University	1993-2006
	Practicing Neurologist, Neurology Associates LTD	1993-2006
	Instructor of Neurology Division of Cerebrovascular Disease Jefferson Medical College	1990-1993
	Medical Staff, Frankford Hospital	1989-1990
FELLOWSHIP	Cerebrovascular Disease Research Hospital of the University of Pennsylvania	1989-1990
RESIDENCY	Neurology, Thomas Jefferson University Hospital	1986-1989
INTERNSHIP	Internal Medicine, Thomas Jefferson University Hospital	1985-1986
MEDICAL EDUCATION	Jefferson Medical College, MD	1981-1985
OTHER EMPLOYMENT	Lab Technician Fox Chase Cancer Center	1980-1981
COLLEGE	Haverford College, BA Major in Philosophy	1976-1980
HONORS AND ACHIEVEMENTS	Dean's Special Award for Excellence in Clinical Teaching, Drexel University	2005, 2006
	Fellow of the American Heart Association-FAHA	2002
	Recipient of "Golden Apple Award" – recognition by emergency department house staff for teaching and inspiration	2002



	Diplomat, American Board of Psychiatry and Neurology	1990
	Chief Resident in Neurology	1988-1989
	Diplomate, National Board of Medical Examiners	1986
	Arthur Keiger Memorial Prize in Neurology Jefferson Medical College	1985
	Hobart Hare Honor Medical Society, JMC	1984
	NIMH Fellowship in Clinical Psychiatry	1981
COMPETITIVE FUNDING	Influence of adenosine on glutamate release during ischemia, National Stroke Association Young Investigator Award, \$60,000	1991-1993
FUNDED CLINICAL PROTOCOLS	Trial of Ancrod in Acute Ischemic Stroke (Neurobiological Technologies)	2007-
	Siblings with Acute Stroke Study (NIH, Mayo)	2006-
	Capture 2-Evaluation of Carotid Stent system in patients with Carotid Stenosis (Guident)	2006-
	Closure 1-Starflex PFO closure device in patients with TIA or CVA (NMT Medical)	2006-
	LeukaArrest Acute Stroke Trial, site principal investigator (Icos)	1998-1999
	Trial of Cerestat in Acute Stroke, site principal investigator (Boehringer)	1996-1998
	Trial of Velnacrine in Alzheimer's Disease (Hoechst)	1994
	Randomized Trial of Tirilazad in acute stroke, site principal investigator (Upjohn)	1992-1994
	ECD-SPECT imaging of acute stroke (Dupont)	1991
	Validation of Short Neurologic Exam (Dupont)	1991
	GM1 Ganglioside trial in acute stroke (Fidia)	1991
PROFESSIONAL ACTIVITIES	Member, Board of Governors Mercy Fitzgerald Hospital	2005-2006
	Regional Champion, "Get with the Guidelines" Delaware Valley Division, AHA	2002-2006
	Vice Chair, Medical Advisory Committee, Operation Stroke, Delaware Valley Division, AHA	2001-2003
	Executive Board, Philadelphia Stroke Council	2000-present
	Pharmacy and Therapeutics Committee, Mercy Catholic Medical Center	1999-2006
	Medical Management Committee, Mercy Hospital of Philadelphia	1999-2001
	Consultant, Geriatric Assessment Program, Mercy Catholic Medical Center	1997-2001

Institutional Ethics Committee, 1994-2006
Mercy Catholic Medical Center

Ongoing Educational Activities-lectures, 1993-present
bedside rounds, conferences, etc. for
attending physicians, residents, medical students,
nurses

INVITED LECTURES
(CME accredited)
7/2006-present

Drexel University College of Medicine
Department of Medicine Grand Rounds
"The ABC's of TPA for Acute Stroke"
October 6, 2006

Drexel University College of Medicine
Department of Emergency Medicine
"Emergency Management of Epilepsy"
October 10, 2006

Roxborough Memorial Hospital Grand Rounds
The ABC's of TPA for Acute Stroke"
November 14, 2006

Mercy Fitzgerald Medical Center Grand Rounds
"Emergency Stroke Neurology and the Establishment of Primary Stroke
Centers"
January 31, 2007

St Mary's Medical Center Grand Rounds
"Guidelines for the Treatment of Hypertension in Acute Stroke"
March 13, 2007

Drexel University College of Medicine
Department of Emergency Medicine Grand Rounds
"Guidelines for the Emergency Management of Acute Cerebral
Ischemia"
October 16, 2007

Drexel University College of Medicine
Department of Neurology Grand Rounds
"Recurrent Stroke and Intracranial Stenosis"
November 16, 2007

Thomas Jefferson University
Department of Rehabilitation Medicine Grand Rounds
Secondary Stroke Prevention

ABSTRACTS AND
PUBLICATIONS

Liu JE, Gzesh DJ, Ballas SK. The spectrum of epilepsy in sickle cell
anemia. *J Neurol Sci* 1994 May;123(1-2):6-10.

Liem MD, Gzesh DJ, Flanders AE. MRI and angiographic diagnosis of
lupus cerebral vasculitis. *Neuroradiology* 1996 Feb;38(2):134-6.

Frazer G, Bell R, Gzesh D, Osterholm J, Ventriculo-cisternal perfusion: a technique for brain hypothermia **Neurology** 1991;41:346.

Gzesh D, Goldstein S, Sperling M, Alavi A, Complex partial epilepsy: the role of neuroimaging in localizing a seizure focus for surgical intervention. **J Nuclear Medicine** 1990;31:1839-43.

Kushner M, Gzesh D, Migrainous influences and transient global amnesia. In: Markewisch, ed. **Transient Global Amnesia and Related Disorders**. Toronto: Hogrefe and Huber, 1990:889-95.

Alves W, Jamieson D, Kushner M, Gzesh, D, Chawluk, Alavi A, Reivitch, M, Qualitative versus quantitative interpretation of acute emission tomography in acute stroke. **Ann Neurology** 1990;29: 257.

Gzesh D, Evans V, Heiman-Patterson T, Tamoush A, Shy M. Specificity of anti-GM1 antibodies in patients with motor neuron disease. **Neurology** 1989;39:402.

Franco G, Besarab A, Burke J, Peters J, Tahamont M, Gee M, Flynn J, Gzesh D. Dialysis-induced hypoxemia. **Amer J Kidney Diseases** 1985;5:191-7.

REVEIWER

STROKE, 2008

PERSONAL

Born December 12, 1958 in Pittsburgh, Pennsylvania

Married to Mary Schuler MD

3 children- Sarah, Evan, Colin

June 15, 2014

Rourke and Blumenthal LLP
495 South High Street
Suite 450
Columbus, Ohio 43215

Re: Daniel Sheffield

Dear Mr. Miller,

I have reviewed the nursing care rendered to Mr. Daniel Sheffield while he was under the care of the staff of Wexner Medical Center at the Ohio State University through review of the records provided.

Professional Experience:

I am a registered nurse, licensed the State of Colorado, with 36 years of experience and specialization in the area of vascular access for the last 23 years.

I am nationally credentialed in infusion therapy with the designation CRNI (Certified Registered Nurse Infusion) since 1995 and board certified in vascular access with the designation VA-BC (Vascular Access Board Certified) since 2011. Currently I am the president of Carolynn Cassutt Consulting a company that specializes in intravenous education for health care providers. I currently spend at least 75% of my professional time in the instruction of infusion therapy and related nursing topics in accredited courses.

Prior to pursuing my own consulting business, I was the Clinical Coordinator for the IV Therapy Departments of the Denver Hospitals of Centura Health. My responsibilities included education of staff, advisor to the quality assurance and risk management departments, member of the standards committee as well as management of the departments.

My position also included a clinical component comprising of placement of IV catheters and specialty IV lines, troubleshooting all types of vascular access catheters, removal of central venous catheters, and consulting on any line complications for all patients. Our patients ranged from newborns to the elderly.

I am an active member of many professional societies, including the Infusion Nurse's Society and Association of Vascular Access. I have been invited to make several presentations at national conferences for these professional societies.

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Records Reviewed:

I have reviewed the following records of Daniel Sheffield:

- Select Medical Records from Wexner Medical Center at the Ohio State University 6/12/12 – 8/15/12
- Discharge Summary by Dareth N Gilmore, CNP / Sumithira Vasu MBBS 9/25/12
- Factual summary from Amber Sheffield
- Depositions of:
Carrie Aurin, RN
Yong Sheffield
Amber Sheffield
Paul Gullett, RN

Record Review:

Mr. Sheffield was a 69-year-old male with history of Non-Hodgkin's lymphoma status post URD SCT (Stem Cell Transplant) who presented to Wexner Medical Center at The Ohio State University with septic shock on June 13, 2012. He was admitted from the ER to MICU. He was intubated briefly and treated with antibiotics.

Once he was stable and extubated he was transferred to the BMT (Bone Marrow Transplant) unit and service. He was receiving PT (physical therapy) and OT (occupational therapy) and other appropriate care with plans to discharge for acute rehab when on 7/5/12 he experienced an air embolism following the removal of his IJ (internal jugular) temporary CVC (central venous catheter) which led to an ischemic stroke.

An MRI on 7/8/12 showed multiple area of restricted diffusion in the brain parenchyma suggestive of acute infarcts. He received multiple HBO treatments with no improvement. A repeat MRI on 7/13/12 was unchanged. He remained unresponsive in a chronic vegetative state. On Friday, 9/21/12, Mrs. Sheffield, the patient's wife, approached the medical team and wished to change the patient's code status to DNR-CC (Do Not Resuscitate – Comfort Care). At this time Mr. Sheffield's condition was deteriorating and he was requiring increased respiratory support with increased oxygen and suction needs as well as increased hematuria.

On 9/24/12, he became hypotensive requiring fluid resuscitation and ultimately

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pressors. He received broadened antibiotics and 98% oxygen with increased labored breathing. His family was notified of the change in clinical status and they were asked to come to the hospital. Dr. Vasu discussed with the family the clinical deterioration; the family opted to proceed with comfort care. At 4pm Dr. Kavya Krishna was called to the bedside and pronounced him deceased due to severe sepsis resulting from immobility from a stroke.

Standards of Care

During CVAD (central venous access device) removal, prevention of air embolism is essential. The standards of care (SOC) for prevention of air embolism during removal of a CVAD include:

- Positioning
- Valsalva Maneuver
- Application of pressure to the exit site to achieve hemostasis
- Application of an occlusive dressing with petroleum-based ointment
- Having the patient remain supine for 30 minutes after removal

Breaches in Standards of Care:

1. Failure to place the patient in the safe position for CVAD removal to prevent air embolism.

The SOC, as well as the policy of Wexner Medical Center for positioning of a patient for the removal of a CVAD is to place the patient so that the CVAD insertion site is at or below the level of the heart to reduce the risk of air embolism. (Alexander 2010) (Camp-Sorrell 2011) (Infusion Nurses Society 2011) (Mosby 2013) For the removal of an internal jugular catheter in the neck, the standard requires Trendelenburg position. (Placing the patient's head down and elevating the feet.)

There is no indication in the medical records that Mr. Sheffield was placed in this position. Amber Sheffield, his daughter and Yong Sheffield his wife who were present at the time of the catheter removal, testified that his head was elevated on a pillow (Amber Sheffield 39.1) (Yong Sheffield 62.8) making the insertion site in the neck above the level of the heart in direct contradiction of the SOC and the Wexner Medical Center policy.

Nurse Gullett testified that he couldn't remember if Mr. Sheffield had a pillow under his head or not during the removal of the internal jugular catheter. (Gullett 170.9)

2. Failure to have Mr. Sheffield perform the Valsalva maneuver during the catheter removal to decrease the risk of air embolism.

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The standard of care for catheter removal requires the patient perform the Valsalva maneuver (bearing down), unless contraindicated. (Alexander 2010) (Camp-Sorrell 2011) (Infusion Nurses Society 2011) This was not contraindicated for Mr. Sheffield. This is also a requirement of the Wexner Medical Center policy for central venous catheter removal. (Mosby 2013) The Valsalva maneuver increases central venous pressure, which decreases the risk of air embolism.

The medical records reflect that Nurse Gullett, instead of having Mr. Sheffield perform the Valsalva maneuver, the superior method of increasing central venous pressure to prevent air embolism, had him hum.

Nurse Gullett and both Mrs. and Ms. Sheffield who were present at the time testified to this humming for the removal of the CVC. (Gullett 186) (Amber Sheffield 39.5) (Yong Sheffield 62.17-19)

In a study to evaluate the prevention of air embolism during CVAD placement, the researchers compared various physiological maneuvers (Valsalva, humming, breath-hold.) In this study, they found that humming resulted in negative central pressure, which would increase the risk of air embolism. Their conclusion was that the Valsalva maneuver showed superior results when compared to other methods. (Wysoki 2001)

Nurse Gullett testified that he was aware of the Valsalva (bearing down) during the removal of a CVAD, but was taught to have the patient hum a song. (Gullett 186) He could not cite any authoritative works to support the benefits of humming over the SOC of the Valsalva maneuver. (Gullett 186-187)

3. Failure to apply petroleum based ointment and sterile dressing to the access site.

The SOC upon removal of a CVAD is to apply petroleum based ointment and sterile dressing to the access site to seal the skin-to-vein tract and decrease the risk of air embolism. (Alexander 2010) (Camp-Sorrell 2011) (Infusion Nurses Society 2011) Wexner Medical Center policy states, "as the introducer exits the site, apply pressure with petroleum based ointment and sterile gauze" (Mosby 2013)

The medical records indicate, "dressing applied." There is no documentation that this dressing was sterile or air occlusive as required to seal the tract. Amber Sheffield testified that there was no ointment on the dressing. (Amber Sheffield 51.4-5)

Nurse Gullett testified that he did not apply any ointment. (Gullett 172.16)

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The documentation entered at 2057 (2 hours and 57 minutes after the procedure) reflects, "Pressure applied for 15 minutes." Amber Sheffield, who witnessed this event, when asked about if she had seen Nurse Gullett apply any pressure after removal of the line, testified, "Not for an significant amount of time." (Amber Sheffield 39.23) When asked how long it was, she testified, "45 seconds to a minute, tops." (Amber Sheffield 403)

Yong Sheffield, who also witnesses this event, when asked how long Nurse Gullett was holding pressure for, testified, "One to two minutes." (Yong Sheffield 67.12)

Nurse Gullett testified that he applied pressure for 15 minutes with sterile gauze. (Gullett 172.5) The SOC does not specify an amount of time pressure should be applied just that pressure should be applied until hemostasis is achieved and then the site should be covered with an occlusive (air and water tight) dressing.

He further testified that this piece of gauze that he applied over the jugular catheter removal site had one piece of tape on it. (Gullett 173.5) The dressing that was applied by Nurse Gullett was not occlusive, and without a petroleum-based ointment applied to the site this dressing would not prevent air from entering the blood stream through the skin-to-vein tract.

4. Failure to have patient lay flat for 30 minutes after removal of a CVAD.

The SOC is after removal of a CVAD to have the patient remain in a supine position for 30 minutes. (Alexander 2010) (Camp-Sorrell 2011) Wexner Medical Center policy states, "Maintain bed rest for at least 30 minutes." (Mosby 2013)

There is no documentation of Mr. Sheffield remaining flat for 30 minutes. Dr. Oostra in his Neurology follow-up note on July 6, 2012 documents, "He was seen by the nurse at 6:30pm on 7/5/12. A temporary left IJ CVC was removed. Minutes later the nurse returned to find the patient slumped over and non-responsive. Patient was transferred into the bed where her was noted to have decreased tone and bilateral eye deviation to the left and then right." This note indicates Mr. Sheffield was not kept in a supine position for 30 minutes after removal of the CVC but was actually up in a chair in direct opposition to the SOC as well as the policy of Wexner Medical Center.

Nurse Sheffield testified that he was not trained to have the patient remain flat for 30 minutes after removal of an internal jugular central catheter. (Gullett 188.2) In fact, he testified that after he held pressure for approximately 15 minutes, he raised the head of the bed up to 15-30 degrees in direct contradiction to the SOC and the policy of Wexner Medical Center. (Gullett 173.20)

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5. Failure to recognize a complication of CVAD removal, air embolism, and initiate emergency measures.

The SOC specifies, "The nurse shall be competent in the process of CVAD removal including identification of potential complications, and appropriate nursing interventions and/or emergency measures as needed." (Alexander 2010) (Infusion Nurses Society 2011) In addition the standards state, "The nurse should suspect air embolism with the sudden onset of dyspnea (difficulty in breathing or SOB), continued coughing, breathlessness, chest pain, hypotension, jugular venous distention, tachyarrhythmias (fast irregular hear beat), wheezing, tachypnea, altered mental status, altered speech, changes in facial appearance, numbness, and paralysis." (Alexander 2010) (Camp-Sorrell 2011) (Infusion Nurses Society 2011)

The SOC directs the nurse when an air embolism is suspected to take immediate action by immediately placing the patient on his left side in Trendelenburg position. This positioning moves the air bubble away from the pulmonic valve. The goal is to trap the air in the lower portion of the right ventricle allowing flow through the heart and not allowing it to travel to the brain or other locations. The nurse should also administer oxygen at 100%. (Alexander 2010) (Camp-Sorrell 2011) (Infusion Nurses Society 2011)

The family called Nurse Gullett to the room minutes after the removal of the CVAD because Mr. Sheffield was "really red and complaining of SOB" (shortness of breath). These were clear indicators of a potential air embolism that Nurse Gullett should have recognized. He applied oxygen at 2 L per minute and stopped the antibiotic.

The appropriate nursing intervention with these clear indicators of a potential air embolism was to get Mr. Sheffield on his left side with his head lower then his heart. (Alexander 2010) (Camp-Sorrell 2011) (Infusion Nurses Society 2011) Instead Nurse Gullett left the room, leaving Mr. Sheffield up in the chair, to get help. In an emergency situation such as this, the proper way to get help fast is to push the emergency call light located in all patient rooms.

Nurse Gullett testified he called out needing help. (Gullett 189.7) When asked about the availability of an emergency button or call button, he testified there was an emergency button or call button he could have hit but did not do that. Instead what he thought of was to call out for help. (Gullett 193) and he ran out to get the charge nurse. (Gullett 189.8)

The family called out again saying now Mr. Sheffield was no longer speaking or responding to name or commands. Nurse Gullett returned to the room with Charge Nurse Sarah and Bonnie. They found Mr. Sheffield unresponsive and

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placed him back in bed. They called for the code cart. Dr Bitterbender ordered the oxygen to 4L and assessed the patient.

They did not apply pressure to the CVC removal site. (Gullett 192.2) They did not place Mr. Sheffield on his left side. (Gullett 192.5)

A CT of the brain was done at 1930, which found "Interval development of tiny foci of air tracking along the sulci most prominent in the right frontal lobe near the vertex. Some of the visualized pockets of gas could be intravascular."

Opinions:

Air embolism from a CVAD removal is a rare, potentially lethal and preventable complication. The National Quality Forum classifies it as a "Never Event, a medical error that should never occur. The Center for Medicare and Medicaid Services (CMS) announced in August 2007 that Medicare would no longer pay for additional costs associated with many preventable errors, including those considered Never Events.

These clear breaches by Nurse Gullett in the SOC and noncompliance of the policy of Wexner Medical center prompted a hospital wide Clinical Practice Alert regarding the removal of central venous catheters by nursing staff to be issued on October 5, 2012.

The care and treatment Mr. Sheffield received by the staff of Wexner Medical Center at The Ohio State University on July 5, 2012 deviated from the acceptable standards of care, and to a reasonable degree of nursing/medical probability contributed to the air embolism which led to an acute ischemic stroke as diagnosed by and Drs. Kavecansky and Penza and eventually his death.

These opinions are based on my education, training, knowledge and experience as well as the information provided to me of this date.

I reserve the right to supplement or revise said opinions based upon expanded information obtained through discovery.

Respectfully submitted,



Carolynn Cassutt, RN, CRNI, CLNC, VA-BC

Carolynn Cassutt Consulting, Inc

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Bibliography

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Camp-Sorrell, Dawn. *Access Device Guidelines Recommendations for Nursing Practice and Education, 3rd Ed*. Pittsburg: Oncology Nursing Society, 2011.

Infusion Nurses Society. "Infusion Nursing Standards of Practice." 2011.

Mosby. *Central Venous Catheter:Removal*. 2013.

Wysoki, Michael, et al. "Evaluation of Various Maneuvers for Prevention of Air Embolism During Central Venous Catheter Placement." *Journal of Vascular Interventional Radiology*, 2001: 764-6.

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Carolynn Cassutt, RN, CRNI, CLNC, VA-BC

Education

- Mount Royal College, Calgary, Alberta, Canada - Associate Diploma Nursing – 1978
- Montana State University, Bozeman, Montana - Nursing Major (1973 – 1976)

Licensure and Certification

- Registered Nurse: Colorado 104282
- Certified Registered Nurse Intravenous, CRNI (Since 1995)
- Critical Care Registered Nurse Certification, CCRN (1988-1994)
- Certified Legal Nurse Consultant (Since 2005)
- Vascular Access Board Certified, VA-BC (Since 2011)

Professional Memberships

- Rocky Mountain Chapter Infusion Nurses Society (Since 1994)
President 1995 – 1997 & 2002 - 2005
Treasurer 1998 - 1999
Presidential Advisor 1998 – 1999 & 2006 - 2009
President 1997 – 1998
- Infusion Nurses Society - INS (Since 1994)
- Association for Vascular Access - AVA (Since 1997)
- American Association of Legal Nurse Consultants (Since 2004)
- Colorado Chapter of American Association of Legal Nurse Consultants (Since 2005)
- National Alliance of Certified Legal Nurse Consultants (Since 2005)
- Colorado Association for Vascular Access Network (Since 2007)

Specialized Education

- COVAN 3rd Annual Spring Symposium - April 2011
- INS National Academy of Infusion Therapy – November 2010
- Rocky Mountain Fall Symposium on IV Therapy – October 2010
- AVA (Association for Vascular Access) Annual Conference –September 2009
- INS Annual Meeting – May 2009
- Rocky Mountain IV Symposium – Oct 2008
- NACLNC Conference – March 2007
- AVA (Association for Vascular Access) Annual Conference –September 2006
- INS (Infusion Nurses Society) Annual Conference – May 2006
- CLNC 6- Day Certification Program – September 2005
- Innovations and Technical Advances in Infusion Care – November 2004
- National Academy of Infusion Therapy – November 2004
- AVA Annual Conference – Sept 2003
- INS National Academy - May 2000
- PICC Instructor Course – April 2000
- NAVAN Annual Conference – September 1999
- INS National Academy – May 1999
- Advanced PICC Line Education - September 1998
- INS National Academy - May 1997
- INS National Academy - May 1995
- INS National Academy - May 1994
- Peripherally Inserted Central Venous Catheters - December 1994
- INS Annual Meeting – May 1994
- Peripherally Inserted Central Venous and Extended Peripheral Catheters - Oct. 1991

Professional Experience

- Intravenous Nurse Educator and Legal Nurse Consultant, Carolynn Cassutt Consulting, Inc, Centennial, CO (1995 to present)
Currently teaches Seminars on IV Therapy, some current courses:
 - PICC/ML Insertion, Care & Troubleshooting
 - Colorado Board of Nursing approved - LPN IV Certification
 - IV Techniques for MAs, RTs and other HCPs
- Genentech Cathflo Speakers Bureau (February 2011 to present)
- Clinical Coordinator, IV Therapy Services, Centura Health, Porter, Littleton, and Parker Adventist Hospitals (April 2002 to December 2004)
- Clinical Coordinator, IV Therapy Services, Centura Health DMSA, Porter and Littleton Adventist Hospitals, Centura Hospices, and Saint Anthony Central and North Hospitals (August 1998 to April 2002)
- IV Nurse Clinician, IV Therapy Services, Centura Health, Porter and Littleton Adventist Hospitals (1995-1998)

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- IV Nurse Consultant, Pharmacy Corporation of America, Broomfield, CO (1994 - 1995)
- IV Nurse Consultant, Pharmacy Corporation of America, Union City, CA (1988 - 1992)
- Critical Care Nurse, Washington Hospital, Fremont, CA (1986 - 1991)

Conference Presentations

- *Legal Considerations in Vascular Access*, COVAN 3rd Annual Spring Symposium, Denver, CO, (April 2011)
- *Vascular Access Hits A Nerve*, AVA 23rd Annual Scientific Meeting, Las Vegas, NV, (Sept 2009)
- *Legal implications for Vascular Access Nurses: From the Hospital Room to the Court Room*, AVA 23rd Annual Scientific Meeting, Las Vegas, NV, (Sept 2009)
- *Administering Intravenous Medications Safely for Compatibility*, INS Annual Meeting, Nashville, TN (May 2009)
- *Current Issues in IV Therapy, an interactive discussion*, Rocky Mountain Chapter of INS Fall Symposium on IV Therapy, Denver, CO (October 2008)
- *Panel Discussion member*, Rocky Mountain Chapter of INS, Fall Symposium on IV Therapy, Denver, CO (October 2007)
- *Needles and Nerves, A Legal Connection*, AVA 20th Annual Conference, Indianapolis, IN, (September 2006)
- *Appropriate Line Selection*, Rocky Mountain INS Winter Workshop, Denver, CO (February 2002)
- *CVADS, Oncology Skills Day*, Memorial Hospital, Colorado Springs (March 2000)
- *So You Think You Know Your Catheter*, Oncology Department, Memorial Hospital, Colorado Springs (January 2000)
- *So You Think You Know Your Catheter*, Metro Denver Oncology Nursing Society (September, 1999)

Achievements

- IV Nurse of the Year, 2008, Rocky Mountain Chapter INS
- Special appointment to the IV rules committee for the Colorado Board of Nursing 2002-2003
- IV Nurse of the Year, 2003 & 2004, Rocky Mountain Chapter INS
- Finalist for CRNI of the Year Award, 2000, Intravenous Nurses Certification Corporation
- IV Nurse of the Year, 1998, Rocky Mountain Chapter INS
- Advisor to Standards of Care for Clinical Practice Committee, Centura Health, Porter and Littleton Adventist Hospitals and Centura Health, Saint Anthony Central and North Hospitals.
- Advisor to Quality Assurance Committee, Centura Health, Porter and Littleton Adventist Hospitals

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Estimation of the Economic Damages
Stemming from the Death of
Mr. Daniel Sheffield

DANIEL W. BOYD, PH. D.
FORENSIC ECONOMIC CONSULTANT

MAY 28, 2014



I. Background Information

Name: Daniel Sheffield
Date of Birth: December 13, 1942
Date of Death: September 25, 2012

This report estimates the total economic damages stemming from the death of Mr. Daniel Sheffield. The estimated total economic damages are the sum of the present value of lost net earning capacity and the present value of the value of lost household services.

II. Estimated Lost Earning Capacity

At the time of his death, Mr. Sheffield was earning income from a pension and from Social Security. In 2011, Mr. Sheffield's pension payment was \$34,450 and his income from Social Security was \$20,147. These two figures sum to \$54,597. This figure estimates Mr. Sheffield's 2011 annual earning capacity. The Social Security payment is subject to an annual cost of living adjustment (COLA). In 2012 and 2013 the COLAs were 1.7% and 1.5%, respectively.¹ Beyond 2013, the COLA is estimated to average 2.47% per year, the average annual COLA during the last fifteen years.

Mr. Sheffield's estimated lost annual earning capacity is shown in column 2 of Table 1. Mr. Sheffield's lost annual earning capacity is estimated through September 25, 2024, twelve years after the date of his death.

III. Personal Consumption Deduction

Mr. Sheffield would have consumed some of his income himself. Recent data collected and published by the United States Department of Labor, through the Bureau of Labor Statistics, indicate that, in a two-adult family, a male with annual income between \$50,000 and \$70,000 consumes an average of 24.6% of his income when no minor

¹ These annual COLAs are available at www.socialsecurity.gov/OACT/COLA/colaseries.html.

children are in the household.² It is estimated that, had he remained alive, Mr. Sheffield would have consumed an average of 24.6% of his earning capacity.

The appropriate personal consumption deduction is shown in column 3 of Table 1. Estimated lost annual earning capacity, net of the personal consumption deduction, is shown in column 4 of Table 1.

IV. Present Value

The present value of the economic loss due to Mr. Sheffield's death is calculated as of 2014. Thus, all future values should be discounted to that date. The discount rate utilized here to reduce future dollars to present value is 3.26%, the average annual yield on a mix of United States Treasury securities during the past fifteen years.³

The resultant discount factors are shown in column 5 of Table 1. The discount factors are applied to estimated lost annual net earning capacity to yield the present value of estimated lost annual net earning capacity, shown in column 6 of Table 1. Cumulative present value of estimated lost annual net earning capacity is shown in column 7 of Table 1.

V. Estimated Value of Lost Household Services

Recent research conducted by the United States Bureau of Labor Statistics estimates the amount of time, on average, individuals spend providing household activities, such as vehicle and house maintenance and repair, and in time spent caring for and helping household members.⁴ Specifically, the research results indicate that a not-employed male without minor children in the household spends an average of 1.86 hours per day providing such services. It is estimated that Mr. Sheffield would have provided an

² These results are summarized in Gerald D. Martin, *Determining Economic Damages*, James Publishing Co., 2012, Table 22D, p. 5-10.

³ The United States Treasury securities include those with durations of 1 year, 5 years, and 10 years. For the average yields on these securities, see www.federalreserve.gov/releases/h15/data.htm.

⁴ See the American Time Use Survey, available at www.bls.gov/tus/home.htm. See, specifically, the 2012 Results, Table 8.

average of 1.86 hours per day of these household services for twelve years beyond the date of his death.

The value of foregone household services is estimated by using the average wages of workers providing such services. According to the United States Department of Labor, through the Bureau of Labor Statistics' Occupational Employment Statistics program, as of May 2013 the average hourly wage for installation, maintenance, and repair helpers was \$13.04.⁵ This hourly wage is used to estimate the value of each hour of household services that Mr. Sheffield would have provided, had he remained alive. Before and after 2013, this hourly wage is estimated to increase at an average annual rate of 2.79%, the average annual growth rate in average weekly earnings in private, nonagricultural industries in the United States during the last fifteen years.⁶ The estimated annual values of lost household services are shown in column 2 of Table 2.⁷

The present value of the estimated value of lost household services is calculated as of 2014. Discount factors are utilized, as described in section IV above. The discount factors are shown in column 3 of Table 2.

The discount factors are applied to the estimated annual value of lost household services to yield the estimated present value of the annual value of lost household services, shown in column 4 of Table 2. The estimated cumulative present value of the annual value of lost household services is shown in column 5 of Table 2.

⁵ These data are available at www.bls.gov/oes.

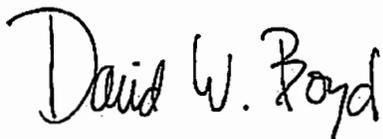
⁶ *Economic Report of the President: 2014*, Table B-15.

⁷ The annual figures are based on an average of 350 days per year providing household services.

VI. Estimated Total Economic Damages

The estimated total economic damages due to the death of Mr. Daniel Sheffield are summarized below.

Estimated present value of lost net earning capacity	\$469,496.02
Plus: Estimated present value of lost household services	<u>\$103,646.83</u>
Estimated Total Economic Damages	\$573,142.85



Daniel W. Boyd, Ph.D.

Table 1
Earning Capacity

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	Estimated Lost Annual Earning Capacity	Personal Consumption Deduction	Estimated Lost Annual Net Earning Capacity	Discount Factor	Estimated Present Value of Lost Annual Net Earning Capacity	Estimated Cumulative Present Value of Lost Annual Net Earning Capacity
2012	\$14,613.91	\$3,595.02	\$11,018.89	1.00000	\$11,018.89	\$11,018.89
2013	\$55,246.84	\$13,590.72	\$41,656.12	1.00000	\$41,656.12	\$52,675.00
2014	\$55,760.52	\$13,717.09	\$42,043.43	1.00000	\$42,043.43	\$94,718.44
2015	\$56,286.89	\$13,846.58	\$42,440.32	0.98399	\$41,760.64	\$136,479.08
2016	\$56,826.26	\$13,979.26	\$42,847.00	0.95297	\$40,831.70	\$177,310.77
2017	\$57,378.96	\$14,115.22	\$43,263.73	0.92292	\$39,929.09	\$217,239.86
2018	\$57,945.30	\$14,254.54	\$43,690.76	0.89383	\$39,052.01	\$256,291.88
2019	\$58,525.64	\$14,397.31	\$44,128.33	0.86565	\$38,199.69	\$294,491.56
2020	\$59,120.31	\$14,543.60	\$44,576.71	0.83836	\$37,371.35	\$331,862.91
2021	\$59,729.66	\$14,693.50	\$45,036.17	0.81193	\$36,566.26	\$368,429.17
2022	\$60,354.07	\$14,847.10	\$45,506.97	0.78634	\$35,783.72	\$404,212.90
2023	\$60,993.90	\$15,004.50	\$45,989.40	0.76155	\$35,023.04	\$439,235.93
2024	\$54,414.46	\$13,385.96	\$41,028.50	0.73754	\$30,260.09	\$469,496.02

Table 2
Household Services

(1)	(2)	(3)	(4)	(5)
Year	Estimated Annual Value of Lost Household Services	Discount Factor	Estimated Present Value of Annual Value of Lost Household Services	Estimated Cumulative Present Value of Annual Value of Lost Household Services
2012	\$2,196.79	1.00000	\$2,196.79	\$2,196.79
2013	\$8,489.04	1.00000	\$8,489.04	\$10,685.83
2014	\$8,725.88	1.00000	\$8,725.88	\$19,411.72
2015	\$8,969.34	0.98399	\$8,825.69	\$28,237.41
2016	\$9,219.58	0.95297	\$8,785.94	\$37,023.35
2017	\$9,476.81	0.92292	\$8,746.36	\$45,769.71
2018	\$9,741.21	0.89383	\$8,706.96	\$54,476.68
2019	\$10,012.99	0.86565	\$8,667.74	\$63,144.42
2020	\$10,292.35	0.83836	\$8,628.70	\$71,773.12
2021	\$10,579.51	0.81193	\$8,589.83	\$80,362.95
2022	\$10,874.68	0.78634	\$8,551.14	\$88,914.09
2023	\$11,178.08	0.76155	\$8,512.62	\$97,426.71
2024	\$8,433.62	0.73754	\$6,220.12	\$103,646.83

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Economics Dept.
Denison University
Granville, OH 43023
(740) 587-6317

Education:

Ph. D., Economics, The Ohio State University, 1991.

M.A., Economics, The Ohio State University, 1987.

M.S., Operations Research, Stanford University, 1982.

B.S., Operations Research and Industrial Engineering, Cornell University, 1981.

Professional Experience:

Associate Professor, Denison University, January 1997 - present. **Assistant Professor**, Fall 1991 - Fall 1996. **Visiting Instructor**, Fall 1989.

Forensic Economic Consultant, 1992 – present.

Investment Research, AT&T Corporate Headquarters, summer 1986.

Economic Analyst, AT&T Bell Laboratories, 1981-1985.

Adjunct Professor, Quantitative Analysis, Fairleigh Dickinson University, 1983-1984.

Consultant, Failure Analysis Associates, Palo Alto, CA, 1981-1982.

Publications:

“Optimal Pricing for Voice Mail Services: A Comment”, *The American Economist*, volume 57, no. 2, Fall 2012, pp. 253 – 256.

“History and Search Capacities of Web Sites for Legal Decisions of Interest to Forensic Economists”, with Thomas R. Ireland, *Journal of Legal Economics*, volume 15, no. 1, August 2008, pp. 93 – 102.

“Trial Lawyers Care: The 9/11 Victim Compensation Fund”, *The FCTLA Communicator*, volume 1, no. 1, Fall 2005, pp. 5 – 6.



“Assessing Economic Damages in Personal Injury and Wrongful Death Litigation: The State of Ohio”, with Ralph R. Frasca, *Journal of Forensic Economics*, volume 17, no. 2, Spring/Summer 2004, pp. 241 – 253.

“Photocopy Caper: Is a Common Price Evidence of Collusion?”, *For the Record*, volume 16, no. 24, November 29, 2004, pp. 28 – 30.

“Economic Equity in Divorce Cases”, *Michigan Family Law Journal*, volume 33, no. 8, October 2003, pp. 10 - 13.

“Free Agent Nation: How America’s New Independent Workers are Transforming the Way We Live”, by Daniel H. Pink, book review, *Journal of Forensic Economics*, volume XV, no. 1, Winter 2002, pp. 99 - 100.

“New Developments in Expert Economic Testimony”, *BARbriefs*, Columbus Bar Association, April 2002, pp. 8 - 9.

“On the Application of the ‘Adjusted Winner’ Conflict Resolution Methodology to Divorce Cases: An Introduction for Forensic Economists”, *Litigation Economics Review*, volume 5, no. 2, Winter 2001, pp. 2 - 8.

“Economic Methodology under *Daubert*”, *Quarterly Comment*, Franklin County Trial Lawyers Association, volume 13, no. 4, Fall 2001, pp. 8 - 9.

“The Home Field Advantage: Implications for the Pricing of Tickets to Professional Team Sporting Events”, with Laura A. Boyd, in *The Economics of Sports: Volume II*, Andrew Zimbalist, ed., Edward Elgar Publishing Ltd., 2001, pp. 254 - 264.

“Forensic Economics: What It Can Do for You”, *BARbriefs*, Columbus Bar Association, September 1999, p. 4.

“The Use of Maple in Undergraduate Microeconomics Instruction”, Waterloo Maple Applications Center, http://www.mapleapps.com/categories/econ_fin_eng/economics/html/microecon.html.

“On the Use of Symbolic Computation in Undergraduate Microeconomics Instruction”, *Journal of Economic Education*, volume 29, no. 3, Summer 1998, pp. 227 - 246.

“From ‘Mom and Pop’ to Wal-Mart: The Impact of the Consumer Goods Pricing Act of 1975 on the Retail Sector in the United States”, *Journal of Economic Issues*, volume 31, no. 1, March 1997, pp. 223 - 232.

“The Home Field Advantage: Implications for the Pricing of Tickets to Professional Team Sporting Events”, with Laura A. Boyd, *Journal of Economics and Finance*, volume 20, no. 2, Summer 1996, pp. 23 - 31.

“The Home Field Advantage: Implications for the Pricing of Tickets to Professional Team Sporting Events: Errata”, with Laura A. Boyd, *Journal of Economics and Finance*, volume 22, no. 2-3, Summer/Fall 1998, pp. 169 - 179.

“On the Use of Symbolic Computation in Advanced Undergraduate Microeconomics Instruction”, published proceedings from the 7th annual Teaching Economics: Instruction and Classroom Based Research Conference, Robert Morris College, Coraopolis, PA, 1996.

“The Use of Maple in Undergraduate Microeconomics Instruction”, *MapleTech: The Maple Technical Newsletter*, volume 3, no. 3, Winter 1996, pp. 60 - 66.

“Resale Price Maintenance or Dealer Exclusive Territories? Toward a Theory of Product Distribution”, *The American Economist*, volume 40, no. 2, Fall 1996, pp. 86 - 94.

“Vertical Restraints and the Retail Free Riding Problem: An Austrian Perspective”, *Review of Austrian Economics*, volume 9, no. 1, 1996, pp. 119 - 134.

“Applied Price Theory Software for Windows”, computer software to accompany Microeconomics, 2nd edition, Michael L. Katz and Harvey S. Rosen, Richard D. Irwin, Inc., 1996.

“Applied Price Theory Software for Microeconomic Analysis”, manual to accompany Applied Price Theory Software, Richard D. Irwin, Inc., 1996.

“Strategic Behavior in Contests: Evidence from the 1992 Barcelona Olympic Games”, with Laura A. Boyd, *Applied Economics*, volume 27, 1995, pp. 1037 - 1043.

“The Short- and Long-Run Marginal Cost Curve: An Alternative Explanation”, with Laura A. Boyd, *Journal of Economic Education*, Summer 1994, pp. 261 - 266.

“The Choice Between Resale Price Maintenance and Exclusive Territories: Evidence from Litigation”, *Review of Industrial Organization*, December 1993, pp. 755 - 763.

“The Resale Price Maintenance Struggle: A Comment”, *American Journal of Economics and Sociology*, October 1993, pp. 447 - 454.

“The New Microcomputer Development Technology: Implications for the Economics Instructor and Software Author”, *Journal of Economic Education*, Spring 1993, pp. 113 - 127.

“The National Collegiate Athletic Association: A Study in Cartel Behavior”, by Arthur A. Fleisher III, Brian L. Goff, and Robert D. Tollison, book review, *Eastern Economic Journal*, October-December, 1992.

“Antitrust Economics on Trial: A Dialog on the New Laissez-Faire”, by Walter Adams and James W. Brock, book review, *Southern Economic Journal*, July, 1992.

Conference/Seminar papers and presentations:

“Economical Economic Expert Testimony in Employment Cases”, Ohio Employment Lawyers Association, Columbus, OH, April 12, 2013.

“Keys to Effective Expert Witness Examination in Ohio”, National Business Institute, Columbus, OH, October 9, 2003.

“Economics in the Liberal Arts: What It’s Like and How to Land a Job Doing It”, Department of Economics, The Ohio State University, Columbus, OH, October 24, 2002.

“Compensating the Victims of September 11: Economic Methodology Under the Victim Compensation Fund”, Omicron Delta Epsilon, Denison University, Granville, OH, October 17, 2002.

“Keys to Effective Expert Witness Examination in Ohio”, National Business Institute, Columbus, OH, September 19, 2002.

“Sports as Economics: What Economic Theory has to say about Athletic Competition”, Newark Area Financial Planning Group, Newark, OH, April 20, 2000.

“Economics in the Liberal Arts: A Viable Career Option”, Department of Economics, The Ohio State University, Columbus, OH, October 13, 1998.

“Forensic Economics: A Hypothetical Personal Injury Application”, Newark Tax Planning Group, Newark, OH, June 18, 1998.

“Can ‘Mom and Pop’ Compete with Wal-Mart?”, Denison University Organization Studies Summer Seminar, Denison University, Granville, OH, June 16, 1997.

“Maple in Undergraduate Economics: Applications from Consumer Theory”, Quantitative Methods, Econometrics, and Mathematical Analysis in Teaching Undergraduate Economics, Miami University, Oxford, OH, October 21, 1996.

“The Home Field Advantage: Implications for the Pricing of Tickets to Professional Team Sporting Events”, paper presented at the 42nd International Atlantic Economic Conference, Washington, D.C., October 12, 1996.

“On the Use of Symbolic Computation in Undergraduate Economics”, Great Lakes Colleges Association Teaching and Technology Workshop, Denison University, Granville, OH, April 20, 1996.

“The Impact of the Consumer Goods Pricing Act of 1975 on the Retail Sector in the United States”, paper presented at the annual meetings of the Midwest Economic Association, Chicago, IL, March 23, 1996.

“On the Use of Symbolic Computation in Advanced Undergraduate Microeconomics Instruction”, paper presented at the 7th annual Teaching Economics: Instruction and Classroom Based Research Conference, Robert Morris College, Coraopolis, PA, February 16, 1996.

“Teaching with Maple™: Consumer Theory in Economics”, Denison Scientific Association, Denison University, Granville, OH, September 20, 1995.

“Sports as Economics: Charles Barkley meets Adam Smith”, Denison University Faculty Lunch, Granville, OH, March 7, 1995; Denison University Alumni College, May 20, 1995.

“Intertemporal Strategic Behavior: Evidence from the 1992 Barcelona Olympic Games”, paper presented at the annual meetings of the Midwest Economic Association, Cincinnati, OH, April 1, 1995.

“Diamonds in the Rough? The Economics of Major League Baseball”, Ashland University, Ashland, OH, November 17, 1994.

“The Home Field Advantage and Team Sports Ticket Pricing”, paper presented at the annual meetings of the Western Economic Association International, Vancouver, British Columbia, July 2, 1994.

“The Comparative Advantages of Being Small: How Independent Retailers can Successfully Compete with Mass Merchandisers”, Scotts Training Institute, Columbus, OH, March 23, 1994.

“The Effect of Intraconference Competition on Post-Season Play: Evidence from the NCAA Tournament”, with Laura A. Boyd, paper presented at the Teaching Economics: Instruction and Classroom Based Research Conference, Robert Morris College, Coraopolis, PA, February 13, 1993.

“What Does Japan Do To Get Us So Upset?”, with Daniel O. Fletcher, Denison University Alumni College, Granville, OH, May 30, 1992.

“A Quick Tour of Applied Price Theory™: Intermediate Microeconomic Software”, paper presented at the annual meetings of the Eastern Economic Association, New York, NY, March 28, 1992.

“Vertical Restraints with Heterogeneous Retailers”, paper presented at the Microeconomics Workshop, The Ohio State University, October, 1990.

“Active Equity Transaction Cost Measurement”, paper presented to the United States Department of Labor on behalf of AT&T Corporate Management, October, 1986.

Professional Activities:

Textbook and software reviewer for Addison Wesley, McGraw-Hill, D.C. Heath, Little, Brown and Company, and the Academic Press.

Referee for *Journal of Forensic Economics*, *Litigation Economics Review*, *Journal of Industrial Economics*, *Journal of Economic Education*, *Journal of Economics and Finance*, *Journal of Economics and Business*, *Empirical Economics*, and *The American Economist*.

Mark Levin MD
6 Gel Court, Monsey NY, 10952

Robert P. Miller, Esq.

Rourke and Blumenthal

495 High South Street, Suite 450

Columbus, Oh 43215

May 25, 2014

Re: Daniel Sheffield

Dear Mr. Miller

Pursuant to your request, I have provided an oncology evaluation and report regarding Daniel Sheffield condition and care and his life expectancy. I have reviewed and analyzed the following medical records and data that were supplied as files on a CD:

01- 001-Clinic visits

02- 002- Emergency Room Admission

03- 003-Assessment & Plan Notes

04- 004- Progress Notes

05- 005- Plan of Care

06- 006-Procedure Notes(1)

07- 0070Procedure Note(2)



- 08- 008-Cytology
- 09- 009- Operative Report
- 10- 010-Hyperbaric O2 Therapy
- 11- 011-Radiology
- 12- 9120ECG Tracings
- 13- 0130Labs
- 14- 00140Lab Reports
- 15- 0015-Lab Flowsheets

I am a licensed and board-certified physician in internal medicine and medical oncology. I am licensed in NY and NJ and I am certified by the American board of Utilization Review and Quality Assurance and have a Owrker Compensation number in New York State. All my opinions are to reasonable degree of medical probability and may be revised if more information becomes available.

Medical and Treatment History:

Mr. Sheffield was a 72 year old male patient with follicular lymphoma lymphoma who was treated successfully with chemotherapy and unrelated donor allogeneic stem cell transplantation and he there were plans to discharge him from the hospital to a rehabilitation facility when a central line was removed on 7/5/2012. Within less than an hour, Mr. Sheffield became unresponsive and suffered bilateral strokes. Imaging studies showed bilateral air emboli in the brain. He went into a persistent vegetative state and ultimately expired.

My opinions:

It is my opinion that Mr. Sheffield had a normal life expectancy for his age. He suffered from few chronic medical conditions and those that he had were under control. With appropriate rehabilitative therapy he was expected to completely recover. The aggregate 5 year survival from studies in patients treated like Mr. Sheffield for the same disease ranges above 45% and as high as 75% in different studiesⁱⁱⁱ. Although treatment related mortality is high, the complication that Mr. Sheffield suffered is not treatment related, and he had survived the post-transplant time period in which most treatment related mortality would occur. Having done so, His chance of leading a normal life was substantially higher than even that reported in these studies. His life expectancy according to the actuarial tables used by Social Security was greater than 12 years.

Thank you,

M. Levin MD

Thank you,

M. Levin

M. Levin MD

¹ Ginna G. Laport, Changing role of stem cell transplantation in follicular lymphoma

ASH Education Book December 8, 2012 vol. 2012 no. 1 417-425

CURRICULUM VITAE

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Private Practice Office Address:

596 Anderson Ave, #302, Cliffside Park, NJ 07010

Languages: Russian (fluent), Spanish (very good), Hebrew (Very good), Yiddish (basic)

1. Education

Undergraduate

College/University: Yeshiva University, New York, New York B. A. 6/1980

Graduate

College/University: SUNY - Downstate Medical College, Brooklyn, New York M.D.
5/1984

Herriott-Watt University, Edinburgh Business School, Scotland, UK, M.B.A., 12/05

2. Post Doctoral Training:

Internships and Residencies, Internal Medicine, New York Downtown Hospital, New York, New York 1986 - 1987

Hahnemann University Medical Center, Philadelphia, PA 1984 - 1986

Hematology and Oncology Long Island Jewish Hillside Hospital Medical Center, New Hyde Park, N.Y 1987 - 1990

3. Military Service: None

4. Licensure: New York, 1990, New Jersey, 2000

5. Certification:

American Board of Internal Medicine-9/1987

Oncology-certified 11/1989

Hematology-certified 11/1990 (re-certification required)

American Board of Quality Assurance and Utilization Review - 01/2010

6. Narcotics Certification: DEA BLO415871 (Current NY, NJ)

7. University Appointments:

Department of Medicine. UMDNJ - Newark

Associate Professor of Medicine, 8/05 – 3/08

Clinical Associate Professor of Medicine, 3/08-3/09



Department of Medicine, Joan and Sanford I. Weil Medical College (Cornell)
Associate Professor of Clinical Medicine, 6/4/2003 - 12/03

Department of Medicine, SUNY-Medical College
Associate Professor of Clinical Medicine, 6/1998 - 6/2000
Assistant Professor of Clinical Medicine, 1991-6/1998

8. Hospital Appointments:

Holy Name Hospital, Department of Medicine
Associate Attending, 9/03 – Current

Richmond Memorial Hospital,
Department of Medicine, 10/08 – 4/09

University Hospital, UMDNJ
Newark. Attending, 9/05- 6/09

Department of Medicine, Lincoln Medical and Mental Health Center
Attending, 11/00 - 8/2003

Department of Medicine, Brookdale University Hospital
Associate Attending, 4/96 - 6/00

Department of Medicine, NY Community Hospital
Assistant Attending, 3/96 - 9/00

Department of Medicine, Staten Island University Hospital
Attending, 4/92 - 9/96

Department of Medicine, New York Downtown Hospital
Assistant Attending, 7/90 - 4/92

9. Other Professional Positions:

President, Medical Review and Information Center
A company that provides consulting services, including case and utilization review, reimbursement policies, producing policies and guidelines, advising on FDA submissions, high level medical writing and strategic planning and other services in the field of Hematology and Oncology to clients such as pharmaceuticals, insurers, and other corporate clients in the field of Healthcare (2006 – present).

President and CEO, Gaucher Centers of New York
A foundation dedicated to screening, diagnosis and facilitating treatment of patients with Gaucher and other genetic diseases (1995-2005)

Founder and Executive Director, Children Education Initiative (CHEIN) – supporting Special Education Initiatives in Rockland County, NY. Responsibilities include running self-contained classrooms within non-public mainstream settings. Responsible for all facets of development: Strategic Planning, Fundraising and Grants, Recruitment and Human Resources, Policies and Procedures, East Ramapo Central and Central Ramapo School District relations (8/2008- Present)

10. Awards and Honors:

Post-Graduate

Certificate of Achievement in Medical Research & Scholarly Activity, Department of Medicine, Staten Island University Hospital, 1997

Honored by Philadelphia County, Medical Society for Humanity in Medicine, 1985

Graduate

Honors in Physiology, Pathology, Pharmacology, Pediatrics, American Society of Anesthesiology, Preceptorship, 1980-1984

Undergraduate

Summa Cum Laude, Belkin, Manhattan Borough President's Citizenship Award, Manicoff Award, 1977-1980

11. Membership on Boards of Directors or Trustees:

Medical Advisory Board, The Musella Foundation for Brain Tumor Research and Information, 1993-2003

Medical Advisory Board, Actelion Pharmaceuticals, 2005 -current

12. Medical Student Experience:

Min-Med School, NJ Medical School, Introduction to Hematology and Oncology, 2006, 2007

New Jersey Medical School – Transition 2, Introduction to CBC, 2006-2008

Weil-Cornell

Introduction to Medicine (Hematology)

Spring 2003

SUNY-Downstate

Physical Diagnosis

1996-2002

13. Principal Clinical and Hospital Service Responsibilities:

UMDNJ - University Hospital in Newark, (8/05- 5/07)

Acting Chief of Hematology and Oncology

Holy Name Hospital (8/ 2003 - 7/2005)
Director, Sister Patricia Lynch Regional Cancer Center
Director, Hereditary Cancer Clinic
Director, Clinical Research
Director, Center for Jewish Genetic Diseases

Generations + Northern Manhattan Network (1/02-1/03)
(Lincoln, Metropolitan, Harlem Hospitals),
Health and Hospitals Corporation, the City of New York,
Director of the Network Cancer Center

Lincoln Medical Center, 11/00 – 8/03
Chief of Hematology and Oncology,
Chief of Service

Brookdale University Hospital and Medical Center, (9/96-3/7/00)
Co-Director, Division of Medical Oncology and Hematology
Director of Fellowship Training Program in Oncology and Hematology (11/96-3/7/00)
Director of Clinical Research in Oncology and Hematology (11/96-3/7/00)
Founder and Physician-in-Charge of the Comprehensive Sickle Cell Disease Program
(6/97 - 3/7/00)
Medical Director of Brookdale Inpatient Hospice Unit and at Hospice of New York (7/98
- 3/7/00)

Staten Island University Hospital
Attending Physician (4/92 - 9/96)
University Coordinator for Immunology Research and Program Development (7/94-8/96)

New York Downtown Medical Associates (7/90 - 4/92)

14. Major Committee and Institutional Assignments:

At various institutions:

Chair, Cancer Center Steering Committee
Director, Palliative Care Program
Chair: Cancer Committee
Member: Transfusion Committee
Institutional Review Board
Ethics Committee
Chief of Service – Medicine
Director of Research, Department of Medicine

Editorial Boards
Drugs of Today
Drugs of the Future
Cancer Therapy
Reviewer, Southern Medical Journal, International Journal of Cancer

International Reviewer, Medical Science Monitor

15. Memberships, Offices, and Committee Appointments in professional societies:

None

16. Major Research Interests:

Lipid Storage Diseases, especially Gaucher Disease

Hereditary Breast and Ovarian cancers (BRCA related cancer) and Early Breast Cancer

Cancer Control: Community Education, Screening, and Outreach

Bioethics

17. Grant History:

Principal Investigator

Roche

Phase I study of Capecitabine and Gemcitabine in metastatic colorectal cancer and other solid malignancies (2000 -2001) \$40,000.00

(Study did not accrue because I changed positions)

Eli Lilly

Phase I-II study of Cyclophosphamide, Doxorubicin, Gemcitabine in locally advanced and metastatic breast cancer (1997- 2000)

\$20,000.00 – Study Published

Rhone-Poulenc Rorer, Inc. and Glaxo

Phase II study of Taxotere /Vinorelbine/G-CSF in metastatic non-small cell lung cancer (1997- 1999) \$ 40,000.00, Study Published

18. Major Administrative Responsibilities:

- Acting Chief of Hematology and Oncology – UMDNJ- Newark
- Director, Sister Patricia Lynch Regional Cancer Center, Holy Name Hospital, Teaneck, NJ (11/2003 - 6/30/05)
- Director of Cancer Center, Generations Manhattan + Network of the Health and Hospital Corporation, New York, NY (1/2002/ - 1/2003)
- Chief, Section of Hematology and Oncology, Lincoln Medical and Mental Health Center, Bronx, NY (11/00 - 8/03)
- Associate Director of Cancer Center at Lincoln Medical and Mental Health Center; Chief of Service, Oncology/ Medicine (11/00 - 8/03)
- Co-director, Division of Medical Oncology and Hematology, Brookdale University Hospital, Brooklyn, NY (11/96 - 3/00)
- Director, Palliative Care Program (8/02 - 9/03)
- Medical Director, Hospice of New York (8/02 - 9/03)

19. Private Practice:

Renaissance General Medicine, Cliffside Park, NJ

Consultative Hematology and Oncology Practice(10/03 - Present)

Staten Island Physicians Group, Locum Tenens Oncologist, Staten Island, NY (10/08-2/09)

Catskills Regional Cancer Center, Locum Tenens Oncologist, Harris, NY (7/10/00-10/16/00)

HemOncare, PC and Brookdale University Hospital Faculty Practice, Brooklyn, NY, Part time Private Community Practice (11/96 - 3/7/00)

Downtown Medical Associates, Multi-specialty group that functioned as de-facto faculty practice at New York Downtown Hospital, New York, New York (8/90-4/92)

20. Articles:

Levin M, Veliz M, Anemia of medicinal leech therapy, New Jersey Journal of Medicine, submitted

Levin, M. (2003). Breast Cancer: Issues in risk reduction, screening, surveillance, early identification and treatment. Drug News Perspect, 16(6), 395-399.

Levin, M. (2003). Ethical, religious and cultural aspects of hereditary cancer in Jewish communities. Cancer Therapy, 1(1), 261-262.

Levin, M. (2003). Upper Venous Thrombosis (Editorial). Southern Medical Journal, 96(7), 1-2.

Levin, M., & Doss, R. (2002). Neuroendocrine carcinoma of the urachus. Uro-oncology, 2(3), 145-147.

Levin, M., Durgam, S., & Novetsky, A. (2002). Cytosan, Adriamycin, Gemcitabine (CAG) in the treatment of metastatic breast cancer. Cancer Investigation, 20(7), 872-875.

Gupta, M., & Levin, M. (2001). Gaucher disease presenting with littoral-cell splenic lymphoma. American Journal of Hematology, 68, 61-62.

Levin, M., & Birnbaum, I. (2000) Jewish Bioethics? J Med Phil, 25, 469-484.

Levin, M. (2000). Creating a clinical research program in a teaching hospital environment. Managed Care and Cancer, 2(2), 28-32.

Levin, M. (1999). Multiple home IV therapies for a patient with AIDS, Non-Hodgkin's lymphoma, Kaposi's Sarcoma, CMV pharyngitis and Pneumocystis Carinii pneumonia. Home Health Care Consultant: The Journal of Alternate Site Medicine and Management, 6(8), 10-11.

- Levin, M. (1999). Screening Jews and genes: A consideration of ethics of genetic screening within the Jewish community - challenges and responses. *Genetic Testing*, 3(2), 207-213.
- Levin, M., Mermelstein, H., & Rigberg, C. (1999). Correlates of compliance with recommendations for chemotherapy. *Cancer Nursing*, 22(5), 1-5.
- Levin, M. (1998). How to write a case report. *Res Staff Phys*, 44, 60-63.
- Modahar, C.J., Levin, M., Roy, J., & Conti M. (1996). Translocation (3:3) in a patient with thrombocytopenia and erythroid dysplasia. *Ca Genetic Cytogenetic*, 87, 11-13.
- Levin, M., & Cho, S. (1996). Acute tumor lysis syndrome in high grade lymphoblastic lymphoma after a prolonged episode of fever. *Med Ped Onc*, 26:417-418.
- Rollins, H., Levin M., & Goldberg S., Mody K., & Forte F. (1995). Solitary extramedullary plasmacytoma of the epiglottis. *Otolaryngology-Head and Neck Surgery*, 112, 754-757.
- Levin, M., Pakarakas, R. M, Chung, H.A., Maiman, M., & Goldberg, S. (1995) Primary mammary carcinoma of the vulva: A case report and review of the literature. *Gyn Oncol*, 56, 448-451.
- Levin, M, Klein, E., & Wertheim, S. (1995), Isolated intraosseous primary lytic meningioma. *J Neuroimaging*, 5, 247-248.
- Roth, R., & Levin, M. (1994). Subcutaneous emphysema. *Consultant*, 34(7), 1096.
- Levin M., & Hertzberg L. (1994). Kaposi sarcoma of bone marrow presenting with fever of unknown origin. *Med Ped Onc*, 22, 410-413, 1994.
- Levin, M.(1994) Acute hypersplenism and thrombocytopenia: A new presentation of disseminated mycobacterial infection in patients with acquired immunodeficiency syndrome. *Acta Hematologica*, 91, 28-31.
- Levin, M., & Grunwald, H. (1994). Successful use of vincristine in refractory thrombotic thrombocytopenic purpura. *Acta Haematologica*, 85:37, 40.
- Levin, M., Jacobs, J., & Polos, P. (1988). Acute mercury poisoning and mercurial pneumonitis from gold ore purification. *Chest*, 94, 554-556.

22. Books and textbook chapters

- Joglekar, S., & Levin, M. (2006). Colorectal Cancer, in L. Adama (Ed.), *On Cancer in Africa*, English and French editions, Afro-cancer Foundation, Paris, 2006

Levin M. (1996). *Novarodok: The movement that lived in struggle and its unique approach to the problem of man*. Livingston NJ: Jason Aronson Publishing Co.

Levin M. (2002). *With all your heart: The Shema in Jewish liturgy, worship and life*. Jerusalem/ New York: Targum/Feldheim.

Levin. M (2006). *The Rabbis' Advocate, Hakham David Nieto and his Second Kuzari*, New York, Yashar Press

Levin M. *The Dawn of Redemption: What the books of Ruth and Jonah teach about alienation, redemption and return*, in-press, Urim Publishers (French translation: *Ruth: Son Message et la Signification Dans Nos Vies*, Collection ScripTorah, Paris, 2009)

23. Abstracts

Olympia, C., Portilla, D., & Levin, M. (2002). Utility of erythropoietin in anemia of chronic illness. *Proceedings of the Society of General Internal Medicine*, 17, S1:129.

Levin, M, & Novetsky, A. (2000). A Phase II study of Docetaxel and Vinorelbine for advanced and metastatic non-small cell lung cancer. *Proceedings of American Society of Clinical Oncology*, 19, 2068

Fan, R., Levin, M., & Shin, S. J. (1999). Comprehensive sickle cell pain; Management program impact on the length of stay and re-admission rates of patients with sickle cell disease. *Am College of Clin Pharmacy Annual Meeting Proceedings*.

Levin, M., Ahmed, L. F., & Novetsky, A. (1999). Cytoxan, adriamycin, gemcitabine (CAG) regimen in the treatment of metastatic and locally advanced breast carcinoma. *Breast Cancer Research and Treatment*, 50:323, 1999.

Hayes, R.L, Levin, M., Musella, A., & Selker, R.G. (1999). Virtual trials: an internet based brain tumor registry., *Proceedings of American Association for Cancer Research*, #264.

Levin, M, & Novetsky, A. (1999). Docetaxel and navelbine for advanced and metastatic non-small cell lung cancer. *Proceedings of American Society of Clinical Oncology*, #147.

Levin, M., Fan R. M, Ghani, M., & Novetsky, A. (1998). Comprehensive sickle cell program: Impact on the length of stay and admission/readmission rate of patients with sickle cell disease. *National Sickle Cell Disease Annual Meeting Proceedings*.

Levin, M. (1996) Factors associated with willingness to accept investigational chemotherapy in patients with solid malignant tumors. *Proceedings of American Society of Clinical Oncology*, 15,1639.

Dosik, D., Levin, M., & Hertzberg, L. (1993). Diagnostic utility of bone marrow core biopsy, bone marrow aspiration with culture, and lysis centrifugation blood culture in HIV patients with fever of unknown origin. *Blood*, 82, 2480.

Levin, M., & Kalra, J. (1990). Cisplatin and plasma iron studies: An investigation of patterns and correlation with toxicities. *Proceedings of American Society of Clinical Oncology*, 9,301.

24. Reviews:

M. Levin, M. Veliz, New therapies in the treatment of renal cell carcinoma *Drugs Fut* 2007, 32(6): 527

Levin, M. Fabry's disease, *Drugs of Today*, 42(1):65-70, 2006

Levin, M. (2004). Multidisciplinary approach to breast cancer management. *Drug News Perspect*, 17(3), 1-7

Joglekar, S., & Levin, M. (2004). The promise of Thalidomide: Evolving indications. *Drugs of Today*, 40(3), 197-204.

Levin, M., & R, Doss. (2002). Neuroendocrine carcinoma of the urachus. *Uro-oncology*, 2(3), 145-147.

Levin, M., & D'Souza, N. (2002). Iressa, *Drugs of the Future*. 27(4), 339-345.

Levin, M., & D'Souza N. (2001). Fulvestrant. *Drugs of the Future*, 26(9), 841-849.

Levin, M., Pleskova, I., & Pastores, G. (2001). Gaucher disease in adults. *Drugs of Today*, 37(4), 257-264

Levin, M. (2001). Recent advances in platelet and bone marrow physiology and myeloproliferative and myelodysplastic disorders. *Drugs of Today*, 37(12), 803-809.

Levin, M. (2001). Taxanes in breast cancer chemotherapy. *Drugs of Today*, 37(1), 57-65.

Levin, M. (2001). Breast Cancer: A Background. *Prous Sciences: Drug Research and Development*, prous.com

Levin, M. Breast Cancer: A Background. *Prous Sciences: Drug Research and Development*, prous.com

Levin, M (2000). Gaucher Disease, *Adam.com Online Medical Encyclopedia*, 2000

Levin, M. (1999). Basic medical ethics. *Res Staff Phys* 45(8), 56-64.

Levin, M. (1998). How to write a case report. *Res Staff Phys*, 44, 60-63.

Levin, M. (1997). Chemotherapy in Brain Cancers. <http://www.virtualtrials.com>.

25. Reports, Letters

Levin, M. (2003). Direct to consumer advertising for genetic testing. *JAMA*, 289(1), 45-46.

Levin, M. (1998). Familial Mediterranean Fever. *Ann Int Med*, 129, 581-582.

Levin, M. (1998). The yield of bone marrow biopsy and culture compared with blood culture in the evaluation of HIV infected patients for mycobacterial and surgical infections. *Am J Med*, 105, 457-458.

Levin, M. & Aziz, M. (1997). Steroid responsive pneumonitis after fludarabine therapy. *Chest*, 111, 1472-1473.

Levin, M., Caravone, D., Geiser, C. (1996) Mitoxantrone extravasation and tissue necrosis. *Amer J Health-System Pharm*, 53, 1194-1195.

Levin, M. (1994). Splenectomy in AIDS. *AIDS* 8(1), 138.

Levin, M. (1993). Silicon implants and the risk of breast cancer. *NEJM*, 328, 661.

Levin, M. (1993) Scientific misconduct. *JAMA*, 269, 3105, 1993

Levin, M. (1993). Clinical problem solving: Lucky lady. *NEJM*, 329(4), 279.

Levin, M. (2003). Colon cancer: ASCO 2003 Meeting report. *Drug News and Perspectives*, 16(5), 293-237.

Levin, M. (2001). Chemotherapy Foundation XIX: Innovative cancer therapy for tomorrow. *Drugs of Today*, 37(12), 823-828.

Levin, M. (2001). Meeting Report of the American Society of Preventative Oncology. *Drugs of Today*, 37(4), 275-279.

Levin, M. (5/16/2001). 4th Annual Gastric Cancer Congress, Timely Topics in Medicine:Oncology/ Gastroenterology. tmed.com, 5/16/01

Levin, M. (2003). Beyond Psychology, *Jewish Action*, 64 (2), 22- 25, 2003

Levin, M. (2000). Advances in controlling chemotherapy induced nausea and vomiting. cbshealthwatch.com.

Levin, M. (2000). Thalidomide: Old scourge, new promise. cbshealthwatch.com.

Levin, M. (2000). Hypercalcemia of Malignancy. cbshealthwatch.com.

26. Patents: None

Appendix

Invited Speaker at International of National Meetings within the past 5 years:

A. International

Gemcitabine based chemotherapy for metastatic breast cancer, Gemcitabine Investigators Meeting, San Antonio, Tx., 3/4/00

BRCA related cancers, Why is this gene different from other genes, Columbia University Institute for Science and Religion, 2/16/03

B. National and Local

Zavesca Recent Advancements and Slide Review, Actelion Corporation Medical Boards, 7/22/08 and 9/23/08

BRCA Related Breast and Ovarian Cancers, Grand Rounds for the Department of Medicine, East Orange VA, May 27, 2006

Inherited Breast and Ovarian Cancer, Cancer Center Grand Rounds, UMDNJ- Newark, May 22, 2006

Department of Medicine Combined Grand Rounds (University Hospital, Hackensack University Medical Center, East Orange VA), Inherited Illness in Ashkenazi Jewish Communities, March 22, 2006

Where we come from: Genetics and genetic markers. Congregation Sons of Israel, Lakewood, NJ, 3/8/05

Organizer and Chair of Planning Committee, Conference on Jewish Genetic Disorders, Teaneck NJ, 11/11/04 (http://www.holyname.org/about_holy_name/conference.htm)

Gaucher Disease and Mucopolysaccharidoses, Pediatric and Gynecology Combined Grand Rounds, Kimbal General Hospital, Lakewood, NJ, 11/8/04

Genetic Illness: Scientific and Clinical Concepts, Association of Orthodox Jewish Scientists Annual Convention, Spring Glen NY, 8/1/04

Adjustment to Genetic Illness: Family and Communal Issues, Center for Applied Psychology, Spring Valley, NY, 6/14/04

Hereditary Breast and Ovarian Cancer, CME, Englewood, NJ, 6/8/04

Lipidoses, Russian AMA. Boston, MA, 6/1/04

Hereditary Breast Cancer, Medicine Grand Rounds, Holy Name Hospital, Teaneck, NJ, 10/17/03

Update in Oncology, Medicine Grand Rounds, Holy Name Hospital, Teaneck, NJ, 1/27/04

Ovarian Cancer Overview, Ob/ Gyn Grand Rounds, Holy Name Hospital, Teaneck, NJ, 3/17/04

Grand Rounds in Obstetrics and Gynecology, Overview of Breast Cancer Issues, Lincoln Medical and Mental Health Center, Bronx, NY – 12/11/02

Issues in Screening and diagnosis of BRCA1 and 2 breast cancers in the high risk populations, Sara Lawrence College Program in Human Genetics Symposium, 3/28/ 02

Gaucher and Related Diseases, Pediatric Grand Rounds, Good Samaritan Hospital, Suffern, NY, 10/17/01

Genetic Screening in the Jewish Community (Keynote Lecture), Association of Orthodox Jewish Scientists Annual Meeting, New Paltz, NY, 8/5/2001

Breast Cancer, Grand Rounds in Internal Medicine, Lincoln Medical and Mental Health Center, Bronx, NY, 12/16/01

Creating and Managing a Clinical Research Program, Cancer Center of Albany University Medical Center, 9/15/01

Revised 10/10/2010