

Volume 89 No. 11 November 2006

Medicine  Health  
RHODE ISLAND

PUBLICATION OF THE RHODE ISLAND MEDICAL SOCIETY



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**ERRATUM:** In "The Rhode Island Free Clinic: Access to Health Care for the Uninsured," by Lisa Smolski, *Medicine & Health/Rhode Island*, October 2006, the web site of the Free Clinic was incorrect. The correct site: [www.rifreeclinic.org](http://www.rifreeclinic.org) Several copies may be missing pages. If you received an incomplete copy, please call Joan Retsinas, phone 272-0422, for a replacement.

*Medicine and Health/Rhode Island* (USPS 464-820), a monthly publication, is owned and published by the Rhode Island Medical Society, 235 Promenade St., Suite 500, Providence, RI 02908. Phone: (401) 331-3207. Single copies \$5.00, individual subscriptions \$50.00 per year, and \$100 per year for institutional subscriptions. Published articles represent opinions of the authors and do not necessarily reflect the official policy of the Rhode Island Medical Society, unless clearly specified. Advertisements do not imply sponsorship or endorsement by the Rhode Island Medical Society. Periodicals postage paid at Providence, Rhode Island. ISSN 1086-5462. POSTMASTER: Send address changes to *Medicine and Health/Rhode Island*, 235 Promenade St., Suite 500, Providence, RI 02908. Classified Information: RI Medical Journal Marketing Department, P.O. Box 91055, Johnston, RI 02919, phone: (401) 383-4711, fax: (401) 383-4477, e-mail: [rimj@cox.net](mailto:rimj@cox.net). Production/Layout Design: John Teehan, e-mail: [jteehean@jff.net](mailto:jteehean@jff.net).



## Commentaries

# Astasia-Abasia as an Incidental Finding



**Astasia-abasia is a neurological term**, created in the 19<sup>th</sup> century, to describe a psychogenic gait disorder. The term technically means unable to sit and unable to stand, but it has been employed primarily, if not exclusively, as an umbrella term for a gait disorder without a physiological explanation. It is usually employed to describe an attention-attracting walk, a “Minister of Silly Walks” type of gait that might be seen on Monty Python’s Flying Circus. We do not use this term for the patient who has a gait that looks like Parkinson’s disease, or a gait in which each step is taken in an exceedingly laborious fashion, one very slow, plodding step after another as if the weight of the world was being conveyed, step by painful step, on the patient’s shoulders, all on a psychiatric basis. Astasia-abasia is flashier. It’s usually an ataxic gait, drunken in appearance. The patient staggers into the wall on the right, runs forward a few steps, with a dart to the wall on the left, a few seconds of standing on one foot with near falls, a genuflection here or there and the patient out of breath at the end.

I recently saw a patient for a third opinion. She had abnormal brain MRIs and a puzzling gait disorder. A famous neurologist in a nearby city couldn’t understand the gait. The neurological exam with the patient seated predicted certain problems that should have been evident on standing, but weren’t. The neurologist was at a loss and said so. The second opinion, from a famous Midwest referral center, triggered this column. When I read the consultation note, I started, as I usually do, with the impression at the end of the note. If I’m seeing a patient within a short time of another neurologist’s assessment, the exams should be similar. If the conclusions are different, I read the exam closely to see if and where our exams differed, or where our histories differed, or, most interestingly,

where our emphases or knowledge bases differed to cause different conclusions.

This note’s conclusion was intended to impress, and it did. Our knowledge bases did, indeed, differ. In addition to the mundane possible diagnoses were a slew of disorders I had never heard of. To be honest, my first thought, before I processed the material, says more about me than him. I wondered if the neurologist knew this stuff off the top of his head, or had looked things up before dictating the note. I’m still wondering. I then assumed that he specialized in this area of autoimmune disorders, which this patient did, in fact, suffer from. As I mused about how much more this neurologist might know than I knew, and how I could have reached my advanced age knowing so little, I reviewed his note, skimming the history, to be sure it matched mine and then comparing his examination to mine. The one thing all neurologists pride themselves on is their exam. So I was surprised to see the gait described as “astasia-abasia.” Now that is actually an interpretation and not a description, so the term really belonged at the note’s end, in the impression. This detracted a bit from the erudite conclusion, and helped restore a small amount of self respect, but it was a solid piece of neurology. The gait disorder was psychogenic, he opined. So I looked back to the erudite conclusion, which I reread several times, to see where this was discussed. In this impressive collection of arcane diagnoses and musings, nothing alluding to “conversion disorder,” “psychogenic,” “secondary gain,” “functional,” “non-physiologic” or referral to a psychiatrist was mentioned. Astasia-abasia as an incidental finding!

How could this be? Did the doctor simply get overwhelmed with finding explanations for the abnormal MRIs? Is it conceivable that he thought the functional gait disorder was of no more sig-

nificance than a palmomental reflex? What could have been going through his mind? Of course I don’t know but what I think is this. The patient had an unusual problem whose diagnosis eluded a famous doctor from a prestigious hospital in the northeast, and then the patient came to the great national referral center, with bona fide MRI documented lesions, and a puzzling collection of symptoms and signs, some of which were inconsistent with neurophysiological principles. I suspect that diagnoses of psychogenic disorders are discouraged at this institution since these bring ill will. Many patients find psychogenic explanations demeaning and I suspect that fewer patients visiting that center get that diagnosis than have it. How else to explain avoiding inclusion of such a finding, more important even than our beloved Babinski sign? Could this doctor have “forgotten” to discuss this? We all forget bits and pieces of the history or exam that merit comment, but this is like doing an eye exam and neglecting to note that the patient was blind.

I think that social circumstances prevented an honest assessment. Doctors don’t like to tell patients who travel two thousand miles, after seeing one world expert, to see another one, that “it’s all in your head.”

The primary role of the neurologist has always been, and continues to be, to localize the lesion, then to discuss the pathophysiology. In this case social norms caused the “expert” to ignore his own findings. Ignoring a psychogenic physical finding is bad medicine as it leads to incorrect treatment.

— JOSEPH H. FRIEDMAN, MD

# The Hazards of Unrestrained Curiosity

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**Most of humanity believes that acquiring the bare necessities of life represents a major achievement.** The struggle to survive too often leaves little energy for other pursuits. Limitless curiosity and wonderment, for example, remain behaviors bestowed principally on that small fraction of mankind whose station in life allows then the luxury of an inquiring mentality; and who, additionally have the courage to doubt. And since sustained curiosity has few genuine advocates, it is often disparagingly relegated to the level of childish activity or the risky behavior of adolescent cats. Indeed, in some cultures, curiosity is looked upon with mistrust since, by its nature, it erodes established canons of belief, both secular and religious.

Sometimes, though, history provides us with an astonishing blessing, a human who devotes his adult life to the relentless search for answers to heretofore unanswered questions. Such a man was John Hunter [1728-1793], tenth offspring of a rural family from the Lanarkshire district of Scotland, 40 kilometers southeast of Glasgow.

Hunter's youth, and specifically his schooling, were undistinguished. He left any semblance of formal education at age 15 to apprentice himself to a cabinetmaker in Glasgow. Failing at this he then sought employment with his older brother, William, who had already established himself as a teacher of anatomy and surgery in London. So young Hunter journeyed to London in 1748 to work as his brother's assistant in the meticulous labor of dissecting parts of the human cadaver for use in the education of apprentice surgeons. Within a year, he had learned so much about the structural intricacies of the human body that he was now encouraged to teach others. Simultaneously he enrolled as a student of surgery at St. Bartholomew's Hospital.

Hunter learned the hard lesson that humans are allotted but 24 hours in each day. He learned, too, that social dalliances, lavish meals, frivolities and other recreational activities consumed time that might otherwise be more productively invested. Accordingly, he scheduled his days with great care, assigning at least six hours each night to his new enthusiasm: inquiries into the mysteries of nature. Except for a few years as a military surgeon in the British armies, he devoted the remainder of his life to his essentially self-taught profession [surgery], his core vocation [biologic and botanical research] and his avocation [the building of a museum of biologic objects of educational merit.]

In 1755, he was persuaded to enroll at Oxford. He lasted but two months since formal education then required memorization of vast amounts of literature written in dead languages while any creative analyses were dismissed as impertinences. He happily returned to his London quarters to refine his surgical skills and study the lessons that meticulous dissections offered to him. Hunter arranged with the various menageries in the London region to study the lessons that meticulous dissections offered to him., as well as the remains of animals that had died. From his vast experience in comparative vertebrate anatomy and embryology, he wrote paper after paper enlightening the scientific world on the intimate developmental and structural resemblances between the bony creatures.

By age 45 his home became a combination of modest living quarters and a small dispensary for his many surgical patients, while

the bulk of the space was devoted to his laboratories, with enclosures containing living fish, reptiles, birds, rodents and larger mammals. Still further space contained insects from distant places sent to him by scientists becoming aware of his productive investigations.

Hunter's research touched upon the relationship of blood-flow to the capacity of body-parts to grow. This led him eventually to an extended study of the blood supply of the gravid uterus, how the placenta develops and how the maternal blood supply and the blood vessels of the fetus relate to each other.

Hunter's studies were incredibly far-reaching. He explored how bees found their way back to their hives, how caterpillars created silk, the circulation of essential fluids beneath the bark of deciduous trees, the nature of inflammation and the significance of pus, the treatment of gunshot wounds, regeneration of reptilian limbs, the nature and biological limitations of organ transplantation, the hereditary aspects of color-blindness, the relationship of plumage to sexual maturity in birds, the spread of smallpox to the fetus [Jenner, discoverer of the principle of vaccination, was Hunter's favorite pupil], resuscitation of drowning victims, the study of fossil bones and their relationship to extant species, how teeth develop, how fishes communicate, the mammalian nature of whales, how certain fish develop electrical currents, hibernation in various species and how animals generate heat. His ceaseless seeking was in the vain pursuit of those enigmatic forces which produce and sustain life. Perhaps, he thought, it might be within the circulating blood and therefore much of his later researches concerned itself with blood, its regeneration and its life-giving purpose.

Hunter's avid, incautious curiosity led him to study the communicability of the venereal diseases, then an urban scourge throughout Europe. Hunter, it is said, took some pus from a patient with syphilis and injected it into his thigh. After a short interval it produced an intense inflammation which he described in his 1786 *Treatise on Venereal Disease*.

Hunter's later years were filled with numerous honors, national and international. His surgical skills, often obscured by his many discoveries in what was then called natural philosophy, were considered exemplary. By 1776 he was considered to be the outstanding surgeon of the realm and was appointed as Surgeon-Extraordinary to King George III. Hunter's great personal museum is now a national treasure in London, supervised by the Royal College of Surgeons, and open to the public.

The power of sustained curiosity, like the baser visceral passions, may be formidable in some people. And rarely, it may be their most precious life-force. DeWolf Howe wrote a brief poem about such people:

*Now, thieving time, take what you must,  
Quickness to hear, to move, to see,  
When dust is drawing near to dust  
Such diminutions needs must be.  
Yet leave, I leave exempt from plunder,  
My curiosity, my wonder.*

— STANLEY M. ARONSON, MD

# Rhode Island Chapter, American College of Physicians Annual Meeting, May 10, 2006, at Radisson Airport Hotel – Abstracts

## LPS Injection Ameliorates Renal Inflammation and Injury Via NF-Kappa B Inhibition In Experimental Chronic Renal Failure

*Moses Aboagye-Kumi, MD, Michael W. Ham, MD, Rujun Gong, MD, PhD, Lance D. Dworkin, MD  
Division of Renal Diseases, Rhode Island Hospital*

Following 5/6th nephrectomy (remnant), rats develop hypertension, proteinuria, interstitial inflammation, and renal dysfunction, which resembles the pathway by which diverse forms chronic renal failure progress in man. NF kappa B is a nuclear transcription factor that resides in the cytoplasm until activated by phosphorylation of its p65 subunit, after which it traverses the nuclear membrane and induces production of a panel of pro-inflammatory cytokines. NF-kB is activated in remnant kidneys and is thought to play a critical role driving inflammation and injury in this model. Lipopolysaccharide (LPS) is the most potent activator of NF-kB and is often used to enhance or induce inflammation in animal models of disease. For example, sub lethal doses of LPS induce a syndrome mimicking lupus nephritis in mice. This study examined the effects of LPS on renal inflammation and injury in remnant rats.

### Methods:

Male Sprague-Dawley rats that underwent 5/6th nephrectomy were injected with LPS (n=6) (1mg/kg, i.p., daily) or vehicle

(CON, n=4) for 8 weeks. 24-hour urinary protein excretion and awake systolic blood pressure measured by tail cuff were determined at 2-week intervals. At 8 weeks, mean femoral arterial pressure (MAP) was directly measured and glomerular filtration rate (GFR) determined by inulin clearance. Kidneys were perfused, harvested and examined for morphologic evidence of inflammation and injury. Western blot was used on portions of kidneys to assess the extent of inflammation (ED-1), fibrosis (vimentin), and the ratio of total to phosphorylated (activated) NF-kB. Reverse transcription PCR (RT-PCR) was performed on splenic tissue using primers specific for interleukins IL-10, IL-2, IL-1RA. Immunofluorescence staining for ED-1 was also performed on kidney sections.

### Results:

Paradoxically, LPS rats displayed lower levels of protein excretion and a trend toward lower awake blood pressures. After 8 weeks, renal blood flow was significantly increased in the LPS group and mean arterial pressure was lower for the LPS group. There

was no difference in GFR. Light microscopy revealed that LPS reduced inflammatory infiltration and fibrosis in the remnant kidney. ED-1 immunofluorescence staining confirmed the H&E observations. Western blot analysis demonstrated that LPS also suppressed ED-1 and vimentin as compared to CON. Although the LPS animals' spleens were markedly enlarged, IL-10, IL-6, IL-2, IL-1RA were variable in LPS and CON rats; no clear trend could be discerned. In contrast, western analysis revealed that the ratio of activated to total NF-kB was significantly reduced by LPS, consistent with a potent anti-inflammatory effect.

### Conclusions:

Activation of NF-kB, a potent transcription factor for pro-inflammatory cytokines, is decreased in the kidneys of remnant rats treated with sub lethal LPS injection. This results in reductions in proteinuria and long-term suppression of renal inflammation and fibrosis in this model of chronic renal disease.

## Role Of YY1 In Regulating Human BNP Gene Expression In Cardiac Myocytes

*Feng Wang, MD, Roger Williams Hospital, and David Gardner, MD, University of California, San Francisco, CA*

Increased B-type natriuretic peptide (BNP) gene expression is regarded as one of the hallmarks of cardiac myocyte hypertrophy. Recently it was reported that level and DNA binding activity of Yin Yang 1 (YY1), a multi-functional zinc finger protein related to the Kruppel family of transcription factors, were increased in failing human left ventricles and in a mouse model of hypertrophic cardiomyopathy. In this study, we examined the role of YY1 in regulating BNP gene expression in cardiac myocyte hypertrophy.

### Methods and Results:

We identified a consensus YY1 binding sequence in the proximal human BNP

promoter. Binding of YY1 to this site was confirmed by electrophoretic mobility shift assay. Binding was inhibited by wild type but not mutant promoter sequence and was shifted with anti-YY1 antibody. Mutation of this YY1 site reduced basal expression of hBNP gene by 62% (p<0.01), and completely suppressed endothelin (ET)- and mechanical strain-dependent activation of the BNP gene promoter in neonatal cardiac myocytes. Co-transfected YY1 amplified basal and ET-dependent (maximal ~2-fold) expression of a -198 BNP luciferase reporter in a dose-dependent fashion (p<0.05). This amplification was not seen with a reporter harboring a mutated YY1-binding site. Co-

transfection of a C-terminally truncated YY1 mutant lacking the zinc-finger motifs required for DNA binding did not alter BNP promoter activity. YY1 direct interaction with the BNP promoter within the context of the intact cell was demonstrated by DNA-immunoprecipitation assays that showed that both ET and mechanical strain led to increased YY1 protein binding to the promoter. This association peaked at 15-30 minutes following stimulus application before returning slowly to baseline. Finally, ET stimulation caused deacetylation of YY1 protein with a time course that correlated with YY1 DNA binding to the promoter, but did not alter total YY1 protein levels.

**Conclusions:**

We have identified a YY1 binding site in the BNP promoter. Agonist-dependent deacetylation of YY1 leads to increased as-

sociation of this YY1 with the BNP promoter and subsequent stimulation of gene transcription. This provides additional support for a role for YY1 in regulating the

transcriptional program that accompanies cardiac hypertrophy.

## Diffuse Membranoproliferative Glomerulonephritis Presenting As Pulmonary Renal Syndrome

Roy L. Kao, Kathleen F. Doyle, MD, Walter J. Goula, MD, John W. O'Bell, MD – Brown Medical School

Pulmonary renal syndrome, a combination of acute glomerulonephritis and pulmonary hemorrhage, is most commonly caused by anti-glomerular basement membrane antibodies (Goodpasture syndrome), anti neutrophilic cytoplasmic antibody vasculitides (including Wegener granulomatosis), lupus, and anti-streptococcal antibodies. We describe a patient without evidence of lupus or crescentic glomerulonephritis who presented with pulmonary renal syndrome.

**Case report:**

A 54 year-old Hispanic man had recently been hospitalized for 3 weeks in Detroit for a 2d history of dyspnea. During hospitalization, he developed new-onset hypertension, renal failure, abdominal pain, cephalic vein thromboembolus, epistaxis, and streaked hemoptysis. After coming to Rhode Island, he presented again to the hospital for continued shortness of breath

and abdominal and back pain. Physical exam was notable for BP=190/117mmHg, HR=105/min, RR=22/min, SaO<sub>2</sub>=91% on room air, multiple yellow tongue ulcers, decreased breath sounds at lung bases bilaterally, and 2+ bilateral lower extremity edema. WBC=15,600/ $\mu$ , BUN=51mg/dL, Cr=3.5mg/dL, Albumin=1.3g/dL. Urinalysis showed 75 RBCs/HPF and 45 WBCs HPF. Urine protein=10.67g/24h. ESR=102mm/h. Viral hepatitis serologies, blood cultures, complement, PPD, C- and P-ANCA, ANA, ACE, cryoglobulin, and rheumatoid factor were normal. Chest CT showed moderate pleural effusions and calcified lung and liver granulomas.

His abdominal pain and tongue ulcers resolved within 1 week, but despite antibiotics, diuretics, and empiric pulse glucocorticoids his renal function deteriorated and he grew increasingly dyspneic. An episode of frank hemoptysis prompted intubation in

the MICU. Anti-glomerular basement (Anti-GBM) antibody titer was elevated at 18.7EU/mL, and renal and respiratory function improved with plasmapheresis and continued glucocorticoids. Renal biopsy, however, showed diffuse membranoproliferative glomerular disease, with immunofluorescence positive for 2+ C3 and 1+ IgG deposition in an exclusively mesangial distribution and no evidence of Anti-GBM disease.

**Discussion:**

We report this case to alert clinicians to causes of diffuse membranoproliferative glomerulonephritis as possible etiologies of pulmonary renal syndrome. In addition to ANA, ANCAs, and Anti-GBM serologies and separate pulmonary and renal workup, cryoglobulins, viral hepatitis serologies, anti-streptococcal antibody serologies, and renal biopsy and immunofluorescence may be indicated.

## Epigenetic Changes in Bone Marrow Cells Co-Cultured with Radiation-Injured Lung

Luiz M. Kolankiewicz, MD, Jason M. Aliotta, MD, Michael A. Passero, MD, FACP, Fermin Sanchez-Guijo, MD, PhD, Peter J. Quesenberry, MD, FACP – Center for Stem Cell Biology Roger Williams Medical Center Boston University School of Medicine

**Objective:**

Studies have demonstrated that adult bone marrow-derived stem cells participate in the production of lung cells when transplanted into mice with lung injury, but the mechanism remains unknown. We hypothesize that radiation-injured lung cells may mediate epigenetic changes in marrow cells in vitro, converting them to a lung cell phenotype.

**Methods:**

C57BL/6 mice were irradiated with 500 centigray (cGy) or 1200 cGy of total body irradiation (TBI), or not irradiated. Three hours, 5 days or 14 days after TBI, their lungs were placed in the top compartment of 6-well culture plates. Ten x 10(6) whole bone marrow cells (WBM) from Green Fluorescent Protein + (GFP+)

donor mice were placed in the bottom compartment of culture wells. WBM and lung were separated by a membrane with 0.4 $\mu$ m pores, preventing mixing of both cell types but allowing them to bathe in the same media. Plates were incubated for 48 hours or 7 days. RNA was extracted from WBM and Real-Time PCR was performed for a variety of lung cell markers. Gene expression was compared to WBM cultured without lung (control).

**Results:**

Compared to control, WBM cultured across from lung expressed elevated levels of Clara Cell Specific Protein (CCSP), Surfactant Protein B (SPB) and Surfactant Protein C (SPC) when co-culture began 3 hours or 14 days after TBI (up to 47.4, 22.3, 11.5 fold increases, re-

spectively). There was no difference in expression in WBM co-cultured with irradiated or non-irradiated lung. When co-culture began 5 days after TBI, lung marker levels in WBM were also increased compared to control. This effect was most pronounced in WBM exposed to irradiated lung compared to non-irradiated lung (CCSP: 614.8 vs. 0.77, SPB: 65.4 vs. 0.39, SPC: 421.8 vs. 1.24 fold increase, respectively,  $p < 0.05$ ). This suggests that damaged lung can convert marrow cells to functioning lung cells which can restore pulmonary competency.

**Conclusions:**

Marrow cells can be induced to express high levels of lung markers, in vitro, when cultured with lung.

# Hepatocyte Growth Factor Is a Potent Anti-inflammatory Cytokine Targeting Inflamed Endothelial Cells

Susan Eckert, MD (Associate), Rujun Gong, MD, PhD, Lance Dworkin, MD – Departments of Internal Medicine and Nephrology

Endothelial activation, marked by phenotypic transition to a pro-inflammatory state, is a primary and essential event in the process of acute and chronic inflammation in various organ systems. **Hepatocyte growth factor (HGF)**, a unique, pleotropic protein, has recently been shown to suppress inflammation in multiple animal models of disease; however, the molecular mechanism of this effect is unknown. This study examined the effects of HGF on the expression of several pro-inflammatory molecules in endothelial cells that were activated by interleukin-1b (IL-1b).

## Methods:

Human umbilical vein endothelial cells (HUVEC), between passages 2 and 7, were cultured and treated with human recombinant HGF (10, 20, 100, 500 ng/ml), human recombinant IL-1b (1 ng/ml) or the

combination. Control HUVECs were treated with vehicle alone. At different intervals (2, 6, 12 hours), cells were harvested for RNA extraction by Trizol protocol. Reverse transcription PCR (RT-PCR) was carried out using primers specific for several pro-inflammatory cytokines and adhesion molecules, including MCP-1, RANTES, IL-8 and VCAM. Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) served as an internal normalizing molecule for RT-PCR.

## Results:

At basal conditions, HUVEC cells expressed low levels of MCP-1, IL-8 and VCAM and barely any RANTES. IL-1b stimulation elicited rapid and abundant induction of all these pro-inflammatory molecules as early as 2 h. This effect was blocked significantly by HGF co-treatment, with the most counteractive effect occurring at 6 h.

In particular, RANTES expression, which was almost absent from vehicle or HGF alone treated HUVEC, was markedly induced provoked by IL-1b. This effect was totally abrogated by HGF. The low basal expression of VCAM in HUVEC cells was completely obliterated by the addition of HGF. IL-1b elicited strong expression of VCAM, which was down regulated by HGF in a dose dependent fashion with the maximal suppression at 500 ng/ml. Expression of MCP-1 and IL-8, two potent chemotactic cytokines for mononuclear immune competent cells, was also induced by IL-1b and attenuated by HGF.

## Conclusions:

These findings suggest that HGF is a potent anti-inflammatory cytokine suppressing the expression of pro-inflammatory molecules in activated endothelial cells.

# Recurrent Clozapine Induced Cardiac Tamponade

Todd Wood, MD, Sandra Jacobson, MD, Walter Goula, MD, Lisa Lambert, MD – Brown Medical School

## Case Report:

Ms. J, a 56-year-old woman with a history of difficult-to-control schizophrenia and well controlled asthma, presented to the emergency department with 10 days of cough, wheezing, and progressively worsening shortness of breath without relief of symptoms by her albuterol inhaler. She has required several hospitalizations for treatment of her schizophrenia, but presents on a stable regimen that included clozapine.

Initial physical examination was notable for tachycardia, moderate hypertension, tachypnea, and significant hypoxia of 83% on room air with minimal wheeze. Cardiac exam was notable for rapid regular distant heart sounds. She was overtly paranoid but without active delusions or hallucinations.

Initial electrocardiogram demonstrated sinus tachycardia with low precordial voltages and chest x-ray showed massive cardiomegaly with pulmonary vasculature engorgement. The possibility of a pulmonary embolus was entertained and the patient underwent CT angiogram demonstrating no embolus but a large pericardial effusion with transthoracic echocardiogram diagnosing early tamponade physiology. The patient

underwent a pericardial window. Laboratory, microbiologic, and cytologic evaluation of etiology were all non-diagnostic. Pathology demonstrated fibrosis with chronic inflammation. The patient was initiated on a new regimen of aripiprazole and clozapine was held secondary to concern of clozapine-mediated tamponade.

A repeat echo one month after discharge demonstrated no significant reaccumulation. The patient was subsequently admitted to a psychiatric hospital for inpatient management of her schizophrenia during which she was restarted on clozapine.

One week after discharge and two months after her initial presentation to the emergency department the patient presented in the ED with one day of chest pain and increased shortness of breath. Again CT angiogram, electrocardiogram, and transthoracic echocardiogram were consistent with pericarditis and a large pericardial effusion without tamponade. Clozapine was held and the patient underwent a left sided pericardial window and clinically did well. Repeat work-up again failed to identify a specific etiology. Seven weeks after discharge the patient demonstrated no recurrent effusion on

repeat echocardiography off of clozapine.

There are numerous etiologies to pericardial effusions / pericarditis of both infectious and non-infectious mechanisms. Previously cases of pericarditis associated with pericardial effusion and tamponade have been reported.<sup>1,2</sup> In this case the temporal association between reinitiation of the clozapine and representation with pericarditis and pericardial effusion is likely implicative of clozapine mediated events. This case is unique in its documented “challenge” and “re-challenge” with the offending agent and interval resolution during each period of cessation and also in that the initial episode of tamponade occurred on a stable regimen of clozapine. This case adds to the growing but ultimately rare reports of clozapine associated significant inflammatory reactions with which prescribing physicians should be aware.

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# Circumcision: A Study of Current Parental Decision-Making

George A. Turini, III, Steven E. Reinert, MS, Leslie D. McQuiston, MD, Anthony A. Caldamone, MD

**In response to conclusions drawn** by the American Academy of Pediatrics Task Force on Circumcision, Metcalf et al. completed a study in 1983 which investigated the reasons influencing parents' decision to circumcise their sons.<sup>1,2</sup> Cleanliness and "health" were cited most frequently as reasons. Sixteen percent of parents were counseled by pediatricians while 73% received information from an obstetrician. The authors concluded: "Reasons given for circumcision reflected the strength of tradition rather than a medical approach."<sup>2</sup>

Twenty years after Metcalf's work, this study sought to again determine the factors which influence the parents of newborn boys and affect their decision to circumcise their sons. This information may aid physicians in counseling parents.

## METHODS

Following IRB approval, a prospective study was conducted at inpatient units at **Women & Infants Hospital (WIH)**. Parents of boys born at WIH between 1/2003 and 1/2004 were visited during their hospital stay. Between 1/1/2003 and 6/1/2003, parents were randomly selected and visited on random days based on a single interviewer's availability. If parents refused participation, they were neither revisited nor contacted at a later date by telephone call. In cases where the child was not a candidate for circumcision for medical reasons, the family was excluded.

Once signed informed consent was obtained, a survey was provided for the parent(s). An investigator then administered the survey, reading each item to the subject(s), and recorded the responses. In instances where the primary language was Spanish, a translated version was used. In all cases, attempts were made to interview both parents together, but failing this, only one parent was interviewed. Parents who were not fluent in English or Spanish were excluded.

## RESULTS

During the nine months of the study, 5,113 males were born at Women & Infants Hospital and 2,987 (58.4%) circumcisions were performed. In this study, 315 out of 361 (86.6%) subjects had their sons circumcised. Age, religion and ethnicity of the subjects can be found in Table 1.

The factors that influenced parents' decision to circumcise their sons can be found in Table 2a. The most commonly selected factors fell under the heading of "medical/hygienic" concerns. The second most commonly selected reasons (23.5%) reflected family values and circumcision status of the child's father and brothers. Cosmetic and social reasons were modestly important to parents who felt that "looking different" from other

boys might create problems in adolescence and adulthood.

Forty-six parents (12.7%) did not circumcise their newborn sons. The major factors influencing this decision are in Table 2b. The majority of these parents (71.7%) reported "medical/hygienic" reasons as the most important. Familial circumcision status, religious reasons, and "other", which for this population included social and cosmetic reasons, were somewhat important to these parents, but did not come close to the significance of the "medical/hygienic" concerns.

The vast majority (327, or 90.1%) reported receiving or personally obtaining some form of information about circumcision before their son's birth, regardless of whether they favored the procedure or not. Of the 315 who decided to

**Table 1**  
Demographic Information for Patient Population

	Mother N= 364	Father N= 361
<i>Avg. Age</i>	29.95 +/- 6.04 yrs	32.19 +/- 6.87 yrs
<i>Religion</i>		
<b>Christian</b>	281 (77.20%)	262 (72.57%)
<b>Other</b> Buddhist Hindu Jewish Muslim Other	51(14.01%)	60 (16.63%)
<b>No Religion</b>	32 (8.79%)	39 (10.80%)
<i>Ethnicity</i>		
<b>White</b> American/Caucasian European	230 (63.19%)	223 (61.26%)
<b>Hispanic</b> Portuguese Spanish	56 (15.38%)	55 (15.11%)
<b>Other</b> Arab Asian Native American Other	46 (12.63%)	43 (11.81%)
<b>Black</b> African American/African American Cape Verdean	32 (8.79%)	40 (10.99%)



**Table 2a:**  
**Factors influencing the Decision to Have a Circumcision:**

Top Factor	Frequency	Percentage
<b>Medical/Hygienic</b> Avoiding the frequency of cleaning and maintenance Prevention of future UTI's, Prevention of future STD's, Prevention of future penile cancer	167	53.01%
<b>Father/Brother Circ'd</b> Because the brother is circumcised Because the father is circumcised	74	23.49%
<b>Other</b> Because the circumcision will not physically harm the child No reason Ob/Gyn advised circumcision Pediatrician advised circumcision Religious reasons To enhance sexual function	41	13.01%
<b>Cosmetic/Social</b> For cosmetic reasons Locker Room/Public Showers Social Reasons	33	10.47%

**Table 2b:**  
**Factors Influencing the Decision to Not Have a Circumcision:**

Top Factor	Frequency	Percentage
<b>Medical/Hygienic</b> Unnecessary medical procedure	33	71.74%
<b>Other</b> Because circumcision decreases sexual function Circumcision should be the decision of the child Cosmetic reasons Cultural reasons No reason	5	10.87%
<b>Father/Brother Circ'd</b> Because the brother is uncircumcised Because the father is uncircumcised	4	8.70%
<b>Religion</b> Religious reasons	4	8.70%

circumcise, 288 (91.4%) received or sought education as compared to 84.8% of the 46 parents who did not circumcise their son. The education resources were "family" (33.3%), obstetrician (31.2%) and pediatrician (30.6%). For 72 parents, information came from other sources such as birthing classes, television and medical training.

Frequency of circumcision did not vary significantly across the sources of education. Table 3 provides further details about the prevalence and influence of the sources of information that parents utilized. While receiving information from "family" was associated with tradition and familial circumcision status for parents, the majority of all subjects

still chose "medical/hygienic" concerns as the most important reason for circumcision. A similar trend was noted among the 39 participants who received education but did not decide to circumcise their son, in that they too reported "medical/hygienic" reasons as their primary reason to avoid the procedure.

Just under half (172, or 47.6%) the parents reportedly discussed circumcision with an obstetrician before the birth; 31.9% spoke with a pediatrician. Many, though, reported meeting with both types of clinician prior to the birth. Of 46 parents who chose not to circumcise their sons, 23 discussed the procedure with a clinician prior to the birth. Twenty-nine of the 361 subjects (8.03%)

reported that their physician's personal opinion about the procedure influenced their own decision.

## DISCUSSION

This study provides information concerning decision making on male circumcision, but there are weaknesses. We did not record how many subjects refused participation, and while we had randomly approached parents of newborn males without knowledge of whether they had intended to have their sons circumcised, the population was heavily weighted towards circumcision, likely based on regional, cultural and traditional reasons. It is difficult to explain this discrepancy because there were no steps taken to specifically include or exclude any potential subjects.

Finding only slight differences in the rate of choice of circumcision among parents of different religions is not only important comparatively, but also because it begins to suggest a shift in the focus behind the decision-making process parents employ when choosing to circumcise their son. The remainder of the data collected in this study also supports the hypothesis that a shift has occurred over the past twenty years wherein this process, previously governed by tradition, religious custom and culture,<sup>2,6</sup> may have become one in which a more prominent "medical/hygienic" concern has emerged.

Among the reasons for circumcising a son, parents most frequently cited their desire to avoid a perceived difficulty that comes with cleaning and caring for an uncircumcised penis. Our findings suggest that parents may either not have been aware of cleaning strategies or perhaps felt more comfortable proceeding with circumcision given the somewhat imprecise information about hygienic care. Many parents further supported "medical/hygienic" reasons by reporting that circumcision would effectively prevent urinary tract infections or STDs, hypotheses that have increased in popularity over the last twenty years<sup>11,12,13</sup>.

The second most reported reason was the circumcision status of child's father or older brother, a value similar to findings of Metcalf and Brown.<sup>2,6</sup> Social or cosmetic concerns, including physical appearance and comparison with other boys or men later in life, played lesser

**Table 3**  
**Relevance of Sources of Education**

Source of Education	Frequency (of 327 who sought information)	# Circumcised
Family	108 (33.03%)	98 (90.74%)
Obstetrician	102 (32.19%)	90 (88.24%)
Pediatrician	100 (30.58%)	89 (89.00%)
Other	72 (22.02%)	62 (86.11%)
Books	65 (19.88%)	57 (87.69%)
Friends	55 (16.82%)	49 (89.09%)
Magazine	55 (16.82%)	50 (90.91%)
Internet	42 (12.54%)	38 (92.68%)

roles in the parental decision-making process than previously reported<sup>2,6</sup>. Ninety-one percent of the sample reportedly received some education about circumcision prior to the birth of their son. Since Metcalf's study, when obstetricians were the primary counselors, a larger percentage of parents now appear to also be turning to pediatricians for information.<sup>2</sup> Whether the result of medical professionals being more accessible and available to parents or the result of more parents taking it upon themselves to seek out information, these findings demonstrate a positive trend toward providing the opportunity for informed decision-making. Most parents reported that their family was their top resource for information about circumcision rather than healthcare professionals.

Across all sources of education, there were no significant differences in the reasons why parents circumcised their son. Medical/hygienic concerns were most frequently reported by parents regardless of educational source except by those who primarily turned to their family for information and subsequently reported tradition and custom as the most important factors to the decision. These are interesting, and important, findings of which physicians should be aware because, while family may offer a comfortable source from which parents can learn about circumcision, such information may not always capture the broad spectrum of opinions and knowledge that exists on the topic.

Neonatal circumcision is almost always covered by the main statewide insurers, making it unlikely that monetary concerns influenced parents.

The results of this study suggest that there have been changes in the decision-making process of parents regarding cir-

cumcision compared with previous reports. Along with the emergence of medical literature suggesting that circumcised boys may have a decreased risk of **urinary tract infections (UTI)**'s or other health problems, our findings suggest parents may have shifted their focus from a cultural to a more evidence-based standpoint.

Circumcision continues to generate much discussion and controversy. No simple answer exists as to whether it is right or wrong, and abundant literature on the subject suggests that the decision be left in the hands of informed parents.<sup>1-7</sup>

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# Hazards To Patients In A Teaching Hospital

Melvin Hershkowitz, MD

**To receive skilled medical attention,** patients who enter teaching hospitals must abandon control over their usual environment and surrender their sense of individuality to the rhythms of institutional routine. In ordinary circumstances, few people would agree to do this. Illness changes that scenario.

My own career as a patient began at age five, when my parents discovered a hard, painless mass in my left axilla. My late father, an otolaryngologist, took me to his friend, Dr. Ralph Colp, a distinguished surgeon at Mount Sinai Hospital in New York. Dr. Colp successfully excised this benign osteoma, which never recurred in the subsequent 78 years of my life. The operation left me with a large vertical scar on the medial border of my left axilla, which became a unique identification mark for the US Army and other institutions. I do not recall my hospital stay as a five year old, but my subsequent years as medical student, resident, physician in private practice and in academic medicine, stimulated me to ponder the complexities and hazards of entering a teaching hospital for medical or surgical care.

Inside such hospitals, patients place themselves in the hands of anonymous people, whose reliability, sense of responsibility, and technological skills are all vital to the welfare, indeed to the survival, of the patient. Yet the patient has little or no basis on which to judge the character and skills of the many persons rendering care. There may be ample information available on the credentials and abilities of physicians, but this does not apply to many other hospital staff members who have vital interactions with patients. Entering a teaching hospital initiates a complex series of events, with exposure to an ongoing stream of people involved in meeting the needs of the patient. Upon arrival, the patient may encounter and be served by an astounding number of people who provide and record the necessary care. Table 1 shows a partial list.

With so many patient contacts, it is not surprising that accidents will occur and erroneous decisions will be made while attempting to render appropriate care. Patients may acquire infections from care-giv-

ers. Laboratory specimens may be mis-identified or lost. Surgeons may (rarely) operate on the wrong limb. Overdoses of potent medications, and administration of wrong medications, may cause grievous harm, even death. Fortunately, however, such negative events are comparatively rare in the totality of patient contacts in United States hospitals. The converse, however, is that when negative events do occur, they may prove fatal. This harsh conclusion was brought to public scrutiny by the Institute of Medicine's report, *To Err Is Human: Building A Safer Health System*, which reported that 98,000 deaths occurred in hospitalized patients in 1999 as a result of preventable errors.<sup>1</sup> *TIME Magazine* publicized this report under the ominous title, "Doctors' Deadly Mistakes."<sup>2</sup> Many physicians, objecting to the methodology and conclusions of the IOM Report, published partial rebuttals, among them a response in the *New England Journal of Medicine*.<sup>3</sup> However, grave errors in patient care have occurred in American Hospitals in recent decades. The IOM Report stimulated increased vigilance and widespread efforts to install systematic defenses against unforeseen negative events in hospital laboratories, imaging departments, operating rooms, pharmacies, and House Staff assignments across the country.

In addition to risks and loss of autonomy in the hospital, patients no longer have any hope of maintaining privacy and confidentiality of their records. This loss began long ago, when payments for medical care were increasingly placed in the hands of insurers who required access to patients' records to confirm care and make payment. Such insurers included Medicare, Medicaid, Veterans Administration, Blue Cross-Blue Shield, other private insurers, and an escalating

number of HMO and Managed Care organizations. In a 1982 report in the *New England Journal of Medicine*, Siegler<sup>4</sup> analysed invasions of confidentiality during the hospital stay of one of his patients with **chronic obstructive pulmonary disease (COPD)**, recovering from a cholecystectomy. Siegler found that at least 25, and potentially as many as 100, persons had legitimate access to examine, and even direct responsibility to make entries in the patient's chart. This group included attending physicians, house officers, three shifts of nurses, respiratory therapists, nutritionists, clinical pharmacists, unit secretaries, financial officers, chart reviewers, and fifteen students. This patient did not require the services of social workers, chaplains, physical therapists or occupational therapists, or the chart access list might have been greater.

**Table 1.**

Admission:	Clerk Wheelchair/Stretcher Transport
Floor or Unit:	Clerk Nurses and Aides Dietitians & Food Servers Mail Delivery Staff TV Installers Volunteers (Book Carts, etc) Phlebotomists ECG Technicians Portable X-Ray Technicians Respiratory Therapists Social Service Staff Third Year Medical Students Fourth Year Medical Students PGY I, II, III, IV Residents Chief Resident Sub-Specialty House Officers Attending Physician (Patient's Doctor) Attending Physician (Academic Rounds) Visiting Consultants Hospitalists Clergy
Off Floor:	Radiology,CT and MRI Technicians Ultra-Sound Technicians Interpretive Radiologists Interventional Radiologists Nuclear Medicine Technicians Laboratory Personnel (Clinical Chemistry,Anatomic Pathology) Pathologists Physical Therapists Occupational Therapists
Operating Room:	Attending Surgeons PGY I, II, III, IV, V Residents OR Nurses and Technicians Recovery Room Staff

Why be concerned? Confidentiality supports and enhances a patient's sense of dignity, autonomy, and identity as a unique individual in the whirlwind of hospital activity. It also enhances patients' trust in their physicians and willingness to share sensitive personal information which may be vital to their care. The destruction of confidentiality, and subsequent withholding of such information, may harm the eventual results of diagnosis and therapy. Given the current status of payment mechanisms, one cannot be sanguine about the probability of improvement in this vital area of patient welfare.

Five years after the IOM report on 98,000 unforeseen in-hospital deaths, Leape and Berwick<sup>5</sup> analysed the multiple systemic factors which contributed to that unfortunate statistic and the subsequent strenuous, if not always successful, efforts to reverse it. Two well-known causes of compromised patient safety were fatigue and sleep deprivation among house officers and acquisition of nosocomial infections. A startling finding was that hospital-acquired blood stream infections were alone the 8th leading cause of death in the United States. Medication errors, and poor control of anticoagulant (warfarin) therapy, were also major problems. The issue of house staff fatigue has since been addressed, with the initiation of shorter work hour schedules, though not without opposition and transgressions in some surgery programs. Computer-order entry for patient medications has diminished administration of the wrong drug and the wrong doses of the right drug. Anticoagulation control has improved, with increased awareness of specific vulnerabilities of older and sicker patients, and perioperative antibiotic protocols have reduced the number of surgical site infections. Strict protocol enforcement has also reduced central venous line infections. The use of designated rapid response teams, rather than haphazard spontaneous individual Code Blue responders, has increased successful outcomes in episodes of cardiac arrest.

The increased use of hospitalists during the past decade has stimulated interest in their impact on negative events and final outcomes for patients. However, proof of a positive impact has remained elusive. In a 2002 retrospective study of 6511 patients on an Academic General Medicine service, Meltzer et al. concluded that although hospitalists may decrease costs and improve

outcomes in some hospitalized patients, the evidence was scant and the mechanisms for such effects were obscure.<sup>4</sup> The current influence of hospitalists appears to be unchanged and requires further study.

Lest we be unduly encouraged by this progress, Leape and Berwick<sup>5</sup> emphasize that the embedded traditions of the medical profession are often formidable obstacles to achieving maximum patient safety. The tradition of high standards of individual performance unleashes physicians in to an ever more complex setting of diagnosis and therapy, increasing the chances for erroneous decisions. Patients somehow sense this and thus tend to blame individual physicians for harmful outcomes when in fact patient expectations may be unrealistic, and blame may well lie within the systems of delivering care and not with individual physicians. The implementation of electronic health records may prove to be a positive advance in patient safety, if costs do not prove prohibitive, and if interoperability over a wide range of participants can be achieved. Such systems need to be functional in all hospitals, clinics and physicians' offices, with strict safeguards for reliability and security of patients' data. In a recent survey of **Computerized Physician Order Entry (CPOE)** in Rhode Island hospitals, only four of seventeen had functioning CPOE Systems.<sup>6</sup> These four were among the largest in the state, with active teaching programs. Executives in hospitals without CPOE reported that the high cost of acquisition and installation, and the frequent reluctance of professional staff to undergo new training, were delaying implementation. Ironically, in another report<sup>7</sup> Rhode Island ranked Number One among all states in the nation for electronic prescribing activity, based on the percentage of electronic prescriptions from the total number of prescriptions written.

The most recent progress report from the IOM<sup>8,9</sup> does not encourage optimism for the immediate future of patient safety. Medication errors continue to inflict pain, anguish, and serious harm on 1.5 million patients, annually adding 3.5 billion to the costs of care. Confusions in drug nomenclature caused 25% of these errors, while inappropriate distribution of free drug samples (so popular with patients) without attention to possible harmful drug interactions was an additional uncontrolled hazard.

How can we protect our patients from these dangers? We can recommend that a family member or friend act as the patient's ombudsman in the hospital to communicate with doctors and nurses, particularly when the patient may be too ill to describe new symptoms or express concerns about poor care. When one in three American adults are taking at least five medications daily, we need to support increased use of CPOE, clarification and simplification of drug nomenclature, and stricter controls on the distribution of free drug samples. Such free distributions should be entered in the patient's record as a therapeutic transaction, with attention to and information on possible harmful drug interactions. No such requirement currently exists. With increased vigilance, we may help our patients emerge from their future hospital care with fewer unforeseen harmful episodes, with concomitant diminution in malpractice litigation, and with more gratitude and respect for their dedicated physicians, nurses and hospital staff.

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# Teaching Testicular Self-Examination in the Pediatric Outpatient Setting: A Survey of Pediatricians and Family Doctors

Andrew I. Horowitz, Steven Reinert, MS, and Anthony A. Caldamone, MD

**Testicular cancer is the most common form of cancer** among 15-35 year old males; however, the disease is often diagnosed late, resulting in increased morbidity and mortality rates. Khadra et al, surveying adults in South London, found that 91% were aware of testicular cancer but only 26% knew the age group most affected.<sup>1</sup> Early stage detection of testicular cancer is potentially curable with a five-year survival rate of 99%, while patients treated for metastatic disease at presentation have a five-year survival rate of 75%.<sup>2</sup> The **American Academy of Family Physicians (AAFP)** and **American Academy of Pediatrics (AAP)** recommend that physicians teach young men **testicular self-examination (TSE)** techniques to detect early signs of testicular cancer.<sup>3</sup>

Approximately 7,100 men in the US were diagnosed with testicular cancer in 1995,<sup>4</sup> resulting in 370 deaths; however, diagnosis is expected to increase to 8,250 men in 2006.<sup>5</sup> Caucasians develop testicular cancer at a rate twice that of Asians and five times that of African-Americans. Risk factors include cryptorchidism, family history, benign testicular lesions, and occupational hazard.<sup>6</sup>

The purpose of this study was to determine whether pediatricians and family doctors consistently educate their male patients about testicular cancer and/or whether they teach TSE. In this study, the term 'educating patients about testicular cancer' is defined as explaining only the risks and con-

sequences of testicular cancer to the patient, including the need to screen. 'Teaching TSE' involves demonstrating how to perform testicular self-exams.

## METHODS

A cross-sectional study of pediatricians and family practitioners in New England was conducted from June to August 2004. A list of physicians was compiled from the AAP and cross-referenced with physicians from the directory of major Brown University-affiliated teaching hospital referral lists. This group was selected based on their interaction and responsibility for the risk population of men between 15 and 35 years old.

Pre-tested questionnaires were faxed/e-mailed/postal mailed to the

sample, accompanied by a brief cover letter explaining the purpose of the study and a guarantee of anonymity. Each physician was assigned a reference number to ensure that all questionnaires were accounted for. A second fax/e-mail/postal mailing commenced four weeks later as a reminder for physicians who had not yet replied to the study. Authorization to conduct the survey was issued through the Institutional Review Board of Rhode Island Hospital.

The independent-sample t-test (with adjustment for unequal variance where appropriate) and chi-square test were used to assess relationships with patient characteristics and risk score. The Fischer's exact test was used in lieu of chi-square when expected cell frequencies

Table 1: Demographics of Response Population of Physicians

Type of Practice	Family Doctors		Pediatricians		Total Physicians	
	Male (%) (n=45)	Female (%) (n=23)	Male (%) (n=70)	Female (%) (n=71)	Male (%) (n=115)	Female (%) (n=94)
<5 yrs in practice	26.7	39.1	14.3	29.6	19.1	31.9
6-10 yrs in practice	8.8	34.8	15.7	22.5	13.1	25.5
11-15 yrs in practice	15.6	13.1	12.8	18.3	13.9	17.0
16-20 yrs in practice	22.2	13.1	22.9	9.9	22.6	10.7
>21 yrs in practice	26.7	0	34.3	19.7	31.3	14.9

Table 2: Technique/Tool used for TSE

TSE Technique/Tool	% of Physician using Technique/Tool (n=209)	% of Physician Ranking "Most Helpful" Technique/Tool (n=209)	% of Physician Ranking "Least Helpful" Technique/Tool (n=209)
Physician teaches	86.1	8.6	0.5
AAP doorknob instructions guide	5.7	10.0	1.4
Articles	1.9	0	20.6
Website	1.0	0.5	10.5
PA teaches	1.0	1.0	2.4
Nurse teaches	0.5	0	5.3
Male colleague [if female physician]	3.3	0.5	1.9
Video	1.0	2.4	6.7
Pamphlets	18.7	19.6	2.4

\*Multiple items may have been indicated on each questionnaire

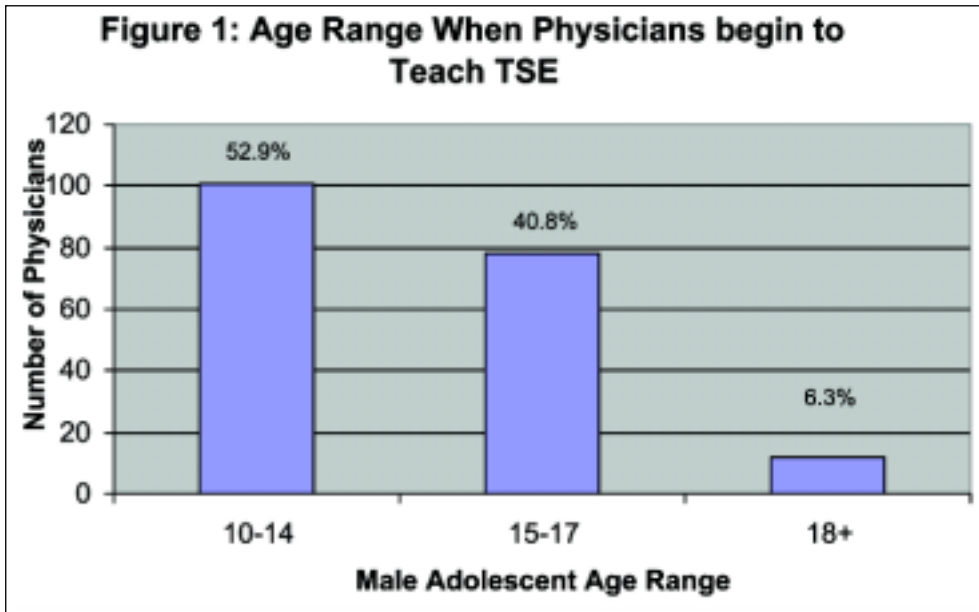


Figure 1: Age range when physicians begin to teach TSE to male adolescent patients (n=191)

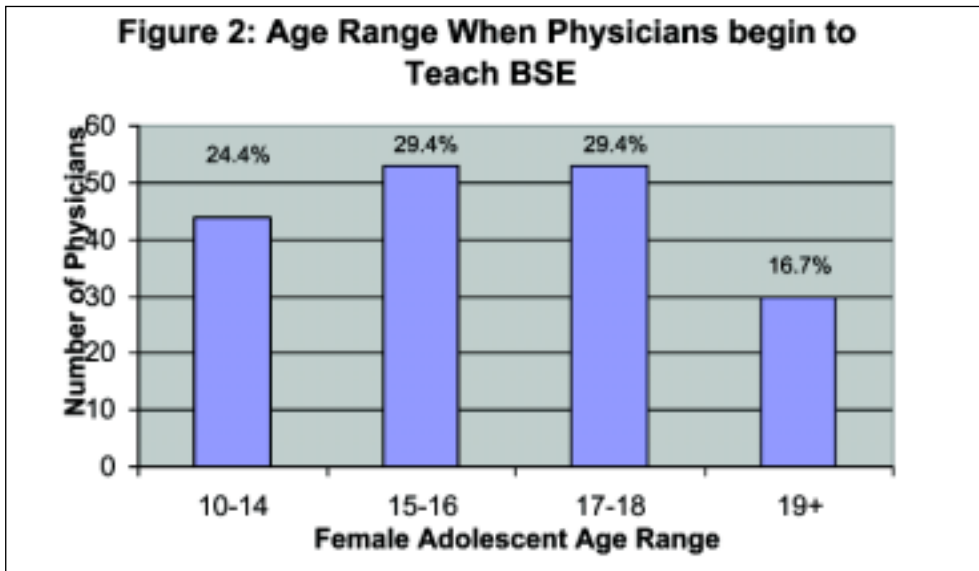


Figure 2: Age range when physicians begin to teach BSE to female adolescent patients (n=180)

were less than six. The Spearman correlation was used to assess the relationship between physicians' length of time in practice and: 1) when physicians start to teach TSE or **breast self-examination (BSE)** (Appendix 1; question 4, 12), and 2) the frequency with which physicians routinely ask if patients perform TSE (Appendix 1; question 5). Analysis of Variance was also used to compare two means with t-test for physicians' length of time in practice and when physicians start to teach TSE or BSE. An alpha probability of 0.05 as the threshold was applied for statistical significance in two-tailed comparisons. Variables resulting in P-value of 0.10 or less were entered into an initial multivariate logistic regression model.

All statistics were performed with Stata v. 8 (Stata Corp., College Station, TX).

## RESULTS

A total of 458 questionnaires were sent to family doctors and pediatricians throughout New England; 45.6% of physicians responded (n = 209) [Table 1]. Seventy-one percent (n = 147) of physicians reported educating all male adolescents about testicular cancer, and 67% (n = 141) reported teaching TSE to all male adolescents. The type of physician's practice was not associated with whether physicians educate (pediatricians 71.2% vs. family doctors 70.6%; n = 207, P = 0.93), teach (pediatricians 66.4% vs.

family doctors 70.6%; n = 208, P = 0.55), or routinely ask about TSE to all male adolescent patients (pediatricians 42.3% vs. family doctors 38.2%; n = 205, P = 0.57). Physician gender was not associated with whether the physician educate (male 70.2% vs. female 72%; n = 207, P = 0.77), teach (male 68.7% vs. female 66.7%; n = 208, P = 0.76) or routinely asks about TSE in adolescent male patients (male 41.2% vs. female 40.7%; n = 205, P = 0.20). Eight percent (n = 16) of physicians reported only teaching TSE to high-risk (orchidopexy or family history of testicular cancer) male adolescents.

The most commonly used tool for teaching TSE was physician instruction (86.1%) and pamphlets (18.7%). (Table 2) There was no significant difference between 'type of physician's practice' (Table 3) and 'gender of physician' (Table 4) when compared to technique and tools used for teaching TSE. Among TSE tools which were not available to physicians (Appendix 1; question 9) the most preferred were: age appropriate pamphlets (74.2%); age appropriate videos (16.7%); article/website (10.5%); AAP doorknob instruction guide (3.3%); television/radio commercials (0.5%); and CD-ROM (.05%).

Physicians who more frequently educated or taught TSE to their patients were in practice significantly longer than those who did not consistently educate or teach TSE. (n = 206, P = 0.03; n = 207, P = 0.04 respectfully). The age range in which adolescent males are being taught TSE is between 10-18 years old. The age period when physicians most often start teaching TSE to their patients was 10-14 years old (52.9%, n = 101), followed by 15-17 years old (40.8%, n = 78), and then declined sharply for 18+ year olds (6.3%, n = 12) (Figure 1).



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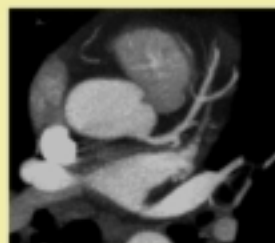


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Table 3: Proportion of Technique/Tools Used for TSE, by Practice Type

TSE Technique/Material	Pediatricians (%) (n=141)	Family doctors (%) (n=68)	P <sup>a</sup>	Combined Pediatricians & Family doctors (%) (n=209)
Physician teaches	83.7	91.2	0.14	86.1
AAP doorknob instructions guide	5.7	5.9	0.95	5.7
Articles	2.1	1.5	0.75	1.9
Website	1.4	0.0	0.32	1.0
PA teaches	0.7	1.5	0.60	1.0
Nurse teaches	0.7	0.0	0.49	0.5
Male colleague [if female physician]	3.6	2.9	0.82	3.3
Video	1.4	0.0	0.32	1.0
Pamphlets	23.4	8.9	0.01	18.7

<sup>a</sup> P-value for comparison of percent of pediatricians to percent of family doctors (chi-square test)

Table 4: Technique/Tools Used for TSE Based on Gender of Physician

TSE Technique/Material	Female (%) (n=94)	Male (%) (n=115)	P <sup>a</sup>	Female & Male doctors (%) (n=209)
Physician teaches	84.0	87.8	0.43	86.1
AAP doorknob instructions guide	8.5	3.5	0.12	5.7
Articles	1.1	2.6	0.42	1.9
Website	1.1	0.9	0.89	0.96
PA teaches	1.1	0.9	0.89	0.96
Nurse teaches	1.1	0.0	0.27	0.5
Male colleague [if female physician]	7.5	0.0	0.003	3.3
Video	2.1	0.0	0.12	0.96
Pamphlets	1.1	0.9	0.38	0.96

<sup>a</sup> P-value for comparison of percent of female to percent of male physicians (chi-square test)

Twenty-two percent of physicians felt that there was adequate non-medical media coverage of testicular cancer, and 11% (n = 23) indicated a celebrity contribution. Neither the type of practice (pediatricians 22.1% vs. family doctors 28.6%; n = 185, P = 0.33), length of practice (n = 184, P = 0.55), nor the gender of physician (male 26% vs. female 22.2%; n = 185, P = 0.56) was associated with whether physicians believed there was adequate media coverage of testicular cancer. Seventy-seven percent of physicians who taught BSE to their female patients also taught TSE to their male patients (n = 207, P < 0.0001).

## DISCUSSION

Survey results show that more physicians educate their adolescent male patients regarding testicular cancer than teach TSE during patient visits. A potential bias to the statistical results may have occurred from non-responders. It is possible that the true-percentage of doctors that educate/teach TSE to their patients is lower than the population that returned the questionnaire.

Ninety-one percent (n = 191) of doctors did not comment that physicians themselves were the most helpful tool to teach TSE; however, 74.2% (n = 155) of physicians did indicate that the most preferred tool to teach TSE would be age appropriate pamphlets. A study by Moore et al in the UK concluded that patients believed a nurse or doctor should perform testicular exams during medical visits, with 68.0% (n = 130) noting that testicular exams should be done by physicians.<sup>7</sup>

We are unable to comment on why physicians who have practiced longer report that they are more inclined to educate/teach TSE but possible explanations include: 1) more proficient and efficient at office exams and are able to thoroughly complete office visits with education/teaching TSE; or 2) responder bias. Additional research would be necessary to determine whether this result is a consequence of changes in medical school and/or resident training curriculum.

The majority of pediatricians and family doctors teach TSE before their adolescent patients are 15 years old, but

5.8% of physicians start teaching TSE to patients 18+ years old. Thus pediatricians and family doctors still make an effort to start teaching TSE for college-age patients. Possible reasons include: 1) physicians may feel that at this age the patient is "mature" enough to discuss this sensitive topic; 2) when the patient goes away to college, the pediatricians and family doctors will have limited interaction with the patient; and 3) this may be one of the last opportunities for pediatricians to teach TSE, before the patient transitions to an adult doctor.

This study demonstrated that physicians who consistently teach TSE will also teach BSE (77.0%). Possible explanations may include: 1) physicians who teach TSE are more proficient at office exams and thus also teach BSE; and/or 2) responder bias.

A study performed by Brenner *et al* determined that less than half of pediatric residents teach TSE to their adolescent patients, comparing interns to senior residents and if there were gender differences regarding TSE practice of residents surveyed.<sup>8</sup> The study concluded that senior pediatric residents were four times more likely to teach TSE compared to first year residents, and that gender was not associated with teaching TSE. Similarly, we found no association between gender and teaching TSE and found that more years of practice correlated with increased education/teaching TSE.

## CONCLUSION

The results of this study indicate that more physicians educate their adolescent male patients regarding testicular cancer than teach TSE during patient visits. The type of practice and gender of physicians were not significantly related to educating patients about testicular cancer or teaching TSE. However, physicians with a longer length of practice more frequently educate and taught TSE to their patients. The majority of

physicians (regardless of type of practice or gender) started teaching TSE to adolescent patients before 15 years old.

The most commonly used technique/tools to teach TSE was the physician and pamphlets. The length of practice, type of practice, and gender had no significant relationship to type of technique/tool. Finally, the majority of respondents felt that there was inadequate non-medical media coverage regarding testicular cancer, and also commented that public awareness to testicular cancer is significantly owed to celebrity exposure.

The majority of physicians indicated that more teaching tools and more awareness are needed about testicular cancer. These results support our current initiative to develop an age-specific website, video, and animated cartoon. The TSE website allows visual and auditory education for patients based on their comprehension level, while the content progressively increases for each age group.

An animated cartoon is available for adolescent patients and an educational video is present for all other age groups.

URL: <http://bms.brown.edu/pubhealth/mp/hc/TSE/index.htm>

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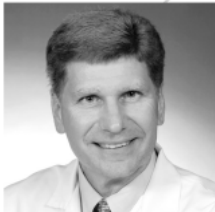
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# Drug Screening: Adjunct to the Differential Diagnosis of Drug Intoxication

Joseph K. Cherkes, MA, TC(NRCC)

**Physicians in an emergency department setting** often encounter patients who, upon examination, end up with a diagnosis of some form of accidental or intentional drug abuse. Many times a suspected drug may be found by a rapid screening panel of immunoassays, other times a more detailed investigation is warranted to confirm the clinician's suspicions and diagnosis. The following is an introduction to two commonly employed drug screens.

According to Goldfrank, et al., 3% of all intoxications seen in an ER setting arise from drugs used as directed by a physician. A further 3% of drug overdoses arise as sequelae of self-induced intoxication or poisoning.<sup>1</sup>

In clinical practice, physicians are usually under pressure to evaluate and treat stable patients with suspected ingestion or psychological manifestations for medical clearance, whereby they are either released to a referral center or admitted for further treatment or evaluation. Quite often, when the patient's history or clinical presentation does not adequately resolve the clinical picture, further investigation is needed.

## DISCUSSION

In one case, a 28 year-old man with a history of drug abuse was seen in the ER for evaluation of episodes of abnormal behavior. Initial drug of abuse testing (ER DAU panel) yielded negative results. Further investigation using comprehensive drug screening on the original urine sample detected the presence of dextromethorphan that was consistent with the symptoms presented on neurological examination.<sup>2</sup>

At our institution, there are two different methods of performing drug screening (i.e. "tox" screening) that address the scenarios of ingestion of both known and unknown substances.

The first is a rapid drug of abuse panel, the ER Drug of Abuse (ER DAU) panel, screening for the presence of: opiates, cocaine and/or cocaine metabolite, amphetamine/methamphetamine (including

methylenedioxyamphetamine (MDA) and methylenedioxymethamphetamine (MDMA), benzodiazepines, methadone, barbiturates, and THC ( $\Delta^9$ -tetrahydrocannabinol) in urine. In addition to the immunoassay panel, separate testing for ethanol, salicylate and acetaminophen may be ordered to provide a complete basic screening matrix. (Table 1)

Immunoassays specific for each class of drug allows for the detection of substances in urine.<sup>3</sup> These assays have a very low degree of false positive and negative results (sensitivity >99%; specificity >96.5%). This makes the immunoassay screening valuable to the clinician because reliable data are provided that can be used to establish or discard a diagnosis based on patient presentation and the clinician's observations. In most cases, the ER drug of abuse panel gives the physician the information needed to either admit a patient, refer him/her to the proper outpatient center, or discharge. The principal advantage of the ER DAU panel is a rapid turnaround time (1 hour or less) at low cost to the patient.

As with all immunoassays, there can be drawbacks. This does not invalidate rapid screening panels as a whole, but rather points to a need for more in depth investigation.

For example, in the case of oxycodone, the molecule does not react with the opiate assay as strongly as other opiates, and often gives either equivocal or negative results. In this case, when the clinician suspects the presence of oxycodone, a comprehensive drug screen should be considered, or an opiate confir-

mation should be performed on the original urine ER DAU sample.

Moreover, receptor specific benzodiazepines, such as lorazepam or clonazepam, can also present either negative and/or equivocal results because of their low therapeutic concentrations. When a ingestion of these drugs is suspected, they can be detected and quantitated in blood by a separate benzodiazepine confirmation assay.

In the somnolent or comatose patient where the clinical picture is not easily resolved by history or physical examination, a more in-depth evaluation may be warranted. Immunoassay panels do provide a wealth of useful information and are a good starting point to rule out common drugs of abuse. They do not, however, detect a majority of drugs a patient may ingest. This brings us to the second method of drug screening available to clinicians—the comprehensive drug screen. (Table 2)

The comprehensive drug screen is just that—*comprehensive*.<sup>4,5</sup> With a paired urine and blood specimen, the screening is worked up as follows:

### On blood:

A volatile alcohol screen is performed looking for the presence of methanol, ethanol, acetone, and isopropanol. Salicylate and acetaminophen tests are also performed, separately. The remainder of the blood sample is saved for any quantitations or confirmations that may be performed at a later time.

This allows the clinician to rule out ingestion of volatile substances (where there may or may not be an anionic or

**Table 1. ER Drug of Abuse Matrix**

Immunoassays	Quantitatives	Volatiles
Opiates		
Cocaine		
Amphetamines	Salicylic acid	Ethanol
Benzodiazepines	Acetaminophen	
Barbiturates		
Methadone		
THC		

**Table 2. Comprehensive Drug Screen Matrix**

Immunoassays	Quantitatives	Detection Method	Volatiles
Opiates	Salicylic Acid		Ethanol
Cocaine	Acetaminophen	GC/MS	Methanol
Amphetamines			Acetone
Benzodiazepines	Drugs found from		Isopropanol
THC	GC/MS analysis*		

\*given that assay is available for quantitation.

osmolar gap present) as well as ruling out the presence of two commonly abused **over the counter (OTC)** analgesics. By performing these tests up front, there is a minimum delay in treatment in the case of actual ingestion. Hence, this provides more effective and better patient care.

#### On urine:

Immunoassays are performed for: opiates, cocaine/cocaine metabolite, amphetamine class drugs such as: phenylpropanolamine, ephedrine, pseudoephedrine, amphetamine and/or methamphetamine, benzodiazepines, and THC. Colorimetric spot tests are also performed looking specifically for: salicylate, phenothiazines, imipramine/desipramine, and placidyl (ethchlorvynol).

An aliquot of urine is then split into acidic and basic samples that are extracted into an organic solvent that is then filtered, combined and concentrated to dryness. The resulting concentrate is then reconstituted with a small volume of solvent containing an internal standard and injected into a computer-enhanced **Gas Chromatograph/ Mass Spectrometer (GC/MS)**.<sup>4,5,6</sup>

The tandem methodology of GC/MS is considered the *de facto* "gold standard" for the identification of drugs and many compounds of biological interest.

Analytically, several factors make urine a far more beneficial fluid for toxicological studies:

1. Urine is relatively easy to collect, in most cases, by non-invasive means as opposed to blood.

2. Urine can be collected in a large volume (approx. 50 mL or more). This accommodates both comprehensive screening and any possible confirmations (i.e. opiates, cocaine, and amphetamines) that may have to be performed later.

3. The larger volume of urine provides a better opportunity to detect lower levels of drugs present when compared to serum.

As a part of the comprehensive screening, drugs found by mass spectroscopic analysis are automatically quantitated (providing that the assay is available). Unconfirmed positive immunoassay results (i.e. opiates, cocaine, benzodiazepines, or amphetamine and/or amphetamine class) not confirmed by mass spectroscopy, are then subjected to a separate confirmation for the analyte(s) in question. The principal disadvantage of the comprehensive drug screen is that not only is it more labor and time-intensive than the ER DAU panel, but there also a more substantial cost to the patient. The major advantage of this screening methodology is that few drugs escape detection.

**Table 3: Partial listing of drugs detected by Gas Chromatography/ Mass Spectroscopy (GC/MS)**

Acetaminophen, acetylsalicylic acid, alprazolam, amitriptyline, amphetamine, benzoyllecgonine; bupropion, butalbital, chlorpheniramine, chloridazepoxide, chlorpromazine, citalopram, clomipramine, clonazepam, cocaine; clozapine, codeine, desipramine, diphenhydramine, dextromethorphan, diazepam, diltiazem, disopyramide, doxylamine, ephedrine, fentanyl, gabapentin, hydrocodone, ibuprofen, imipramine, ketamine, levorphanol, lidocaine, mephobarbital, methadone, methamphetamine, methylecgonine, methylenedexyamphetamine(MDA); methylenedexymeth-amphetamine (MDMA), metoclopramide, mirtazepine, morphine, nordiazepam, nortriptyline, oxycodone, pentobarbital, phenacyclidine, phenylpropanolamine, phenobarbital, primidone, procaine, promethazine, propofol, pseudoephedrine, secobarbital, sertraline, thiopental, thioridazine, topiramate, trazodone, trimipramine, venlafaxine, verapamil, and zolpidem.

## CONCLUSION

Rapid immunoassay drug screening provides clinicians with reliable information to establish or confirm a diagnosis of drug intoxication in most cases. For those cases where the clinical picture is murky, or the patient is comatose without explanation, a more in-depth analysis by comprehensive drug screening may be required.

The toxicology laboratory at Rhode Island Hospital has the ability to detect up to approximately 3,000 drugs and/or metabolites through the Pflieger computer-based library of drugs.<sup>7</sup> In addition, a computerized version of the National Bureau of Standards library allows detection of up to 75,000 drugs and compounds of biological interest.<sup>8</sup> With these assets, the toxicology laboratory is able to provide reliable comprehensive drug screening information when a rapid immunoassay panel fails to meet the needs of the patient or the clinician.

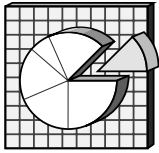
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## Smoking Among Pregnant WIC Participants in Rhode Island

Jennifer Brodsky and Samara Viner-Brown, MS

**Tobacco use during pregnancy** has long been recognized as an important contributor to poor birth outcomes, yet reducing this risk among low-income populations has proven challenging. The Special Supplemental Nutrition Program for **Women, Infants, and Children (WIC)** was created in response to a growing concern that low-income pregnant women, infants, and young children were not meeting nutritional guidelines. Each year WIC provides nutritious foods; nutrition education; referrals to health care and social services; and breastfeeding support to approximately 25,000 Rhode Islanders (5,750 women; 6,250 infants; 13,000 children) that meet categorical, income, and nutritional or medical risk eligibility criteria.<sup>1</sup> Despite Medicaid reimbursement for smoking cessation programs in Rhode Island, pregnant WIC participants here have had higher rates of maternal cigarette smoking and much lower rates of smoking cessation than pregnant WIC participants nationally.

### METHODS

Data were collected for participants at 28 WIC sites in Rhode Island. Records filed between June 1, 2002, and June 1, 2006, at all sites were analyzed using SAS statistical software for all women who became a WIC participant while pregnant. Data related to maternal smoking were available for 21,659 women. Although the analysis included major racial and ethnic groups (i.e., White, Black, Asian, Hispanic), data for Native Americans are not presented due to very small numbers of participants. Maternal smoking at onset of pregnancy and changes in maternal smoking status during pregnancy were determined by self-report of WIC participants at consultations during pregnancy. Demographic data were determined by self-report of participants at enrollment. Trimesters of pregnancy were defined as: 1<sup>st</sup> trimester, 0-12 weeks; 2<sup>nd</sup> trimester, 13-26 weeks; 3<sup>rd</sup> trimester, 27-42 weeks. High-risk participants were defined by medical or nutritional conditions that indicated high risk for poor pregnancy or birth outcomes (e.g., low maternal weight gain, gestational diabetes, lower hemoglobin/hematocrit). All other participants were classified as low-risk.

### RESULTS

At the onset of pregnancy, 4,375 (20.2%) women self-identified as smokers. White women were 4.2 times more likely to smoke (22.5%) than Asian women (5.4%) and 1.8 times more likely to smoke than Black women (12.2%). Non-Hispanic women were 5 times more likely to smoke (27.2%) than Hispanic women (5.5%). Those with less than a high school education were 1.7 times more likely to smoke (22.2%) than those with more than a high school education (13.4%). Low-

risk and high-risk participants were equally likely to be smokers at onset of pregnancy (20.2%). Women who reported English as their primary language were nearly 9 times more likely to smoke (25.8%) as those who reported a primary language of Spanish (3%). (Figure 1)

Among smokers, 1,606 (36.7%) reported a reduction in smoking during pregnancy, including 10.8% who reported that they stopped smoking completely and nearly 26% who reported a decrease in the quantity of cigarettes smoked. In contrast, 25.8% of smokers reported no change, and 32% reported an increase in smoking while pregnant. White smokers (32.8%) were more likely than Black smokers (26.7%) to report an increase in smoking, though the groups were equally likely to report that they stopped smoking completely (10.7%). Smokers with more than a high school education were nearly twice as likely to report stopping smoking completely when compared to smokers with less than a high school education (14.6% v. 8.2%), but the groups were equally likely to report an increase in smoking (32.5% v. 30.3%). High-risk participants were approximately twice as likely as low risk participants to report a decrease in smoking (44.7% v. 23.4%) and less than half as likely to report an increase in smoking (16.1% v. 34.2%). Smokers who enrolled

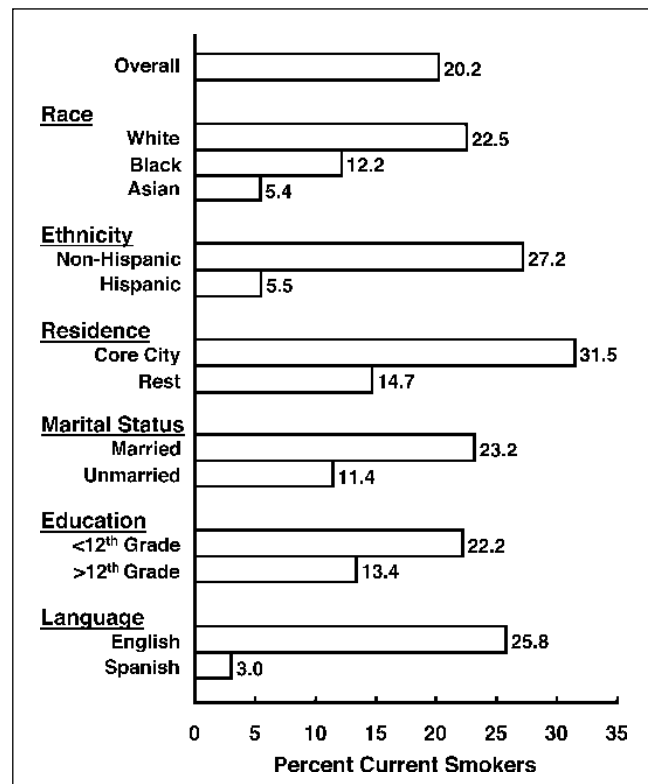


Figure 1. Smoking at Onset of Pregnancy, by Selected Characteristics, WIC Participants, Rhode Island, 2002-2006.

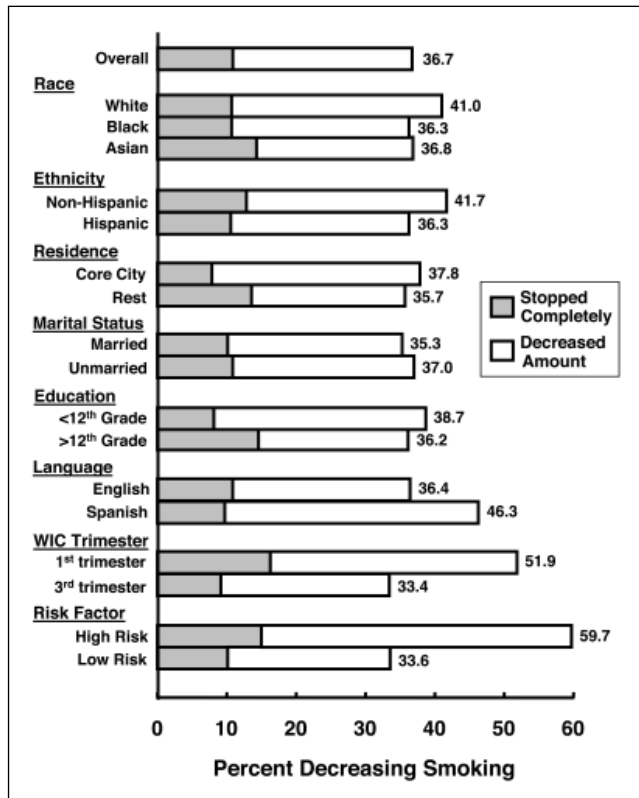


Figure 2. Stopping Smoking or Decrease in Smoking during Pregnancy, by Selected Characteristics, WIC Participants, Rhode Island, 2002-2006.

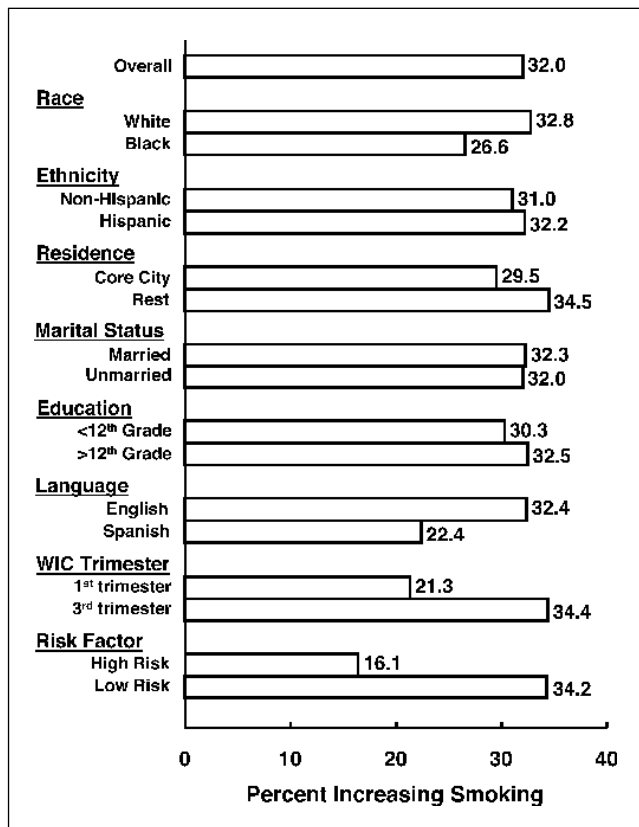


Figure 3. Increase in Smoking during Pregnancy, by Selected Characteristics, WIC Participants, Rhode Island, 2002-2006.

in WIC during their first trimester of pregnancy were significantly more likely to report a decrease in smoking when compared to those who enrolled in their third trimester (35.6% v. 24.2%) and much less likely to report an increase in smoking (21.3% v. 34.4%). (Figures 2 and 3).

## DISCUSSION

The prevalence of maternal cigarette smoking in the Rhode Island WIC population (18%) is only slightly higher than the national rate among women in WIC (17.5%), but significantly higher than the rate for all pregnant women in Rhode Island (10.5%).<sup>2,3</sup> Rates of quitting smoking completely during pregnancy are much lower in the Rhode Island WIC population (10.8%) than among WIC participants nationally (40.8%).<sup>2</sup> This disparity may be the result of differences between WIC populations demographically, including those that lead to higher levels of maternal stress during pregnancy, or differences in data collection methods. It is also possible that these high rates of smoking are the consequence of differing success rates for smoking cessation programs in Rhode Island and the nation. Since the health detriments of fetal exposure to tobacco are well documented, it is important to address smoking behaviors among WIC participants. Since WIC participants who enrolled in the first trimester were more likely to decrease smoking and less likely to increase smoking during pregnancy when compared to those who enrolled later, programs that increase the rates of first trimester WIC enrollment may contribute to lower rates of maternal smoking in the WIC population.

*Jennifer Brodsky is a MPH candidate at the University of Illinois at Chicago and was an intern at the Rhode Island Department of Health during summer 2006.*

*Samara Viner-Brown, MS, is Chief, Data and Evaluation, Division of Family Health, Rhode Island Department of Health.*

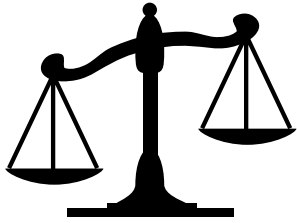
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3. Unpublished data for 2005 from the Office of Data and Evaluation, Division of Family Health, Rhode Island Department of Health.

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# JUDICIAL DIAGNOSIS

## Reworking the Patient Safety Equation with Liability, Culture and Health Courts

Hardeek H. Shah

**The Institute of Medicine (IOM)'s report** *To Err Is Human* sparked an influx of research publications and awards to improve patient safety.<sup>1</sup> The aim of patient safety is to reduce medical errors.<sup>2</sup> The IOM defines a medical error as the failure to complete a planned action as intended or as the use of a wrong plan to achieve an aim;<sup>3</sup> a medical error can produce a medical injury or not. The former is called a preventable adverse event; the latter is a near miss event. Every year, at least one million US hospitalized patients experience a serious medical injury; at minimum 44,000 Americans die from this.<sup>3</sup>

Once a preventable adverse or near miss event starts, the patient(s) and provider(s) may or may not know. If either believes it has happened, it may create an awkward journey; in worst case, this ends up in the jury-based court system. The patient resents an inadequate explanation or lack of empathy about an unexpected injury from the provider. Poor communication can provoke the patient (and/or family member) to seek a lawyer, triggering a malpractice suit.<sup>4</sup> The provider may feel that the complexity of the case makes it difficult to separate a medical error/event from the patient's underlying disease.<sup>2</sup>

This manuscript paints the conventional medical reporting, liability and culture in Rhode Island and the US under the inefficient jury-based malpractice court system. Next, it describes a proposed remedy developed and advanced by the Harvard School of Public Health and the bipartisan legal reform coalition Common Good: *health courts* – an administrative system to adjudicate and compensate for medical injuries.<sup>5</sup> Testing such courts, as an alternative approach to the conventional jury-based court system, may move “patient safety” from the category of “reporting” to “reducing” medical errors in Rhode Island.

### REPORTING A HOSPITAL EVENT IN RHODE ISLAND

In Rhode Island, hospital risk management and Department of Health officials usually become the third party involved with patient safety. Hospitals react when receiving a call, message, or report about an abuse, event, mistreatment, and/or neglect to a patient.<sup>6</sup> Information is then reported to the Department of Health; this can provide valuable data for risk assessment to prioritize patient safety and quality improvement initiatives.

Hospital-based events, under Rhode Island statute law section 23-17-40, are required to be reported.<sup>6</sup> Such events are dichotomized into reportable and patient injury. The former has seven components; the latter has fifteen components; specifications of each are provided in the Table. Nonetheless, risk

assessment will do no good if there is unreliable information.

### THE EFFECTS OF MEDICAL LIABILITY

The conventional liability environment blocks any hope of building a reliable state-based epidemiology of medical errors, adverse events, and near misses. Without this, risk assessment is virtually impossible. For providers, disclosure (providing error-related information to the injured patient) and reporting (providing error-related information to the risk management organization) have no incentives. Fear and frustration to disclose due to the inefficient malpractice litigation tail is unfair. It takes Rhode Island providers on average six years to settle a suit. In addition, physicians fear that an injured patient may use the **Freedom of Information Act (FOIA)** to file a malpractice suit.<sup>7</sup> Even more, the widespread belief of frivolous medical malpractice lawsuits brought against providers further obscures liability issues. But the last statement may be a myth.

In a recent malpractice claims study conducted in four regions (Northeast, Midatlantic, Southwest, and West), physicians evaluated a random sample of closed malpractice claims from five liability insurers. The study demonstrated that the malpractice system removed most frivolous claims, but with a cost of tremendous inefficiency.<sup>8</sup> In a separate report, the main author from that study concluded with two positive notes and three negative notes about the malpractice system. Positively, the malpractice system: a) discourages non-meritorious claims, and b) compensates meritorious claims. Negatively, the malpractice system: a) produces enormous administrative cost, b) has more unpaid medical error claims than paid non-medical error claims, and c) does not favor the plaintiff in jury trials.<sup>9</sup> Reforms to reduce frivolous lawsuits would not improve liability or patient safety.

Today, states are considering seven reform proposals; i.e., attorney contingency, caps on damages, collateral source rules, joint-and-several reliability, periodic payments, pretrial screening panels, and statutes of limitations. A 2006 Robert Wood Johnson Foundation health policy synthesis report noted that six of the seven reforms have not solved the problems they were intended to address.<sup>10</sup>

Non-economic damage caps showed a small effect; those states that adopted caps reduced malpractice awards (20-30%), constrained premiums, and increased physician supply.<sup>10</sup> But the caps disproportionately burdened the most severely injured patients and did not improve patient safety; so the ethics of implementing non-economic caps to other states, like

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**One promising proposal is the health courts system.**

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Rhode Island, is difficult to justify. Instead of tackling disputable reforms, reworking the malpractice jury-based court system makes sense. The medical culture has passionately voiced their response to liability and malpractice.

### THE EFFECTS OF MEDICAL CULTURE

An inefficient malpractice system<sup>11</sup> and crisis effects<sup>12</sup> have spurred providers to counter with aggressive tactics. Kachalia and colleagues dichotomize these into traditional responses and recent aggressive responses.<sup>13</sup> Traditional provider responses include: 1) advocacy and lobbying, 2) defensive medicine practicing, and 3) countersuing. Recent aggressive provider responses include: 1) practicing without sufficient professional liability insurance coverage, 2) utilizing right to sue waivers, 3) protesting / walking outs, 4) targeting expert witnesses, and 5) surcharging.

These responses may reduce patient access, increase health care costs, and decrease quality.<sup>14</sup> Although these variables are difficult to empirically confirm in Rhode Island or the US, the products of aggressive tactics broadcast the unfairness and inefficiency of the malpractice system and the malpractice liability crisis.

### PROPOSAL OF HEALTH COURTS

In Rhode Island, aside from mandatory mediation,<sup>15</sup> medical liability and culture have not changed.<sup>16</sup> Current proposals in Rhode Island have focused on the symptoms of medical malpractice and its environment rather than the framework.

It would be worthy for Rhode Island to test new approaches that satisfy the patient and provider and help risk management officials document patient safety in an efficient, confidential manner. One promising proposal is the health courts system. The approach aims to: (1) utilize full-time health judges, without juries, to guide proper standards of care; (2) have judges choose neutral experts in the medical specialty; (3) resolve the suit within months, while protecting good doctors in an efficient and fast manner; (4) only determine if a mistake happened, rather than proving it; and (5) reimburse patients for medical costs, lost income, and a predetermined, but revisable, sum based upon the type of injury.<sup>5,17</sup> These can be a foundation for a fair and efficient approach to improve medical liability and culture.

With health courts, the risk management team may have an opportunity to collect mistake-based claims data of a spectrum of injury severities. Injured patients would go through a standardized process,<sup>9</sup> and the patients' injury and litigation outcomes could be relayed directly to risk management. This data may help build and refine the terminology of preventable and non-preventable events.

A Harris Interactive US national survey found that 2 out of every 3 Americans favor having a malpractice suit tried in health courts.<sup>18</sup> Using health courts as an alternative system would not be a radical reform. Similar programs like vaccine liability and workers compensation were tested, implemented, and evaluated for sustainability.

**Table. Language utilized in Rhode Island to address Patient Safety terms**

Terminology <sup>6</sup>	Definition
Reportable events (n=7 components)	[1] Fires or internal disasters in the facility that disrupts patient care services, or causes harm to a patient (or personal); [2] patient poisoning in the facility; [3] infectious outbreaks; [4] kidnapping or psychiatric elopements; [5] personnel strikes; [6] disasters negatively affecting facility operations; and [7] unscheduled terminations of any services that affect continued safe operations of a facility (or the health and safety of its patients and personnel)
Patient Injury events (n=15 components)	[1] Brain injury; [2] mental impairment; [3] paraplegia; [4] quadriplegia; [5] any type of paralysis; [6] loss of use of limb (or organ); [7] hospital stay extended due to serious or unforeseen complications; [8] birth injury; [9] impairment of sight (or hearing); [10] surgery of the wrong patient; [11] subjecting a patient to a procedure other than ordered (or intended by the patient's attending physician); [12] any incident that is reported to the provider's malpractice insurance carrier (or self-insurance program); [13] suicide of a patient during treatment or within 5 days of discharge from an inpatient or outpatient unit; [14] blood transfusion error; and [15] any serious or unforeseen complication, that is NOT expected or probable, resulting in an extended hospital stay or death of the patient

Key:<sup>6</sup>From Rhode Island Common Law Section 23-17-40 Hospital Events Reporting<sup>5</sup>

## CONCLUSION

So far, the patient safety equation has not been solved in Rhode Island or the US. One promising approach involves health courts. Pilot testing may provide insights into fair and efficient ways for the patient and provider to settle disputes. Rhode Island's advantage of having a large captive insurer, a strong ability to study its health care system, and a history of asking for reform make the state an ideal candidate. Results may give state-based risk management officials informative data for epidemiological purposes.

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United States Mail Service  
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1. Publication Title: PROVIDENCE BUSINESS NEWS

2. Issue Date: 11/19/06

3. Issue Frequency: Weekly

4. Annual Subscription Price: \$5

5. Number of Issues Published Annually: 52

6. Annual Subscription Price: \$260

7. Complete Mailing Address of Known Office of Publication (Street, City, County, State, and ZIP+4):  
Providence Business News, 100 Water Street, Providence, RI 02903

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Providence Business News, 100 Water Street, Providence, RI 02903

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12. Tax Status:  
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 Owner checked during preceding 12 months and no change in ownership since last publication  
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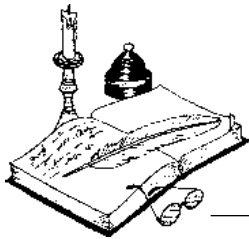
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# Physician's Lexicon

## A Vocabulary of Labor

The numerous words of parturition, mostly of Classical origin, don't really convey the many pains and perils of childbirth. A national magazine once observed: "If newborns could remember and speak, they would emerge from the womb carrying tales as wondrous as Homer's." Another publication declared that if men were to routinely undergo pregnancy and childbirth then planned parenthood would become a major Federal department.

The word, parturition, is from the Latin, *parturire*, meaning the wish to bring forth. Cognate words include post-partum and parent. The word pregnancy comes from the Latin, *praegnans*, meaning before [*prae-*] birth [*gnans*]. The root *gnasci*, is related to English words such as nascent, meaning to begin to exist, impregnate, impregnable, nation and nativity.

Obstetrics is derived from the Latin, *obstetricus*, meaning she who stands before,

thus referring to the midwife. Midwife is a Gothic term, via Old English, meaning with [*mit*] woman. A frequent synonym for midwife is *accoucheuse*, a French term meaning to the childbed. Yet another French phrase for midwife is *sage-femme*.

Gestation is from the Latin, *gestatus*, meaning to carry [and inferentially, to carry a fetus]. The ornamental chair which carries the pope during ceremonies is called the *gestatorius*. *Gestatus*, in turn, is related to *gerne*, meaning to carry, to bear or to rule, as in words such as belligerent, regal and register but is not related to words such as gesticulate or gesture.

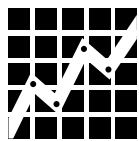
Placenta is from the Greek meaning flat cake. It was first used by the 16th Century Italian anatomist, Realdo Columbo. It is cognate with the Latin, *plattus*, meaning plate and is the etymological origin of such English words as platter, plate, plateau, platelet and platyhemithes. The sense of

flatness, or dullness, gives rise to the English word, platitude.

Embryo is from a Greek word meaning that which grows in the body. The Greek root, *bryo-* means to swell or to spread and appears in words such as *bryology*, the science of mosses. Fetus is from the Latin, *fetus*, meaning a bringing forth, a fruitfulness. It is related to an earlier Latin term meaning to suckle.

The umbilical cord stems from the Latin, *umbilicus*, meaning the navel and a related word, *umbo*, meaning knob. An earlier Greek term, *omphalos*, also meaning navel, was the name given to the round stone in the Temple of Apollo at Delphi marking the center of the earth. *Omphale*, in Greek mythology, was queen of Lydia, owner of a fabled spinning wheel and mother of Tantalus.

— STANLEY M. ARONSON, MD



RHODE ISLAND DEPARTMENT OF HEALTH  
DAVID GIFFORD, MD, MPH  
DIRECTOR OF HEALTH

## VITAL STATISTICS

EDITED BY COLLEEN FONTANA, STATE REGISTRAR

### Rhode Island Monthly Vital Statistics Report Provisional Occurrence Data from the Division of Vital Records

Underlying Cause of Death	Reporting Period			
	November 2005	12 Months Ending with November 2005		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	249	2,974	278.0	469.0
Malignant Neoplasms	172	2,341	218.8	6,394.0**
Cerebrovascular Diseases	42	502	46.9	845.0
Injuries (Accidents/Suicide/Homicide)	37	413	38.6	6,002.0
COPD	37	550	51.4	507.0

Vital Events	Reporting Period		
	May 2006	12 Months Ending with May 2006	
	Number	Number	Rates
Live Births	937	12,882	12.0*
Deaths	852	9,798	9.2*
Infant Deaths	(8)	(104)	8.1#
Neonatal Deaths	(8)	(88)	6.8#
Marriages	603	7,292	6.8*
Divorces	256	3,194	3.0*
Induced Terminations	379	4,852	376.6#
Spontaneous Fetal Deaths	57	1,060	82.3#
Under 20 weeks gestation	(54)	(994)	77.2#
20+ weeks gestation	(3)	(66)	5.1#

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.

(b) Rates per 100,000 estimated population of 1,069,725

(c) Years of Potential Life Lost (YPLL)

**Note:** Totals represent vital events which occurred in Rhode Island for the reporting periods listed above. Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

\* Rates per 1,000 estimated population

# Rates per 1,000 live births

\*\* Excludes 1 death of unknown age



## MEDICAL MALPRACTICE TOPICS

INFORMATION FOR RHODE ISLAND PHYSICIANS FROM BABCOCK & HELLIWELL

# You Are Being Sued... Coping with the Stress of a Claim

John Tickner, CPCU, President, Babcock & Helliwell

Each year, one out of seven doctors is faced with a medical malpractice claim. The odds are that you too will be sued for malpractice at some point in your career. How will you react?

Psychiatrist Sara Charles, MD, an expert on the topic,<sup>1</sup> has found that more than 95 percent of physicians facing a malpractice claim acknowledge some physical or emotional reaction. A 2002 Harvard University study found that 20 percent of doctors sued for malpractice rate the suit as the most significant event in their life, 40 percent suffer major depression, and 60 percent say that it altered their life and practice completely.

Charles found that these physicians who face a claim may become withdrawn or depressed. They may change the way they practice medicine, order more tests, and eliminate or avoid performing high-risk procedures. Such changes, coupled with a feeling of incompetence, can have long-term effects on motivation and commitment. The stress of a suit can even cause a physician to leave medicine altogether. This is certainly believable: A physician's identity is closely tied to his or her work, and a malpractice claim is often seen as an assault on the doctor's integrity.

Significant stress begins the moment that a physician receives notice of a claim, and continues for years—regardless of the outcome. Studies have shown that these physicians feel angry, hurt, disappointed, disillusioned, isolated, frustrated, vulnerable, and unjustly singled out.

While preventing a lawsuit is the most effective strategy in mitigating these effects, research shows that good communication is the best way to decrease the likelihood of a claim. Doctors can also reduce their risk by keeping legible and timely documentation, continuing on with education, maintaining board certification, reading current practice journals, and participating in quality assurance activities. Bear in mind that claims may still occur despite these preventative measures.

Doctors who cope well with the situation are able to intellectually distance themselves from the claim, and do not view the suit as a personal attack. These physicians have a support system, people with whom they can talk openly about the suit.

Physicians can discuss their case with an attorney, spouse, religious advisor, psychologist, psychiatrist, and therapist, since such communication is privileged and cannot be "discovered" by lawyers for the plaintiff. However, a doctor must avoid discussing the facts of a claim with anyone else.

Doctors facing a suit can share their feelings and explain the unprivileged facts and circumstances of the case with family members to gain their support and empathy. Other physicians who have experienced malpractice litigation can be a valuable resource. However, doctors who face a claim cannot discuss the details of the case. They can only talk about their feelings about the disruptive, emotional, interpersonal, and social aspects of the claim.

Several insurance companies sponsor professionally monitored, anonymous support groups for physicians being sued, and these can be extremely helpful. We highly recommend these groups.

Facing a medical malpractice suit is a tremendous challenge in the professional and personal life of any physician. However, facing a claim successfully can enhance one's coping skills. The experience can actually improve every aspect of a physician's life, since it forces him or her to learn more effective ways of relating to others.

### Learn more

The not-for-profit Physician Litigation Stress Resource Center web site ([www.physicianlitigationstress.org](http://www.physicianlitigationstress.org)) offers resources and strategies to help doctors understand and cope with the stress of a medical malpractice claim. For additional information visit [www.babcockhelliwell.com](http://www.babcockhelliwell.com) and click on Medical Malpractice Center.

*John Tickner, CPCU, is president of Babcock & Helliwell, a privately held independent insurance agency established in 1892 that provides professional insurance-related services of all kinds. Babcock & Helliwell is an agency for ProMutual Group, New England's largest medical malpractice insurance provider and the second largest provider in Rhode Island.*

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# THE RHODE ISLAND MEDICAL JOURNAL

The Official Organ of the Rhode Island Medical Society  
Issued Monthly under the direction of the Publications Committee

VOLUME 1  
NUMBER 1

PROVIDENCE, R.I., JANUARY, 1917

PER YEAR \$2.00  
SINGLE COPY, 25 CENTS

## NINETY YEARS AGO, NOVEMBER 1916

An Editorial, "Medical Reciprocity through the National Board of Medical Examiners," urged the State of Rhode Island to establish medical reciprocity with other state boards. At present, all physicians licensed in Rhode Island who moved to another state had to take that state's licensing exam.

A second Editorial, "Funds for Poliomyelitis Cripples," discussed the discord over proposed additional contributions to the fund, established by Mrs. Pembroke James of Newport. The Editorial concluded: "The fund is undoubtedly sufficient at present, as the percentage of paralysis of parts amenable to orthopedic apparatus resulting in the cases so far discharged from the City hospital is fortunately very small, but no one can forecast the demands which may be made of it."

William B. Cutts, MD, in "Suppurative Hepatitis," discussed four cases of this "occasionally encountered" condition, "often seen in tropical climes." All four patients (men ages 40, 39, 27 and 17) died.

## FIFTY YEARS AGO, NOVEMBER 1956

S. Gilbert Blount, Jr, MD, the Chief, Division of Cardiology, University of Colorado School of Medicine, contributed "Atrial Septic Defect: The Diagnosis and the Operative Results."

Michael DiMaio, MD, presented "Treatment of Addison's Disease" at the fourth reunion of former house officers, Rhode Island Hospital. The Journal reprinted the talk.

J. Wallace Conklin, MD, staff neurologist, State Hospital for Mental Diseases, Howard, discussed "Used of Mysoline in Barbituate Withdrawal." He focused on six cases, with "uniformly excellent results."

An Editorial, "Maternal Mortality," commented on the report of the Maternal Mortality Committee of the Rhode Island Medical Society, The State Department of Vital Statistics reported each maternal death to the committee, which investigated. Nationally, deaths from hemorrhage, infection and toxemia were steadily decreasing, while deaths from anesthesia were rising. The Editorial concluded: "...most promise for further reductions in the national mortality rate lies among those cases in which complications of anesthesia were the cause of death."

## TWENTY-FIVE YEARS AGO, NOVEMBER 1981

Charles E. Millard, MD, in "President's Corner," discussed: Medical Residents – Rhode Island Highest in the Nation – A Dubious, Expensive Honor." He noted: "The cost of residency training is not borne by the resident, but by the PATIENT in his ever larger hospital bill." Dr. Millard concluded: "There is no panacea."

John R. Stuart, MD, in "Cholangiography Revisited," said, "Reduction in morbidity and mortality can be achieved through ductal palpation and reliable cholangiography."

Kenneth B. Ain, MD, David T. Barrall, MD, Robert G. Perez, MD, Harry A. Ward, MD, all members of the Brown University Program in Medicine, Class of 1981, contributed "Patterns of Automotive Safety Restraint Use in Rhode Island: Impact of the Child Passenger Restraint Law." The authors predicted: "increased compliance with the law will substantially reduce mortality in children and infants involved in accidents." The research was done as part of the required clerkship in Community Health.

Charles J. Diskin, MD, and George Ho, Jr, MD, contributed "The Value of Protein and Complement in Ascitic Fluid." They noted a "close correlation between levels of protein and complement and risk of infection."

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