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PUBLICATION OF THE RHODE ISLAND MEDICAL SOCIETY



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Commentaries

CATS: A New Answer To an Old Problem

“Congenital absence” syndromes are familiar to pediatricians but not to adult-oriented doctors. A potentially major advance in psycho-social genetics was made recently with the discovery of at least one genetic explanation for the Congenital Absence of Thought Syndrome (CATS), a disorder celebrated by the Darwin Awards but held in lower esteem by those of us in medical professions.

HISTORY

There are many ancient references to those of little or no thought. The most famous literary fictional reference in English is to Pooh, the bear of little brain, but papyri from the time of Phantikees IV refer to families composed of people “doomed to think so little as though to be intellectually indistinguishable from vegetation.” Unlike some of our current national politicians, they considered this an unfortunate curse, not something to advertise as a beneficent trait.

This disorder, in the era of 1200 BCE, appeared to be concentrated in well defined areas, recognized by the general populace as places to avoid because once inside, the inhabitants weren’t always able to direct the visitor out. These therefore were nicknamed, “kurantas”, meaning “lost” or “unknown”, in the sense of being “unknowable.” This term evolved to eventually mean “quarantine,” or “off limits” because of the problems visitors encountered. The modern use of the term, to keep infectious people from contaminating the general population, is a distortion of the original intent. Ultimately these people were exiled, initially to the “moon region” of Egypt, but later to some unknown place, on the Mediterranean. One myth suggests that intermarriage with the ancient Jews led to the loss of eleven of the original thirteen tribes due to navigational problems in the desert. Deuteronomy contains an obscure reference that can be seen as forbidding contact with these people but this reference is hotly debated, especially in light of the Q document.

In recent days an enclave was found in northern Rhode Island evaluated initially by some Brown geneticists, then by the Centers for Disease Control and Prevention and currently by the defense department.

CLINICAL ASPECTS

Gene testing is not commercially available so that diagnosis, outside of research laboratories, rests both on clinical suspicion and family history. There is still active debate on the exact cardinal features of this disorder. The prime confounding variable is the time of onset, which, in reality, is the age at recognition. Distinguishing congenital absence of thought from **acquired absence of thought (AAT)**, a much more common disorder, is frequently difficult because family history is extremely unreliable. Patients with CATS are deficient in insight and fail to recognize the disorder in others, as well as themselves. The correlation between the absence of thought syndromes and intelligence is unclear as IQ tests do not assess creativity. Although one might intuit that people with CATS are destined for the lower socioeconomic rungs of our society, this is incorrect. Some professions appear to have a higher than random prevalence. The publisher has been enjoined from publication of CATS II: How to make a lot of money without actually thinking, due to legal constraints.

Children with CATS can learn. They simply can’t think, whether inside the box, or outside. It is not always a curse, either. Despite Descartes, these people are. Their mean scores on the American contentedness scale is much higher than Americans without this gene. In each of the 11 subscales, they score significantly higher as well.

The original RI family, identified only as PC242, showed an autosomal recessive inheritance pattern with high penetrance, involving a little known cesium channel disorder. The gene is located on the short arm of chromosome 1, within 4000 kilobases of one of the genes related to early onset sociopathy syndrome.



Unlike AATS, CATS-affected children do not change over time. Studies using the **RI Creative Thought Questionnaire (RICTQ)**, clearly demonstrate that children with CATS perform at a stable, very low level from their first testing, whereas American children begin at levels that are historically average for the world, but decline over time in a linear fashion so that by age 14, the two groups converge. The floor effect of the test results precludes testing for further declines. Another distinction between AATS and CATS is that in enriched environments, AATS children improve on the RICTQ whereas CATS children do not. In fact, studies have proven that if AATS has not been present for more than three years during the critical years of 7-10, the syndrome can be eradicated, restoring these children to normal thought patterns. The ethics of this has been hotly debated in the Congress and White House, with some groups favoring AATS as a goal. It is of great interest that feral children, if taught to speak, will test at much higher levels than those with AATS on the RICTQ after age 6.

CURRENT ACTIVITIES

While basic research into the recently discovered cesium channel, also linked to the congenital absence of thoughtfulness syndrome, proceeds, clinical research is being encouraged with a number of grants provided by the No Child Left Behind program. Promotors of this law are divided, however, on whether they consider absence of thought a good or bad thing, so that requests for proposals often focus on “neutral” hypotheses such as whether genetic anticipation occurs, at what age clinical testing may identify the syndrome, whether CATS children should be mainstreamed or schooled separately.

The Dept of Defense also has been greatly interested. As in the political establishment, there is a schism in the Pentagon and the CIA as to whether CATS should be considered a treasure to be mined, or a weakness to be exported.

The epidemiology of CATS is being elucidated. The genetics of the condition are being worked out with regards to regulatory genes. While the Hardy Weinberg principle explains why recessive disorders don't die out, evolution, particularly in the United States, suggests

that the CATS genes may be favored. Their prominent place in elected positions indicates a widespread belief that CATS is a trait worth promoting.

[April Fool]

— JOSEPH H. FRIEDMAN, MD

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Kidney: A Precious Gift Or a Stolen Organ?

Life—depending upon which poet you read—is a sequence of troublesome trials, a fragile fantasy, a bowl of cherries, an endless battle, a troublesome journey, an incurable disease, a fragile bubble, a bankruptcy of lies, an impossible dream, or a cornucopia of limitless treasures. Well, perhaps not limitless but certainly endowed with sufficient leeway to allow one to give parts of one's living body to others without experiencing personal deprivation.

Life has also been called a gift; and what greater gift can one possibly offer than a part of oneself to someone in greater need? In 1909 Karl Landsteiner [1868 – 1943] demonstrated that human blood could be classified into four major types, thus making compatible blood transfusions a safe life-giving procedure. And, since blood is a renewable resource, healthy individuals may safely donate blood a few times per year without danger to themselves. Over five million units of blood are now transfused into Americans each year; and the technical development of blood transfusion, and blood banking, has made this remarkable resource a widely employed form of altruism.

By 1920 the need for transfused blood exceeded the numbers of donations and many blood centers sought to increase their blood supply by offering money for each donation. This incentive certainly increased the number of donors. A new problem arose since so many of the newer donors were alcoholic indigents seeking funds for unhealthy purposes. The new problems were twofold: first, that these donors, many malnourished, could ill-afford to provide blood; and second, that vagrants were often carriers of blood-borne diseases such as syphilis, hepatitis and malaria and that their microbiologically-contaminated donations might then infect the recipients of their blood. Realizing this danger, blood banks have ceased paying for donations and now routinely screen all donations for such diseases as hepatitis, syphilis and AIDS.

The scope of living tissue transplantation has grown immensely since a kidney was successfully transplanted into an Illinois woman in March of 1950. Successful transplantation [from volunteers or cadavers] now includes hair, bone, bone marrow, skin, cornea, lung, liver, pancreas, heart and kidney. In the last decade about 417,000 organ transplantations have been performed in the United States, about 47% derived from living donors. But there still are about 84,000 living Americans on one or another organ transplantation list desperately awaiting an immunologically compatible donor. And therein lies two problems.

The first problem pertains to the establishment of ethical standards for placement on such national lists: should first come be served first? Should age, social status, ability to pay, or even blood-relationship to the surgeon be determining criteria?

And the second problem: The demand for organs far exceeds the supply. In the United States, organ transplantation is

carefully supervised and under constant surveillance to insure that agreed-upon criteria be scrupulously observed. But such adherence to standards is lax or nonexistent in many other nations. In eastern Europe, indigent males have been known to offer one of their two kidneys for sale for sums between \$2,500 and \$10,000.

The *New York Times* recently ran a disturbing story from Gurgaon, a city near New Delhi, India. The Indian police have uncovered an illicit network for kidney harvesting and transplantation—for a substantial fee, this illegal scheme thus exploiting the unmet worldwide demand for transplantable kidneys.

How does the scheme work? A team of criminals surveys the poorer districts of India's teeming cities, particularly streets where unemployed, itinerant workers gather seeking daytime jobs. A potential worker will be approached and offered a job. He will then be driven to a secluded cottage, drugged to unconsciousness and operated upon without his permission or knowledge. The victim, deprived of one of his kidneys, is dumped back on the streets with neither payment nor minimal post-operative care. Police have identified a number of Indian physicians and a few private hospitals all complicit in this kidney-stealing ring.

How many victims has this illegal network abused? Indian police state that about 500 known instances have been documented. The recipients of these illegally extracted kidneys have been wealthy individuals, including Americans, who could not trust their luck to waiting lists and used their wealth to fulfill their medical needs.

Reality sets limits to human altruism. There is an apocryphal tale of a conversation between a hen and a pig, discussing the comparative contribution of each to the farmer's daily breakfast of ham and eggs. To the hen, it is a renewable gift; but to the pig, it represents something more substantive. Giving a pint of blood is a modest gift which, in a healthy volunteer, requires little more than a month of recovery before his personal blood supply returns to normal. Giving a kidney, while not life-threatening, is nonetheless time-consuming, painful and not without measurable hazard. Furthermore, the body will not regenerate the excised kidney. And giving a heart for transplantation, under the best of circumstances, remains the ultimate of gifts.

— STANLEY M. ARONSON, MD

Disclosure of Financial Interests

Stanley M. Aronson, MD, has no financial interests to disclose.

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Helmet Use Among 510 Injured Motorcyclists In a State With Limited Helmet Laws

Megan L. Ranney, MD, Michael J. Mello, MD, MPH, and Janette Baird, PhD

According to the National Highway Traffic Safety Administration, in 2004 there were 4,008 motorcycle rider deaths, representing a fatality rate of 40.09 deaths/100 million vehicle-miles for motorcycles, compared to 1.18/100 million vehicle-miles for passenger cars.¹ For this same year, 9.4% of all traffic fatalities were due to motorcycle crashes, despite motorcycles representing only 2% of registered vehicles in the United States.¹ Motorcycle crashes not only are over-represented among fatal crashes, but also cause significant morbidity (760 injuries/100 million vehicle miles in 2004), making them a high-risk form of transport.¹

Multiple published studies, including a Cochrane Collaborative review,² demonstrate the effectiveness of helmets^{2,3} and protective gear⁴ in decreasing head injury, fatalities, and treatment cost.⁵ Helmets have not been shown to increase rates of neck or facial injuries,² and are associated with lower injury severity.⁶ Despite these many studies, legislation of motorcycle safety helmet use remains controversial. Nineteen states have universal helmet laws; twenty-eight have limited helmet laws (usually for minors, novices, and/or operators without insurance); and three states have no helmet laws. As a result of weakened or repealed helmet laws, motorcycle safety helmet use dropped to 51% nationwide by 2005, and was only 37% in states with no or limited helmet laws, as opposed to 68% in states with universal helmet laws.⁷ Motorcycle crash fatality and injury rates have increased in states with weakened laws.^{1, 8, 9} A recent analysis shows that limited helmet laws are not effective in decreasing fatality rates among young drivers, but the study does not evaluate actual helmet use by young drivers in limited helmet law states.¹⁰

Rhode Island has a "limited helmet law." Since 1992, Rhode Island has required helmets only for motorcycle passengers, operators younger than 21 years old, and operators with less than one year of experience. This study was conducted

to determine prevalence of helmet use among motorcycle crash patients admitted to the state's only Level I trauma center over a five-year period, and to examine helmet use's association with state law requirements, rider characteristics, injury severity, and death.

MATERIALS AND METHODS

Study Design, Setting, and Population

This study was a retrospective review of all motorcycle crash patients in the trauma registry database of the state's only Level I trauma center between January 1, 2000, and December 31, 2004. The trauma registry is a database of all trauma patients either admitted to the hospital or expiring in the emergency department (ED); it does not include patients seen in the ED and discharged. EMS protocols dictate transportation of all trauma patients to this ED. The Rhode Island Hospital Institutional Review Board approved the study's protocol.

Study Protocol

The database was retrospectively queried for E Codes 810-819(.2-.3) (motorcycle traffic accidents, driver and passenger) and 820-825(.2-.3) (motorcycle non-traffic accidents, driver and passenger) from 2000-2004. For each patient identified by this query, age, gender, helmet use, blood alcohol concentration (BAC), driver or passenger, injury severity score (ISS), ICU admission status, length of stay, and final disposition were extracted.

Measurements and Data Analysis

Helmet use versus no helmet use was the primary outcome of interest for the study. We also tested the other measured variables for possible associations with helmet use. We analyzed the data using chi-square tests, Student's t test, Pearson's correlation coefficients, and analysis of variance. The 95% confidence interval effects are provided.

RESULTS

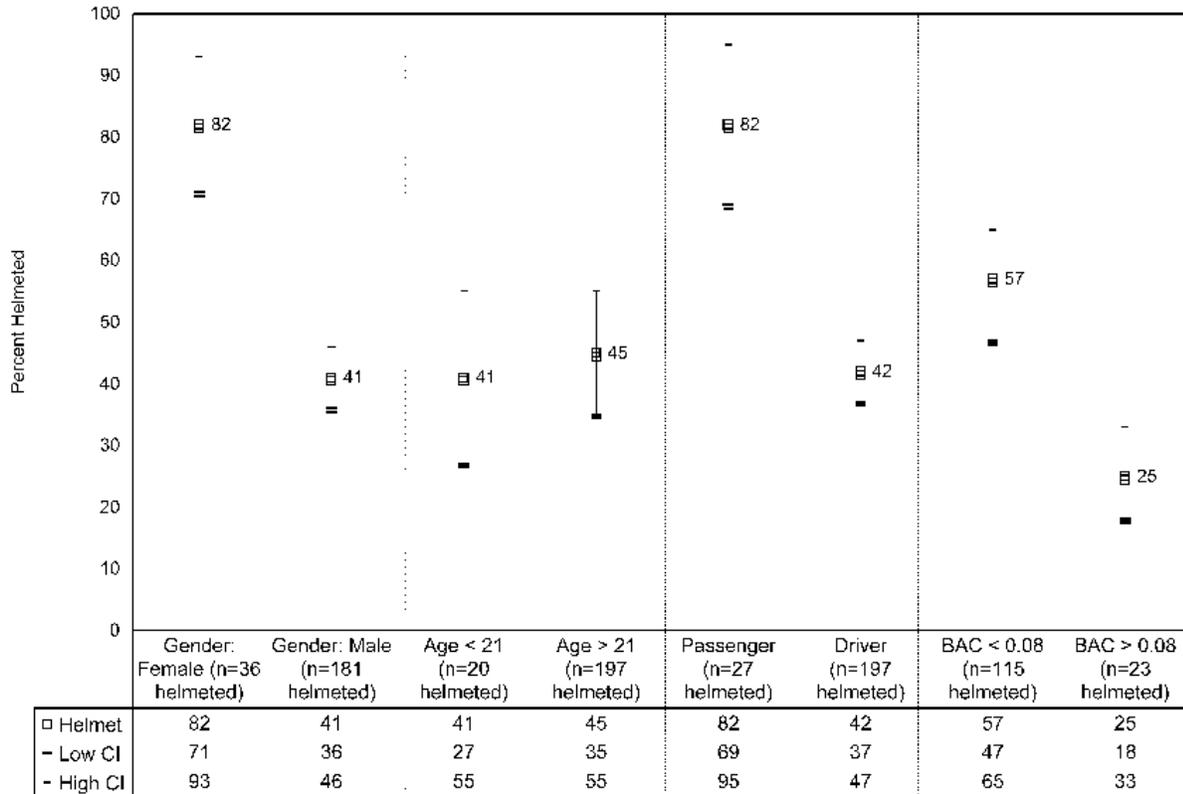
The records of 510 motorcycle crash patients were identified in the trauma registry for the specified five-year time period. Of these, 11 were ED deaths and 499 were admitted patients; 191 patients were admitted to the ICU; 21 died after admission. The group's mean age was 35.4 years (range, 16-77 years; 95% CI = 34.3 to 36.4 years); the mean length of stay was 10.9 days (range, 0-340 days; 95% CI = 9.1 to 12.8 days); 90% of the sample was male.

Information on helmet use was found for 95% of patients (n=485). Overall, 216 patients (42%) reported being helmeted at the time of the crash and 269 (53%) did not.

To examine the effects of a limited helmet law, we determined the association between helmet use and age (helmet required for operators < 21 years old), as well as between helmet use and passenger (helmet required) or operator (helmet not required) status. There was a significant difference between passengers' and operators' helmet use. Despite state law, age < 21 was not associated with helmet use. There was a significant association between gender, BAC, and helmet use, with male gender and BAC > 0.08 being negatively associated with helmet use. (Figure 1)

In addition, lack of helmet use predicted higher severity of injury. Non-helmeted motorcycle crash patients had a higher average ISS (16.2, 95% CI = 14.6-17.7) as compared to helmeted patients (14.3, 95% CI = 12.9-15.6). Non-helmeted motorcyclists had significantly longer length of stay in the hospital (mean of 9.1 days if helmeted, 95% CI = 7.6-10.5, versus mean of 12.5 days if unhelmeted, 95% CI = 9.4-15.7). A combination of no helmet and BAC > 0.08 was associated with significantly higher likelihood of ICU admission (43% if legally sober and non-helmeted (95% CI = 34% to 52%) v. 57% if legally intoxicated and non-helmeted (95% CI = 47% to 67%)). Non-helmet

FIGURE 1: Factors Associated with Helmet Use



users had significantly increased likelihood of death (n=22 v. 10; z = 1.74; p < .05, one-tail).

There was no correlation between age and ISS or between positive BAC and ISS.

DISCUSSION

Rhode Island has had a limited motorcycle helmet law since 1992. Since the law was enacted, there have been no studies of the frequency or correlates of helmet use among injured motorcyclists. This study demonstrates poor compliance by injured motorcyclists with the existing limited helmet law regarding age, but much better compliance with the law regarding rider position. Only 41% of admitted motorcycle crash patients aged less than 21 years were helmeted. This statistic may reflect the difficulty of identifying motorcycle operators' age while they are driving, which impedes effective enforcement. The higher rate of passengers wearing helmets may be due to the greater ease with which passengers' non-

compliance with the law can be identified. Even for passengers, though, compliance with the helmet use law was only 82% in our sample.

This study also reaffirms the danger of not wearing a motorcycle helmet: not using a helmet was significantly associated with increased fatality rates, increased length of hospitalization, and (in association with alcohol use) increased rate of ICU admission. Although we did not study costs, it is expected that this increased use of medical resources would translate into higher medical expenditures. Other research comparing medical costs of helmeted and nonhelmeted motorcyclists confirms this.⁵

Finally, this study indicates a few factors that are correlated with not wearing a helmet. Being male and using alcohol are significantly associated with the choice to not wear a helmet. These factors have been associated with other injurious behaviors.^{11, 12}

The results point to three possible interventions to increase motorcycle hel-

met use. First, universal helmet legislation could increase helmet use by drivers to levels equaling the observed passengers' helmet use. However, this is difficult due to vocal anti-helmet lobby groups. Second, the fact that less than half of injured drivers < 21 years old were helmeted, and almost a quarter of injured motorcyclists had BAC > 0.08, indicates that existing legislation could be better enforced; doing so may require innovative enforcement techniques. The third option is education. Community-wide motorcycle-safety education targeting motorcyclists, encouraging use of helmets and protective gear, could be effective. An alternative targeted educational intervention could occur at the time of the hospital visit. After a motorcycle crash, patients may examine their vulnerability and question their behaviors. Previous studies suggest that brief motivational interventions at the time of a vehicle crash result in decreased alcohol-related injuries,¹³ and in injured adolescents result in increased seatbelt and bicycle helmet use.¹¹ It is

possible that similar interventions by physicians caring for trauma patients could have an impact on risky behaviors of non-helmeted motorcycle crash patients.

The primary limitation of this study is that it is a retrospective review of patients admitted to the hospital. As such, it misses a large number of motorcycle crash victims: those evaluated in the ED but discharged home. Also, as a review of injured motorcycle patients, it may not reflect the practices of all motorcyclists. A second limitation is that we looked at data from one large trauma center. It is possible, albeit unlikely given this state's trauma structure, that motorcycle crash patients were admitted to other Rhode Island hospitals during this period. However, data from 2003 confirm that the number of admitted motorcyclists statewide is the same as the number reported in the trauma registry for this hospital, suggesting that this study captured the majority of admitted motorcycle crash patients.¹⁴ Our numbers also correspond with national Fatality Analysis Reporting System data on Rhode Island motorcycle deaths from 2000-2004 (37 deaths in hospital, 23 of which were unhelmeted; 9 deaths on scene, 4 of which were unhelmeted).¹⁵ A third limitation is that Rhode Island's limited helmet law and its enforcement may differ from other states; this may affect the generalizability of our findings. Fourth, there is no control for crash severity or for other risk-taking behaviors that may be confounders for helmet use. Finally, this study was a retrospective review, relying on providers' accurate documentation of helmet use.

Future studies should explore motorcyclists' reasons for resisting helmet and protective gear, the efficacy of enforcement and behavioral interventions to increase helmet use, and possible confounders for helmet use such as other risk-taking behaviors.

CONCLUSION

In a state with a limited helmet law, injured motorcyclists' compliance is poor. More passengers wear helmets than operators, but despite state law requiring helmet use for young motorcyclists, age < 21 is not associated with helmet use among injured motorcyclists. Not wearing a helmet was associated with increased fatalities, increased utilization of hospital resources, and BAC > 0.08. Greater enforcement of existing laws or a universal helmet law are possible alternatives to increase helmet use. Other future initiatives could include targeted behavioral interventions for un-helmeted motorcyclists or those at high risk.

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Colorectal Cancer In Rhode Island

Arvin S. Glicksman, MD

As an urban state with an aging population, Rhode Island has had the highest cancer incidence in the country. The incidence of colorectal cancer in Rhode Island has been above the national average. At the request of the Rhode Island Department of Health, guidelines for screening for colon cancer were developed. A Task Force representing multiple medical disciplines from various parts of the state was convened. The recommendations for screening for standard risk and high risk populations were developed and published in *Medicine & Health/Rhode Island* as a standard of care for the state.¹ This statewide effort to improve the prevention and early detection of colon cancer by an increased utilization of screening, primarily colonoscopy has reduced the death rate to approximately 10% below the national average.² There remains, however, approximately 40% of the population over the age of 50 who have not as yet had any screening for colorectal cancer. The Rhode Island Cancer Council has undertaken a series of statewide surveys to determine current practices, which resulted in half the population at risk being screened, and to determine the barriers preventing the remaining population from having the recommended procedure.

To understand current practices and resources, the Rhode Island Cancer Council sent a series of questionnaires to primary care physicians in the state and to the 70 physicians who are performing endoscopy procedures in Rhode Island. Primary care physicians and the practicing endoscopists are almost uniformly in agreement that the preferred screening test for high risk population is colonoscopy and three-quarters of the primary care physicians and 90% of the endoscopists prefer colonoscopy for standard risk populations as well.³ In addition to this uniformity on recommendations for screening for colorectal cancer, the state has been found to have adequate endoscopy facilities so that waiting time to have the test performed is less than 3 months for 95% of the people with insurance. The waiting time for underinsured or non-insured individuals is almost the same; however, the possibility of having an early appointment for patients with symptoms does not exist for the uninsured and underinsured populations.⁴

In a survey of 250 primary care physicians (with a response rate of 50%), the barriers that they perceived to be most important for colonoscopy were time, patient acceptance, and third-party coverage. The 62 endoscopists were also surveyed and 69% responded. They listed third-party coverage as their number 1 barrier, patient acceptance as second importance, and resources available as the third importance. (Table 1)

Based on the information we had obtained from the primary care physicians and the endoscopists in the state, a survey of individuals over the age of 50 was undertaken. One thousand nineteen individuals, age 50 and over, were surveyed in all counties in the State of Rhode Island. (Table 2) Respondents were asked whether they had a primary care

physician, whether they were ever screened for colorectal cancer and which test was used. For those who were recommended for colonoscopy, but had not gone for the test, a series of questions was asked to determine what perceived barriers existed for these individuals. Finally, the respondents were asked about family history of colorectal cancer. (Table 3)

In this survey, 78% of individuals over 50 stated that their primary care physicians recommended colorectal cancer screening and 79% of them have complied with the recommendations (62% of population over 50). We found that over 70% have had colonoscopy as their screening procedure. The barriers, which these people reported, included fear of the test and the prep, for 27%; procrastinating or intent to go for the test,

Table 1. Barriers to Colonoscopy

Barriers to Colonoscopy	Most Important		Least Important	
	Primary Care Physicians*	Specialists**	Primary Care Physicians	Specialists
Time	25	30	10	46
Resources	37	60	2	25
Patient Acceptance	25	51	7	18
Third Party	26	70	4	14

*None perform procedure
**All perform procedure

Table 2. Statewide survey (N=1057)

Male 329 Female 728 (Total 1057)

Race	Interviewed	State Census (2000)
White	665 (62%)	81.9%
Black/AA	107 (10%)	4%
Hispanic	71 (7%)	8.7%
Asian	9 (1%)	2.3%
Native American	12 (1%)	1%
Other/Not Stated	193 (18%)	---

23%; other medical problems, 15%; no health insurance, 6%; no reason stated, 22%. Thus, in Rhode Island, approximately 62% of individuals over 50 stated that in response to their primary care physician's recommendation, they had been screened. Seventy percent had had colonoscopy as their screening procedure. The majority of the barriers reported included fear of the procedure, procrastination, or intent to test in the near future, the need to give priority to existing medical problems, lack of time required for the prep and procedure. Less than 5% had stated that they did not have health insurance and 2% said that the co-pay was a problem for them.

The results of our survey indicate that the primary care physicians in Rhode Island strongly recommend colonoscopy as the screening test for men and women over the age of 50 and that 79% of individuals were

tested after the recommendation had been made, and 72% had colonoscopy. It is not surprising, therefore, that the most recent statistics for colorectal cancer in Rhode Island have shown a significant decrease in mortality. While the efforts at community education have been successful, continued programs aimed at the hard-to-reach population, the socioeconomically depressed and minority groups, require due diligence.

The impression of the primary care physicians and the endoscopists was that patient acceptance was one of the most important barriers to colonoscopy. For the most part population interviews bear this out. Individuals gave various reasons but the majority indicated a reluctance to make this examination a priority. Over 50% of respondents either stated "no reason" or procrastination for not scheduling the examination as advised by their

primary care physician. This population requires a more intensive educational program to motivate them to undergo this potentially lifesaving examination.

Another concern is health insurance. Although Rhode Island has one of the highest insured populations, problems still exist because of the co-pay for this examination. The two medical insurance companies in Rhode Island each have a substantial co-pay that can reach \$1,000. Medicare co-pay is \$200 for individuals without medi-gap insurance. There are additional pathology and other charges, which can come to over \$1,000, enough to frighten many individuals with only a Social Security income. (Figure 1). This problem will require considerable public pressure to change, both locally and nationally.

Table 3. Reported Barriers to Colonoscopy (N=119)

Reason	Number of Respondents
Fear of test	22.7%
Procrastination	19.3%
Other medical problems took priority	12.6%
Lack of time	11.8%
Does not want test	6.7%
No health insurance	5.0%
Felt they were too old	1.7%
Co-Pay	1.7%
No reason stated	18.5%

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PROVIDER/SERVICES	DATES OF SERVICE	UNITS	AMOUNT CHARGED	MEDEX ALLOWED	YOUR CO-INS	BENEFITS	YOUR BALANCE
MEDEX CLAIM #: MEDICARE CLAIM #:							
PROVIDER: MD ONC							
OUTPATIENT SURGERY	03/21/05-03/28/05	1	1,300.00	300.56	60.11	0.00	999.44
TOTAL			1,300.00	300.56	60.11	0.00	999.44
<small>A-EXCEPT WHERE PROHIBITED BY STATE LAW, PROVIDERS LOCATED OUTSIDE OF MASSACHUSETTS, WHO DO NOT ACCEPT MEDICARE ASSIGNMENT, MAY BILL YOU FOR UP TO 15% ABOVE THE MEDICARE ALLOWED AMOUNT. (2801) B-MEDICARE PAYS FIRST ON THESE SERVICES. BLUE CROSS AND BLUE SHIELD THEN MAKES PAYMENT AS YOUR SECONDARY PAYER. THE ABOVE AMOUNT REPRESENTS OUR COVERAGE ON THIS CLAIM. (2802)</small>							
MEDEX CLAIM #: MEDICARE CLAIM #:							
PROVIDER: ANATOMICAL PATHOLOGY CONS LAB							
	03/28/05-03/28/05	1	198.00	34.52	18.90	0.00	103.48
TOTAL			198.00	34.52	18.90	0.00	103.48
<small>A-EXCEPT WHERE PROHIBITED BY STATE LAW, PROVIDERS LOCATED OUTSIDE OF MASSACHUSETTS, WHO DO NOT ACCEPT MEDICARE ASSIGNMENT, MAY BILL YOU FOR UP TO 15% ABOVE THE MEDICARE ALLOWED AMOUNT. (2801) B-MEDICARE PAYS FIRST ON THESE SERVICES. BLUE CROSS AND BLUE SHIELD THEN MAKES PAYMENT AS YOUR SECONDARY PAYER. THE ABOVE AMOUNT REPRESENTS OUR COVERAGE ON THIS CLAIM. (2802)</small>							
GRAND TOTAL			1,498.00	335.08	79.01	0.00	1,102.92

Figure 1.

A Place To Be Healthy:

Blueprint For a New Free Clinic For the Medically Uninsured of Rhode Island

Rebecca Gerber, Margaret Charpentier, PharmD, BCPS, Stephanie Tecun, Molli Massi, Judy Diaz, RN, MPH, Anne S. De Groot, MD

PREVALENCE OF NON-INSURANCE IN RHODE ISLAND

Even though Rhode Island is a small state with an excellent community health center network, at the end of 2005, 119,157 individuals did not have health insurance for a period greater than one year.¹ This figure does not include undocumented individuals without health insurance. Lack of insurance disproportionately affected Rhode Islanders who had yet to finish high school (23%) or were of Hispanic heritage (20%). More than half (56%) of the Hispanic population in RI was uninsured in 2005, compared to one in five (21%) whites and African-Americans (19%).

Even though the percentage of uninsured individuals in Rhode Island is lower than in some states, the number is rising rapidly – more rapidly than the rate of uninsured individuals in the US as a whole. (Figure 1) The percentage of Rhode Islanders under the age of 65 who are uninsured almost doubled from 6.9% in 2000 to 13.3% in 2005.² In part, this is due to declines in employer-based health care coverage. The number of

Rhode Islanders covered by employer-based health insurance dropped from 78% to 67% in 2005, mainly due to changes in eligibility for employer health insurance plans.³ The rate of eligibility is much lower than surrounding states (77% in Massachusetts) and the nation (78%).^{4,5}

STATE AND FEDERAL HEALTH CARE PROGRAMS; WHAT IS AVAILABLE AND WHO IS ELIGIBLE

RIteCare is the extension of Rhode Island's Medicaid program. Eligibility depends on two factors: (1) the individual's "federal poverty level" (FPL) and (2) citizenship status. In Rhode Island, eligibility for RIteCare is at 250% FPL for children, and 185% for their parents. A new proposal being considered by RI state legislators would reduce the RIteCare cap to 185% for children and 133% for their parents. Due to RIteCare, non-insurance among children in Rhode Island dropped from 12.5 % in 1995 to 2.5% in 2000, the lowest in the nation; however, this trend recently reversed. By 2005, the rate of non-insurance in chil-

dren had increased to 7.7%, ranking 12th in the nation. As of June 2007, undocumented children were no longer eligible for RIteCare (except those enrolled prior to this date).⁶

Additional individuals who do not qualify for RIteCare include people making more than 200% of the FPL, pregnant women with income above 250% of the FPL and children (and their parents) in households with income above 250% of the FPL. Since many of the individuals excluded by these criteria are unable to pay for health insurance, they belong to the ranks of the uninsured in RI.

FOUR GROUPS OF UNINSURED

The Rhode Island Department of Health breaks the uninsured into four groups: (i) the employed uninsured; (ii) low income uninsured; (iii) uninsured childless adults; and (iv) uninsured children.

Employed uninsured

Most (64%) of the uninsured in Rhode Island are employed (Figure 2).⁴ Most of these people (78 %) did not graduate from high school. Many earn too much to qualify for state-funded health care but not enough to pay for health care without an employer's assistance. In Rhode Island, the average monthly cost of health care insurance for one family in a non-group policy is equal to the monthly income of an individual earning minimum wage.⁷ Being uninsured is also potentially very cost-intensive – the average cost of an emergency room visit ranges between \$700 and \$1000.⁸

Individuals who are self employed are also frequently not insured: the RI DOH reports (2007) that 20% of self-employed individuals are uninsured, a level of non-insurance that is second only to unemployed Rhode Islanders (39% of unemployed Rhode Islanders are uninsured).

Low income uninsured

Approximately one-third (32%, 37,871) of the uninsured are low-income families (adults and children) whose in-

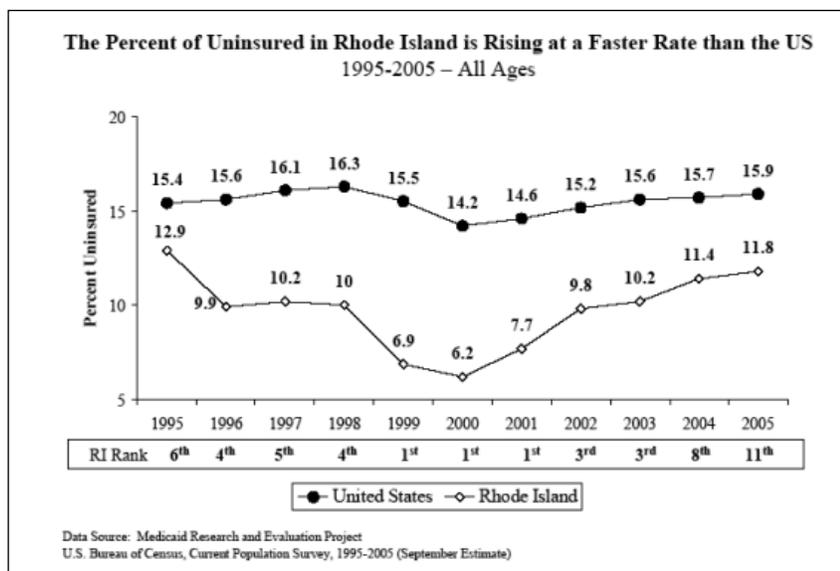


Figure 1: Changes in the number of uninsured 1995-2005. An October 2006 report on the "Profiles and trends of the uninsured in Rhode Island – 2005 Update" from the Medicaid Research and Evaluation Project illustrates that the percent of medically uninsured individuals in Rhode Island is rising at a faster rate than the national average. From 2000, a rise from 6.2% to 11.8% can be seen, a near doubling in just five years.¹

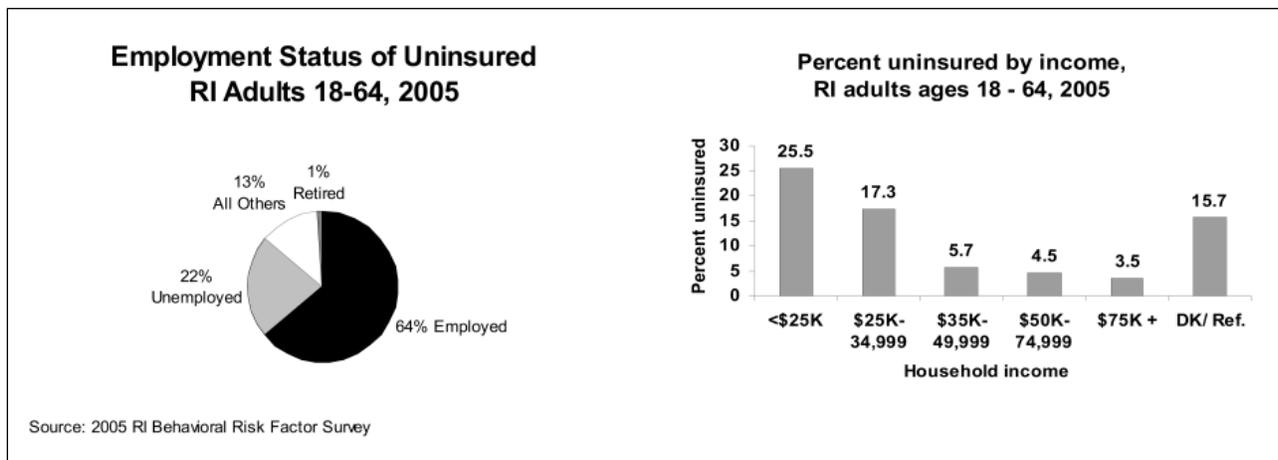


Figure 2. Employment and income status of the uninsured in Rhode Island. 64% of uninsured Rhode Islanders work; most earn wages that make it difficult to pay for health insurance. Behavioral Risk Factor Surveillance System (BRFSS)

comes are low enough to make them eligible for RIteCare but they are not enrolled for reasons that may be related to lack of information about the program or their inability to complete the forms. Efforts to increase enrollment of eligible families and children are underway.

Uninsured childless adults

Nearly two in five (38%, 45,577) of the uninsured are low-income childless adults who earn less than 300% of the FPL. Adults who do not have children are ineligible for public insurance programs in Rhode Island.

Uninsured children.

According to the Rhode Island Kids Count Fact Book,⁹ 5.8% of Rhode Island's children under age 18 are uninsured. While the number of uninsured children initially declined between 1996 and 2000 due to the implementation of RIteCare, there has been a dramatic increase (tripling) of the number of uninsured children in Rhode Island over the half decade between 2000 and 2005. (Figure 3) The number of uninsured children is expected to increase in the next few years due to reductions in federal reimbursements for uninsured children and also due to exclusion of undocumented children from RIteCare as of June 1, 2007.

In Rhode Island, 8% (9,090) of the 119,000 uninsured Rhode Islanders in 2005 were low-income children and parents, earning between 250% FPL and 300% FPL, making them ineligible for the current RIteCare program, but unable to afford commercial coverage.

In summary, more than 119,000 Rhode Islanders are uninsured. According to the authors of the BRFSS report, if the rate of rise in the number of uninsured were to continue unchecked, Rhode Island would face a significant insurance crisis, with an estimated 19.5%—or one of every five people—uninsured by the year 2010.¹

HEALTH CONSEQUENCES OF NON-INSURANCE

Uninsured adults are less likely to have routine health screens and more likely to participate in unhealthy behaviors, according to data provided by a survey of more than 2000 Rhode Islanders, performed by the RI DOH in 2005. Adults with household incomes below 200% of FPL had higher rates than households above this level for 11 of the 15 health risks that were evaluated in this survey (vaccinations, risk behaviors, health screens). A greater percentage of these lower income adults were uninsured (20% vs. 5%), had no regular health provider (26% vs. 10%), and had never had their cholesterol checked (27% vs. 12%) than the insured.¹⁰

This was also true in a more recent study of national trends, published in 2007. Among 10,088 older working adults, the working poor were significantly less likely to receive breast cancer (RR 0.92, 95% CI, 0.86–0.96), prostate cancer (RR 0.89, 95% CI, 0.81–0.97), and cholesterol screening (RR 0.91, 95% CI, 0.86–0.96) than the working non-poor.¹¹ Lack of insurance has also been associated with lower rates of blood pressure control

among treated hypertensives, compared to patients who have either federal/state insurance or private insurance.¹²

Women without insurance and women on Medicaid have more advanced disease at first diagnosis of breast cancer and have a lower survival rate than women with private insurance.¹³ Researchers at Case Western found a higher rate of emergency colon resection for colon cancer among the uninsured ([AOR], 2.62; 95% CI, 2.05-3.34) than privately-insured patients. Emergency colorectal cancer resection was also associated with greater than 3-fold increased in-hospital mortality, excess hospital days as a result of longer lengths of stay, and more than 250 million dollars (95% CI, 180 million-334 million dollars) in hospital charges.¹⁴

Extrapolating from information about the uninsured in Maryland,¹⁵ uninsured Rhode Islanders are probably paying as much as \$73 million dollars in uncompensated care, and the government is providing an equivalent amount of funding. Table 1 provides a projection of the amount paid in RI by the uninsured, based on information obtained in Maryland and estimates that there are 119,000 uninsured individuals in the state. Actual figures may differ due to the proportion of health care costs covered by state and private insurers in Rhode Island, but \$75M is a reasonable approximation of the number of uncompensated health care dollars that are being paid by Rhode Islanders who can least afford those costs. (Table 1)

Source of funds for medical coverage	Cost (Maryland)	% of total	Total cost, RI [est. per cap costs]
Out of pocket (Uninsured)	\$633	27%	\$75,327,000
State/Local Government	\$497	21%	\$59,143,000
Federal Government	\$401	17%	\$47,719,000
Other	\$380	16%	\$45,220,000
Private/Insurance/Physicians/Philanthropists	\$460	19%	\$54,740,000
Total per uninsured individual	\$2,371	100%	\$282,149,000

Table 1. Estimated costs of non-insurance for Rhode Island, based on figures from Maryland.

CARE FOR THE UNINSURED IN RHODE ISLAND – WHAT IS AVAILABLE?

Local low cost health care plans

HealthAccessRI was developed by Dr. Michael D. Fine of Hillside Family and Community Medicine in 2007. In January 2008, this limited plan became available statewide. There are 21 participating doctors. The fees vary by practice. An initial downpayment of \$15-80 is required, followed by a monthly retainer of \$25 or \$30 per person (with discounts for families) and office-visit copays of \$5 or \$10. For this price, patients are able to obtain yearly physicals, well-child visits, routine checkups, sick visits within a day of calling, school and sports physicals, family planning, preventive health advice and are also given the number of a doctor to call at any hour when they feel sick. However, the plan does not cover specialty care, hospitalization, x-rays, laboratory work, prescription drugs, emergency room visits and mental-health care.¹⁶ The group website listed 200 active members as of January 2008.

The Community Health Centers of Rhode Island provide sliding-scale access to care for the uninsured in Rhode Island. Participating clinics include Blackstone Valley Health Community Health Center, Thundermist of Woonsocket, and the five Providence Neighborhood Health Centers. These centers provide health care to insured individuals, to members of RIteCare, and to uninsured individuals. Each center sets its own sliding payments scale, based on income, for uninsured individuals. Ten percent of the Rhode Island population receives health care in one of five community health centers and an estimated thirty thousand of these patients are uninsured.¹⁷

The Rhode Island Free Clinic

In most states, some people, depending on their community, have access to free health care clinics or clinics that provide care to the uninsured at no cost. Only one free clinic operates in Rhode Island, the **Rhode Island Free Clinic (RIFC)**.¹⁸ According to the clinic website, the RIFC serves between 500 to 1000 patients per year. RIFC has provided care for nearly 1,700 patients (9,000 visits) since opening. The majority of the patients (72%) live in Providence. The number of people who seek care at RIFC but do not receive it, based on public information, is 40 per week or approximately 2,000 individuals per year.

A second Free Clinic in Rhode Island: Clinica Esperanza/Hope Clinic

Since community health center clinics cover an estimated 30 to 35,000 uninsured, and the RIFC provides care for an additional 1,000 individuals, current free and low cost care clinics can be said to cover less than 25% of the estimated need (119,000). The high cost of health insurance decreases access to care, increases the risk of poor health outcomes and may eventually lead to higher health care treatment costs on a statewide level. This is reflected in the Commonwealth Fund's ranking of Rhode Island 25th out of 50 states in terms of mortality amenable to health care deaths; thus improving access to preventive care measures such as blood sugar monitoring, cancer screening, and blood cholesterol screening could improve the health of individuals living in Rhode Island, and may also avert hospitalizations. Although as yet unproven, additional Free Clinics could reduce state expenditures on RIteCare costs.¹⁹

The establishment of a new Free Clinic makes sense, given the current

state of non-insurance in Rhode Island. Therefore, a group of medical volunteers established the foundation for a new free clinic in Olneyville, a majority-Hispanic neighborhood. The **Clinica Esperanza / Hope Clinic (CEHC)** will be staffed by local volunteer providers including culturally competent Spanish-speaking volunteers. The clinic will be managed by the volunteers (except for a part time coordinator, a position mandated by the Department of Health), and supported by the local community. CEHC will also collaborate with other social service agencies in RI to provide care for their clients, who often present with urgent needs. Priority will be given to patients who have chronic medical conditions requiring regular intervention to avoid hospitalization and excess health care expenditures (diabetes, cardiovascular conditions) in addition to interventions that may avert hospitalizations entirely (health maintenance and cancer screening).

Currently, the city and state have made firm offers to support the clinic during its first year, giving the clinic founders time to establish a steady source of grant dollars from foundations and other sources. For more information visit <http://www.aplacetobehealthy.org>, write us at info@aplacetobehealthy.org, or visit the clinic at The Plant, 60 Valley Street, Olneyville, in Providence, Rhode Island.

The mission of the Clinica Esperanza/Hope Clinic CEHC is to offer clinic-based medical care and preventive health services to adults and children living in Rhode Island who do not have health insurance or cannot afford to purchase those services. The Clinic will open in May 2008 and begin by providing primary care to chronically ill adults. Additional services such as a diabetes clinic, a women's clinic, and an adolescent clinic will be added.

CONCLUSION

With the Clinica Esperanza, uninsured Rhode Islanders will have the opportunity to receive high quality, culturally sensitive medical care.

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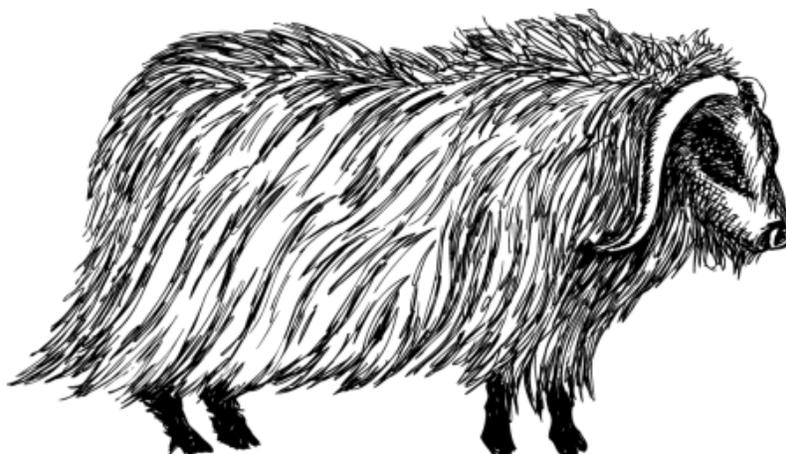
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Covered But Still At Risk: How Can Policymakers Address Increased Cost Sharing In Private Health Insurance?

David A. Rochefort, PhD, Marie Ganim, PhD, and Kevin P. Donnelly, MA

Over the past few years, several states have either passed, or considered, proposals to expand health insurance. In Rhode Island, Lieutenant Governor Elizabeth Roberts has just proposed the Healthy Rhode Island Reform Act of 2008 that would move the state incrementally toward universal coverage. Meanwhile, on the national level, health care has surfaced as one of the leading domestic issues in the 2008 primary campaign. Longstanding ambivalence within our society about the concept of health care as a right is being revisited, and a new debate is under way about the role of government as insurer of last resort and regulator of the private health insurance market.

Yet even as the states and federal government confront the problem of the uninsured, there is reason to be concerned about the scope of benefits in private health insurance plans. Recent studies show a broad tendency toward increased consumer cost sharing in employment-based coverage. At worst, such features impose a heavy burden of out-of-pocket spending that can result in lack of access to needed care, medical debt, or both. Unless this erosion of financial protection is addressed, health care insurance threatens to become health care “underinsurance,” and the meaningfulness of coverage expansions will be in doubt.

TRACKING THE EROSION OF COVERAGE: RHODE ISLAND AND THE NATION

The cost of premiums for employment-based health insurance has been increasing sharply, with a national average that now tops \$12,000 for family coverage.¹ Workers are being squeezed, however, not only by expensive premiums, but also by the spread of a variety of forms of cost sharing. Between 2006 and 2007, the use of deductibles increased across all types of plans, including PPOs, HMOs, and Point-of-Service Plans. **High-Deductible Health Plans (HDHPs)**, a recent addition to the health insurance market place, combine lower premium payments with very high deductibles. In 2007, the average deductible amount for workers in this type of plan was \$1,179 for those with single cover-

age. Nearly all employees with coverage have cost sharing for hospitalization—a separate hospital deductible, a fixed copayment, percentage charge, or per diem. Copayments for physician office visits and prescription drugs are now the norm.

In Rhode Island, health policy officials have examined employers’ health insurance coverage practices and found evidence of changes parallel to those for the nation as a whole.² According to studies in 1995 and 2005, the overall segment of employers in the state providing coverage to their workers fell from 79% to 74%. In general, even among companies that offer insurance, a shrinking number of full-time and part-time employees meet the eligibility criteria. At the same time, employers, on average, are paying a lower share of the cost for individual and family coverage. Employers paying the full health care premium for their workers dropped by close to one-quarter between 1999 and 2005. (Figure 1)

A majority of Rhode Island employers (62%) currently require a deductible as part of their plans, and the amount of these deductibles has risen over time.² By 2005, 18% of employers offered plans with deductibles of \$1,000 or more for single coverage, and 17% offered plans with deductibles of \$2,000 or more for family coverage. (Figure 2) Compared to other states, the level of cost sharing in Rhode Island actually seems to be among the lowest in the nation, based on a 2002 analysis of the average percentage of

medical bills paid by insurance carriers.³ Yet, if left uncorrected, current trends seem certain to erode this “actuarial value” of insurance plans to consumers in the state.

State policy has encouraged employers and health insurers to move in this direction. Overriding existing legal provisions for first-dollar coverage, or zero deductibles, for particular mandated health benefits, lawmakers in 2005 agreed to allow the marketing of HDHPs in conjunction with federally qualified Health Savings Accounts.⁴ In 2007, in an effort to expand insurance for workers in small businesses, the Office of Health Insurance Commissioner announced a new low-cost health benefit plan featuring substantial annual deductibles and other kinds of cost sharing. In the summer of 2007, Governor Carcieri proposed steep co-pay increases within the health plan of the biggest state workers’ union, although that move has now been blocked by a Superior Court judge.⁵

THE CONSEQUENCES OF COVERAGE LIMITATIONS

In a nationwide survey of more than 3,000 adults by The Commonwealth Fund in 2003, Schoen et al. identified 12% of the insured population as underinsured based on out-of-pocket medical expenses in excess of 10% of income (5% of income for those under 200% of the federal poverty level), or health insurance deductibles equal to at least 5% of income.⁶ Comparing this group with those having more comprehensive coverage,

Figure 1. Rhode Island Employers Paying Full Premium for Individual Coverage.

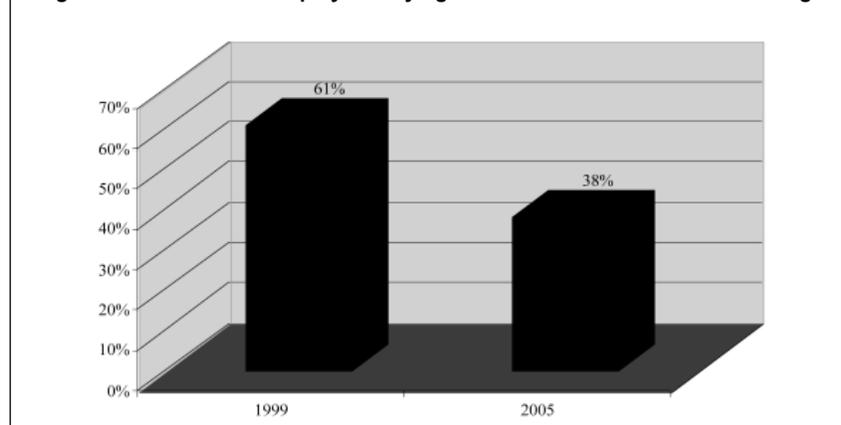
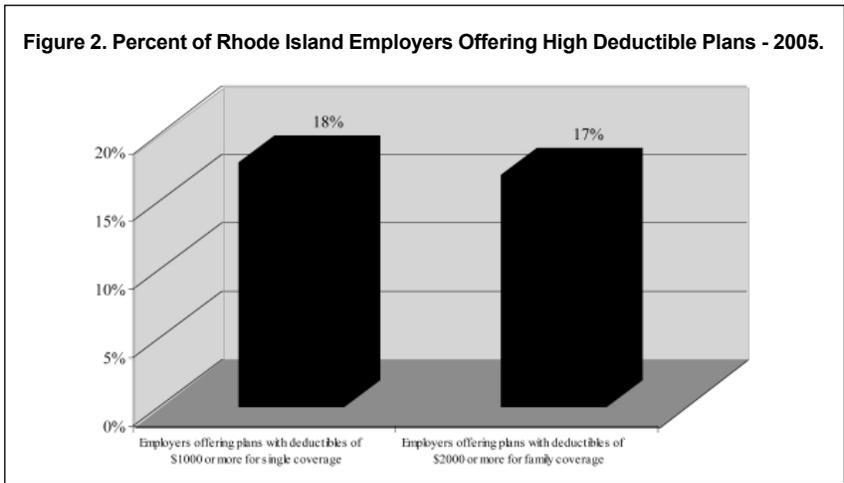


Figure 2. Percent of Rhode Island Employers Offering High Deductible Plans - 2005.



researchers found the underinsured were more likely to have gone without needed care during the past year in regard to filling prescriptions, lab tests, doctors' visits, and specialist services. Additional analysis of these data by Davis et al. also uncovered a direct relationship between the size of health plan deductibles and access: the higher the dollar amount, the greater the percentage of respondents reporting barriers to care.⁷ The study concluded that higher patient cost sharing was "a blunt instrument" for improving the efficiency of medical care because it failed to distinguish "between use of effective services and inappropriate care."

A second vein of research links medical debt to underinsurance and cost sharing. Research has documented the prevalence of financial distress in relation to unpaid medical bills. According to these studies, the majority of those with medical bill problems do have insurance coverage of some type.⁸ Those plans, though, have high deductibles, lack of adequate benefits for particular items like prescription drugs or dental care, and caps on the maximum amount an insurer will pay for particular services or overall on a lifetime or annual basis.⁹ Medical debt can create a downward financial spiral that reverberates throughout the household budget, affecting housing, food, and heat. Many individuals resort to credit cards to pay accumulating medical expenses, a practice that can invite difficulties with bill-collectors and even bankruptcy.¹⁰ In a recent survey of registered voters in Rhode Island (a collaboration between Northeastern University researchers and Ocean State Action) 14% of insured respondents said they had medical bills they were paying off over time.¹¹ Also among the insured, 18% said "yes" when asked "In the past 12 months, have you or a

member of your family put off any sort of treatment because of the cost you would have to pay?"

Beyond the consumer realm, underinsurance is also a significant factor in financial strain within the health care industry. A report made available on a web site concerned with helping health care providers manage their "self-pay receivables" characterizes bad debt as a situation heading from "a quandary" to "a calamity" on the national level, estimating that the total amount of delinquent health care debt available to be serviced or sold amounts to somewhere between \$25 billion and \$150 billion.¹² According to the president of the Hospital Association of Rhode Island, uncompensated care increased 40-50% in Rhode Island over the last year.¹³

DEFINING A SPECTRUM OF POLICY OPTIONS

The responsibility for regulating health insurance falls primarily on state government, with the exception of the federal Medicare program and plans offered by companies that "self-insure." The advent of High Deductible Health Plans and other policies that increase cost sharing is challenging state policymakers to re-examine their responsibilities and options as regulators.

1) Do Nothing

One option for policy makers is to do nothing about cost-sharing trends, allowing them to continue to spread throughout the health insurance market place. A policy of doing nothing could result under different scenarios, including simple lack of attention from officials or a stalemate among powerful interests who resist assum-

ing any of the burden of assisting the underinsured. Some conservative commentators laud higher cost sharing because it will increase the availability of coverage and heighten consumers' price sensitivity when faced with a decision about seeking medical care. The fault with this argument lies in the fact that coverage declines, not expansion, have accompanied the spread of cost sharing, and consumers who forgo needed care are likely to end up costing themselves and the system more money down the road. Whatever the source of inaction as a policy response, be it inadvertence or design, this course seems certain to expand the problems of uninsurance to people who nominally have insurance coverage but lack true financial protection.

2) Consumer Education

Consumers often are confused about the way HDHPs operate, and for good reason. Plans differ in regard to the services excluded from the application of deductibles, the rules governing how out-of-pocket payments apply to deductibles in specific situations, and the patient costs for in-network and out-of-network providers.¹⁴ One important role that public policy could play is to require standardized information be given to consumers who are considering enrollment in a HDHP, such information to be provided by the employer, insurer, state insurance department, or all three. All consumers with cost sharing responsibilities could also benefit by having more information about the charges for different kinds of care and providers when deciding on medical treatment options. While some insurers in Rhode Island have begun to recognize the importance of this idea, government officials could ensure that the information presented to insured individuals conforms to a format that is accurate and user-friendly.

3) Consumer Subsidies

The main concern with insurance cost sharing arises with regard to those subscribers whose uncovered expenses accumulate into a substantial sum. Building upon Option 2 above, regulators could take action to better acquaint consumers with the kinds of payment discounts for which they might be eligible from hospitals and other providers. As a more direct method of dealing with the contingency of excessive costs, policy makers could also adopt some subsidy mechanism as a safety net for people who fall be-

low a certain income standard or whose insurance costs surpass a defined percentage of income. Approaches to explore include tax credits or a special public fund for co-pay assistance modeled along the lines already developed by some charitable groups.

4) Weak Regulation

Alternatives for direct regulatory action on cost-sharing trends are wide-ranging. A relatively weak but still useful step would be to monitor more closely the impact of out-of-pocket spending on consumers' use of health services and health status. In fact, Rhode Island's law authorizing HDHPs was accompanied by a five-year sunset provision as well as the requirement for an evaluation by the Office of Health Insurance Commissioner on the effect of deductibles and coinsurance practices. Ongoing assessments of this kind, combined with regular public hearings and input from the OHIC Insurance Advisory Council, could provide a stream of information to guide state policy development.

The Internal Revenue Service has identified a "safe harbor" list of preventive care services, including periodic health evaluations, routine prenatal and well-child care, child and adult immunizations, tobacco cessation, obesity weight loss programs, and screening activities, that are recommended "first-dollar" health insurance benefits. By adopting this type of list into state law—applying it to HDHPs, or possibly all health plans that are subject to state regulation and review—Rhode Island policy makers could ensure that certain desirable areas of utilization are protected from the health service reductions driven by cost-sharing penalties. Although such plans would be more expensive than bare-bones alternatives, the promise of timely preventive care is improved health and reductions in service utilization and costs over time.

5) Strong Regulation

A stronger regulatory approach is embodied in a law proposed in the 2007 legislative session in Rhode Island. The law would have required all employers to establish and certify the funding of Health Savings Accounts for their employees if they offer high-deductible health plans.¹⁵ The same bill, which ultimately was vetoed by the governor, sought to relieve the growing financial pressure on hospitals in the state by mandating that private health insurers pay for any hospital debt incurred under a HDHP.

Other states have focused on setting allowable limits for cost sharing. A California bill in 2006, which was not enacted, proposed limiting the out-of-pocket expenses associated with deductibles as well as copayments, in addition to providing for greater transparency in the provider charges being passed on to consumers by insurance plans.¹⁶ Massachusetts officials have given extensive attention to cost-sharing in that state's landmark health reform program and its "individual coverage mandate." Currently, those who qualify for the newly established Commonwealth Care plan are exempt from deductibles, while a schedule of variable co-pays is in place for those up to 300% of the federal poverty level who acquire other forms of coverage through the state's Health Insurance Connector.¹⁷

CONCLUSION

A pointed comment in Rhode Island's 2006 report on employment-based coverage signals the danger of increased consumer cost sharing as follows:

"In summary, employers are addressing rising health care costs by lowering their premium contributions and passing the cost on to employees, and by utilizing health insurance plans with higher deductibles, making it necessary for employees to pay more at the point of service. Both of these strategies can result in employees being underinsured, with potentially significant health consequences."²

Current trends are exposing a growing class of insured individuals to many of the same health care inequalities and financial risks faced by those who lack insurance coverage. As the numbers in this disadvantaged group rise, it will add to awareness of the crisis state of American medical care and the need for developing a system-wide reform, whether on the state or federal levels. Until that movement reaches fulfillment, however, there is compelling reason for policymakers to provide stronger consumer protections against the phenomenon of increased cost sharing in private health insurance.

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Dr. Keefe and His Surgery

Fred Arsenault

Driving along Blackstone Boulevard heading toward Angel Street on the East Side of Providence, you may notice a red-bricked façade building, No. 262, which has been described as “different in appearance from all the buildings around it; for they are all houses and it is an institution.”¹ Even today, it seems out of place in the largely residential neighborhood. For almost thirty years, it was known as the John W. Keefe Surgery, a private surgical hospital, built, owned and operated by Dr. John W. Keefe, the first Rhode Island physician to practice surgery as a single specialty.

In the late nineteenth century, surgery was a bold path to follow within the medical community; there was vigorous debate about its safety and therapeutic value. Often, physicians regarded surgeons as radicals, eager to impose untested operations upon an unsuspecting public and to “take the life out of people and money out of their pockets.”² John W. Keefe never hesitated to debunk such doubt, and thereby became a leader in surgical practice throughout the state and nation.

Today the existence of the John W. Keefe Surgery is largely forgotten. The building houses the New England Academy of Torah; before that, it was a Franciscan friary. Yet, in the “first life” Dr. Keefe established for its time a state-of-the-art hospital, conducted anatomical research, and developed new operative procedures.

“Separate from the general practitioner....”

Born and educated in Worcester, MA, John W. Keefe first studied medicine at the University of Michigan and received his medical degree from University Medical College, New York University, in 1884. He completed a two-year internship at Bellevue Hospital’s First Surgical Division, a training opportunity reserved for those with academic excellence and clinical promise.

In 1886 Keefe settled in Providence as a surgical extern at Rhode Island Hospital. Such urban hospitals offered training opportunities for physicians before

they entered private practice. Traumatic injuries and burns from industrial accidents were common among factory workers, mostly recent immigrants, who largely paid the price for the city’s continued progress and ensuing wealth.³

By 1890, Keefe had an office on Broad Street, near what is now Trinity Square, and took an active role in the Providence Medical Society. At the “Friday Night Dinner Meetings,” Keefe argued for the timely surgical removal of an infected appendix.

With his practice and financial status reflecting his reputation, in 1901 Keefe relocated his office to Benefit Street, across from the old courthouse; eleven years later he moved his family to Governor Street.⁴ Shortly afterward, he began construction on his surgical hospital on Blackstone Boulevard, which opened in 1915. He remained its president and chief surgeon until his death in 1935, at 72 years of age.

“The character of the Surgeon”

A contemporary historian, Patrick T. Conley, has noted: “John W. Keefe typified the socially upwardly Irish-American, who desired to project a gentlemanly image and to dispel the nineteenth-century stereotype of the rowdy, fighting Irishman.”⁵ By 1893, he was considered an “eminently successful physician and surgeon... a genial and cultured gentleman and a leader in surgery in this city (Providence).”⁶

Family records indicate a strong Irish-immigrant work ethic, yet Keefe credited his single year in Michigan as normative for his professional future. “At Ann Arbor the atmosphere of freedom from binding traditions, of wholesome democracy, and of serious effort made a profound impression upon the young student. Men stood on their merits.... The conservatism of the East and the regard for the established order that had been his birthright were blended with the progressiveness and the



pride in pioneer accomplishment of the West with a result that has been plainly written on his career.”⁷

Not surprisingly, John W. Keefe promoted surgery with a preacher’s fervor. His generation was the first to utilize practical anesthesia, which was less than fifty years old, and to practice effective asepsis, which at Rhode Island Hospital, came into use around the time he arrived in Providence. The “raw nerve” and speed of the Civil War battlefield surgeon was fading into memory; surgeons of Keefe’s time were expected to develop techniques of finesse and manipulation, because now they simply had more time and a “clean” working environment. The lessons of experience began to galvanize reliable scientific foundations, to establish reliable protocols, and to formulate a code of ethics for surgical practice.

Then, there were less obvious factors which aided the growth of surgery within the nation. The telephone saved consultation time; it eventually became possible to reach colleagues in other cities to discuss a patient or arrange a professional meeting. Reliable and convenient interstate transportation, both on land and sea, enabled surgeons to participate in professional associations.

These associations were often organized in major cities at University-based teaching hospitals, and most medical specialties formed these associations. Surgeons followed suit. Keefe formed national ties, for example, through the surgical section of the AMA.⁸ By the second decade of the twentieth century, the American College of Surgeons created certification standards and galvanized the professional identity of surgeons: ethical, full time, and *separate from the general practitioner...* [Italics added]

Surgeons met to debate and develop such notions as “surgical judgment,” which for Keefe began with a surgeon’s character. “Is he so bold and daring,” Keefe asked, “that the life of his patient is sacrificed by his boldness? Or is he so timid and vacillating that his patient dies while he is making up his mind just what to do? Does he perform unnecessary operations?”

Keefe wasn’t timid to chide the profession: “Many of our specialists today have become so by the short route, say a six weeks post-graduate course in some specialty. Just consider for a moment the character of the work their patients receive.” Instead, Keefe recommended that a man come to his specialty “with a mature mind.” A surgeon should *study* his patient “as if he were a general practitioner and then employ all of the skill which he has acquired in his specialty.”

Attention to detail obsessed Keefe. Sometime around 1918, a patient’s post-operative course began to deteriorate. “I then recalled in detail the various steps of the operation, even to placing that last sponge in the abdominal cavity, and I realized that I had not removed it.” Once the sponge was recovered, the convalescence was non-remarkable.⁹

Keefe viewed the practice of surgery as a noble calling, which possessed its own heritage and heroes; he frequently made “pilgrimages” to the clinics of Europe and throughout North America, to learn from the great surgeons of the time. He revered Charles McBurney of New York, that “master of surgery,” and admired Osler, Halstead, Kelly and Welch from Johns Hopkins. He told the Providence Medical Society in 1901: “In New York,” they were employing a professional anaesthetizer.” What should Rhode Island not have one such physician?

“A Completely Modern Hospital”

After a quarter century of practice in community general hospitals, Keefe came to believe that “many wards, many physicians, and many nurses” were inefficient and impersonal, often impeding a patient’s recovery, especially a surgical case. Publicly, he argued: “We have excellent hospitals, but we need a surgical hospital. A large hospital is not always the best. A patient cannot be cared for so well in a large hospital as in a small one.”

The truth is that Keefe wanted complete administrative and clinical control, a laboratory for his own research, and a way to expand his practice and personal wealth. Often, well-to-do patients feared urban community hospitals and preferred treatment at home. “It was soon apparent that the poor often received a higher grade of medical treatment than persons who were financially better situated...”¹⁰ Then there was Keefe’s considerable ego: it seems he never doubted the validity of his ideas or the success of his venture.

Further, Keefe realized that the automobile made it possible to escape the noise and smoke of the city. Thus, he looked for a place “where there is quiet and beautiful country.” Why not on Blackstone Boulevard?

Completed in 1904, the boulevard was a landscaped, 200-foot-wide parkway separated by a median strip. At the time, it was far different from the residential area of today; only one house stood to the left of the hospital, with no other buildings for a half-mile or so to the rear of the building. A few newly planted hedge plants barely reached the top of the cement stairway leading to the main entrance.

Every aspect of construction received Keefe’s scrutiny, from the architect who understood his vision, to the engineers who designed the ventilation system, and the craftsmen who completed the interior. Keefe insisted that each possess sufficient humility to accept “advice” from physicians and other members of the hospital staff, “who are more continuously and intimately responsible for its success.”

In 1915, Keefe formerly opened his hospital and immediately received favorable reports from patients, whose rooms were painted with soft pastel colors; large windows provided a sunny view of the countryside. Each of the twenty patient

rooms had a bedside table, an adjustable light and a telephone. Individual call lights replaced the commonly used hospital bedside bell. Afternoon tea was served to patients and their guests, and food service was on real china: “Thus the convalescent has the advantage of meals not only well cooked, and of good variety, but has, within, what is probably of equal importance to him, meals daintily served.”¹¹

The jewel of the facility, however, was the single operating room, which Keefe located on the second floor. Considered one of the best designed and equipped in the nation at the time, a set of double doors separated the surgical area from a patient floor. A sterilizing room was off to one side and the doctor’s dressing room, which had scrub faucets worked by foot pressure, to the other side.

Charles McBurney once told Keefe that lighting of the operating room was more important than any other detail in the building, thus particular attention was paid to lighting. Natural light through a large plate glass window from the north illuminated the room during the daytime. At night, six powerful “artificial sources concentrating on the field of work” were used.

A rare photograph shows Keefe and an assistant in surgery, wearing heavy rubber gloves with bare arms above the elbow. A handkerchief covered their foreheads. The anesthetist wore no protective clothing, and his bow tie was visible under his lab coat.

The John W. Keefe Surgery was an ambitious undertaking for the time. By contemporary standards, it was rather primitive. Compared to a modern hospital, it seems cramped for space, and it’s difficult to imagine the daily routine, especially patient transport.

Nonetheless for Keefe personally, it was a testament to the growth of his practice, his wealth, and social standing within the state. For surgery in Rhode Island, it signified the successful integration into the state’s medical mainstream.

“Keefe of Rhode Island”

In 1925, Keefe addressed the New England Surgical Association on “Traditions of Medicine in Rhode Island.” He spoke of the “noble traditions” of Rhode Island’s physicians from the time of Roger Williams: “They were inspired by the same

motives, and actuated by the same high ideals of service, which are ours today."¹²

John W. Keefe's story is part of that same tradition. "...His name was familiar throughout the State of Rhode Island as a successful surgeon, and his services were sought constantly in difficult and unusually delicate operations, many of which were almost desperate efforts to save life."¹³

Keefe was bright, compassionate, benevolent, daring, and magnanimous to his mentors; in the operating room, he was as authoritarian as any military commander was. Yet, among his contemporaries throughout the state and nation, he was simply known as "Keefe of Rhode Island."

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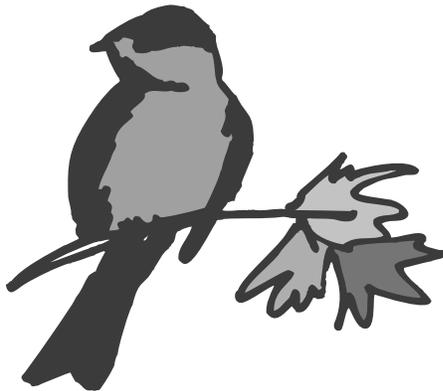
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Redesign of Chronic Care For Hepatitis C in a Rhode Island Homeless Population Based on Provider Compliance with Hepatitis C Guidelines

Lauren A. Beste MD, and Michael Stein, MD

Primary care for homeless patients is often complicated by medical and psychiatric comorbidities, substance abuse, and frequent interruptions in care. All aspects of chronic care for hepatitis C are affected by homelessness. The prevalence of hepatitis C in the homeless ranges from 20% to 40%.¹⁻³ Among injection drug users prevalence may reach 90%.^{4, 5}

Hepatitis C causes chronic liver disease in approximately 85% of infected individuals and life-threatening complications including cirrhosis, hepatocellular carcinoma, and liver failure in up to 20%.⁶ Although antiviral therapy is available, the treatment process is physically and psychologically taxing and demands strict abstinence from alcohol as well as stability of any co-morbid mental illness. Therefore, the *National Institutes of Health (NIH) Consensus Statement on Management of Hepatitis C* recommends that chronic care include not only antiviral treatment but also patient education, risk factor modification, and surveillance for complications.⁶ Despite a high prevalence of hepatitis C, primary care

provider adherence to chronic care guidelines is unknown in the general population and the homeless.

One approach to chronic disease management—the chronic care model—has been pioneered for asthma, diabetes, and congestive heart failure. This structured approach to health care system design can be applied to any chronic disease.⁷ The model focuses on assessment and quality improvement across six elements of health care systems: community resources, health care organization, self-management support, delivery system redesign, decision support, and clinical information systems. This project is the first to quantify rates of primary care provider compliance with recommended hepatitis C care in a homeless population, as well as the first to report the design of a chronic care model approach to primary care management of hepatitis C.

METHODS

Selection and Description of Participants

The project took place in a clinic providing primary medical and dental

care to approximately 1,300 homeless or transiently housed patients in Providence between August and November 2006. Medical care providers included one part-time family practice physician, one part-time nurse practitioner, and two full-time nurses. Patients were seen in the clinic regardless of ability to pay. No patient had private insurance; approximately 25% were enrolled in Medicare or Medicaid. The clinic had on-site access to case management, mental health services, and social work. Patients were referred to nearby hospitals for phlebotomy and imaging services.

At an intake appointment prior to the first clinic visit all patients were offered hepatitis C testing free of charge. An estimated 25% of patients declined to be tested or did not complete phlebotomy. Patients were identified for inclusion in the registry by systematic chart review. Patients were entered into the registry based on a documented positive hepatitis C antibody and/or detectable hepatitis C viral load using polymerase chain reaction. Individuals were excluded from the registry if they had not sought care at the clinic in more than 365 days, were younger than 18 years old, or were positive for **human immunodeficiency virus (HIV)**. Co-morbid mental and physical illnesses were abstracted from charts based on diagnoses made by a physician or mental health provider. Procedures for human subjects protections were followed in compliance with the participating health care facility.

Chronic Care Model Design

A computer-based hepatitis C registry was created using the **Patient Electronic Care System (PECS)** software, available through the Health Disparities Collaborative network.⁸ Demographic and medical data were abstracted from charts and entered into the registry. The hepatitis C registry was

Chronic Care Model Principle	Implementation Strategy
Clinical Information System	Computer-based disease registry created
Delivery System Redesign	Registry used to generate data sheet with clinical reminders at each visit. Patients given maps and directions to imaging and phlebotomy locations.
Decision Support	Clinical practice guidelines prepared using <i>NIH Consensus Statement on Management of Hepatitis C</i> and other published sources. Referral links established with subspecialists.
Organization of Healthcare	In-service training for staff focused on standard of care for hepatitis C.
Self Management	Goals established collaboratively with patients. Patients provided with community resource referrals (e.g., needle-exchange sites, drug and alcohol treatment).
Community	Patients encouraged to participate in community-based support groups and education.

Figure 1. Implementation Strategies for the Chronic Care Model in Hepatitis C

Age (years)	Mean: 43.3 SD: 9.22 Range: 20-63
Sex [n (%)]	Male: 82 (68%) Female: 39 (32%)
Race [n (%)]	White: 75 (63%) Latino: 17 (14%) Black: 10 (8%) Other: 6 (5%) Unreported: 11 (10%)
Living situation [n (%)]	Transitional/ Shelter: 77 (64%) Other: 18 (15%) Street: 8 (6%) Unknown: 11 (9%) Not homeless ¹ : 7 (6%)
Axis I psychiatric disorder excluding substance abuse [n (%)] ²	41 (34%)
Alcohol abuse/ dependence	Current: 19 (16%) Abstinent >12 months: 64 (53%) Abstinent >6 months: 45 (37%) Never: 23 (19%) Unreported: 14 (12%)
Intravenous drug use [n(%)]	Active: 11 (9%) Abstinent >12 months: 74 (61%) Never: 20 (17%) Unreported: 16 (13%)
Illicit drug use non-intravenous [n(%)]	Active: 16 (13%) Abstinent >12 months: 81 (69%) Never: 5 (4%) Unreported: 17 (14%)
Chronic hepatitis B [n(%)]	11 (9%)
<p>1. Includes patients who recently found permanent housing and were awaiting establishment of a new primary care provider relationship in the community</p> <p>2. major depression, anxiety disorder, bipolar disorder, schizophrenia, or eating disorder as diagnosed by a physician or mental health provider</p>	

Table 1. Characteristics of hepatitis C patients (n=121)

designed to generate reminders for lab tests, imaging, referrals, and patient education when appropriate. Clinic staff updated the registry with new information at subsequent visits. After initial compliance data were collected, clinic staff suggested strategies for implementing the chronic care model. Each of the six components of the chronic care model was addressed and tailored to the needs of the clinic (Figure 1).

RESULTS

One hundred and twenty one patients with a documented positive hepatitis C antibody were identified. (Table 1) Patients were racially diverse and predominantly male. The majority were using the emergency shelter system. Nearly three quarters were active or former intravenous drug users, with 10% actively using intravenous drugs. Over a third had major mental illness. Nineteen percent met criteria for alcohol dependence, and 34% had other axis I psychiatric disorders.

Clinic practices demonstrated a wide range of adherence to NIH guidelines for hepatitis C chronic care. (Table 2) Over 80% of patients had liver function tested in the past year. However, rates for liver ultrasound, testing for hepatitis A and B immunity, and HIV testing were well below 50%.

DISCUSSION

In terms of age, living situation, and co-morbid disease status the sample represents a typical urban homeless cohort.¹ Compared to reports of non-homeless hepatitis C populations, the clinic serves a higher proportion of patients with major mental illness, low income, and substance abuse.⁹⁻¹¹ Areas in need of improvement included hepatitis A and B immunity testing and vaccination, annual liver ultrasounds, and HIV testing.

Initial data describing provider compliance in the study population were used to generate a chronic care model approach to hepatitis C care. Strengths of the project include the development of a computerized disease registry, a collaborative program of interventions tailored to the needs of the clinic, and establishment of relationships with community resources and specialists. Weaknesses include reliance on provider documentation of care, which probably led to underestimation of compliance with hepatitis C management guidelines. Services provided at outside institutions were difficult to assess, again leading to an underestimate of compliance. Approximately one fourth of clinic patients did not complete testing for hepatitis C, possibly introducing a source of bias in the sample. Finally, our findings may not be generalizable to homeless adults who cannot engage the medical system due severe mental illness or substance abuse.

Even among patients who do not qualify for antiviral therapy, hepatitis C treatment requires frequent monitoring for complications, patient education, and involvement of specialists such as mental health providers, infectious disease experts, and hepatologists. Barriers to care—mental illness, transportation difficulties, and delays in testing and referrals—are common to homeless patients with hepatitis C.⁹ A systematic approach to disease management based on the chronic care model can facilitate care for

Liver function test in previous 365 days	98 (81%)
Liver ultrasound in previous 365 days	41 (39%) Cirrhosis: 12 (9.9%) No cirrhosis: 43 (35.5%)
Alpha-fetoprotein in previous 365 days	54 (45%)
Complete hepatitis panel ever checked	48 (40%) positive Hep A surface antibody: 2 (1.6%) positive Hep B surface antibody: 9 (7.4%) positive Hep B core antibody: 13 (10.7%)
HCV viral load ever checked	78 (65%)
HIV test ever checked	33 (27%)

Table 2. Adherence to recommendations for primary care management of Hepatitis C (n [%])

homeless patients with hepatitis C. This project can serve as a template for other clinics desiring to assess and improve quality of care for chronic hepatitis C. In addition to being the first study to report provider compliance with chronic care guidelines for hepatitis C, this project demonstrates that implementing the chronic care model is possible in a homeless population. Future studies will be needed to demonstrate the effects of the chronic care approach on hepatitis C outcomes.

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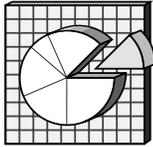
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Smoking and Tooth Loss In Rhode Island Adults, 2004

Jana Earl Hesser, PhD, and Yongwen Jiang, PhD

Oral health is an integral component of overall health. Loss of most or all natural teeth can lead to psychological, social and physical impairment; loss of teeth can limit speech, chewing ability and taste, and affect nutritional status.¹ Periodontal disease and decay are major causes of tooth loss.² Periodontal disease is manifested by the loss of connective tissue and bone that support the teeth, placing a person at risk of eventual tooth loss unless treatment occurs. Ongoing research aims to identify markers, including modifiable risk factors, of persons susceptible to periodontitis.³

Multiple studies accumulated from the international literature over 20 years provide convincing evidence that smoking is the main modifiable risk factor for poor periodontal health and tooth loss.² Estimates from these studies indicate that the risk of destructive periodontal disease is 5-20 times higher for a smoker compared with a never-smoker, and that periodontal treatment outcomes for smokers are poor compared with non-smokers.²

This study assesses the relationship between smoking and tooth loss in Rhode Island adults, and identifies other characteristics and modifiable risks associated with tooth loss.

METHODS

Rhode Island's 2004 Behavioral Risk Factor Surveillance System (BRFSS) data were used for this analysis. The BRFSS is a state-based telephone survey of randomly selected non-institutionalized adults (ages 18 and older). The BRFSS monitors certain health conditions, access to health care, and behavioral risks that contribute to the leading causes of disease and death among adults in the United States. It is administered in all 50 states and 4 US territories with methodological specifications provided by the Centers for Disease Control and Prevention (CDC).⁴ From January through December 2004, the Rhode Island BRFSS conducted 3,999 interviews.

We examined tooth loss in relation to nine variables associated with oral health, including tobacco use. To assess tooth loss, the BRFSS asks: "How many of your permanent teeth have been removed because of tooth decay or gum disease? Do not include teeth lost for other reasons, such as injury or orthodontics." Responses were grouped into four categories: no permanent teeth removed due to tooth decay or gum disease, one to five permanent teeth removed, six or more but not all teeth re-

moved, and all teeth removed.

Tobacco use was defined as current, former, or never smoker, a current smoker being someone who had smoked at least 100 cigarettes in his/her lifetime and is currently smoking every day or some days. Definitions for the other variables can be found at CDC's BRFSS website.⁴

We calculated prevalence estimates and chi square statistics to identify significant associations between tooth loss categories and each of the other variables. Using multinomial logistic regression, which simultaneously controls for all variables in the model, we calculated **adjusted odds ratios (AORs)** to assess the strength of relationship between extent of tooth loss, tobacco use and each of the other variables. P values <0.05 were considered statistically significant.

RESULTS

Table 1 displays prevalence estimates for the extent of tooth loss for each variable, unadjusted for the influence of other demographic characteristics and risk factors. Overall, 56% of RI adults had not lost any teeth to decay or gum disease, 28% had lost 5 or

Table 1.
Tooth loss* for selected demographic characteristics and risk factors, ages 18 and older, Rhode Island, 2004

Demographic characteristics & risk factors		No permanent teeth lost	1 - 5 teeth lost	6+ but not all teeth lost	All teeth lost
All Respondents		56.3	28.4	10.8	4.6
Age Group	18-44 years	76.1	20.9	2.6	0.3
	45-64 years	42.3	38.1	16.2	3.5
	65+ years	23.1	33.8	24.7	18.4
Income	<\$25K	45.4	27.3	17.4	9.9
	\$25K- 49,999	51.1	31.1	13.3	4.6
	\$50K+	66.2	27.0	5.9	1.0
Education	No college	42.3	33.9	15.7	8.1
	Some college	59.5	26.1	10.9	3.5
	College graduate	69.6	23.7	5.2	1.4
Smoker	Never smoker	65.1	25.3	7.0	2.7
	Former smoker	45.0	32.4	15.0	7.6
	Current smoker	50.6	30.4	13.9	5.0
Physical Activity	Physical activity	60.7	27.6	8.6	3.1
	No physical activity	42.7	30.8	17.5	9.0
Diabetes	No diabetes	58.2	28.2	9.6	3.9
	Have diabetes	30.0	30.5	26.1	13.3
Obese	Not obese	58.5	26.7	10.2	4.5
	Obese	48.3	34.0	13.1	4.5
Disability	No disability	60.4	27.8	8.5	3.4
	Have disability	34.7	33.3	22.5	9.5
Dental Coverage	Have dental coverage	59.4	28.7	9.3	2.6
	No dental coverage	49.1	28.3	14.4	8.3
Number of Respondents (unweighted)		1,948	1,234	505	237

*Data reported are weighted percents.

Table 2.
Demographic characteristics and risk factors regressed on oral health indicators,*
ages 18 and older, Rhode Island, 2004. [Significant results only.]

Demographic characteristics & risk factors	1 - 5 teeth lost	6+ but not all teeth lost	All teeth lost
Ages 45-64 years	3.5 ^{***}	12.6 ^{***}	
Ages 65+ years	4.7 ^{***}	23.3 ^{***}	119.1 ^{***}
Income <\$25K			3.9 ^{**}
Education of HS or less	2.1 ^{***}	3.5 ^{***}	2.6 ^{**}
Current smoker	1.7 [*]	3.5 ^{***}	4.7 ^{***}
No leisure time activity		1.5 [*]	1.9 [*]
Have diabetes		2.3 ^{**}	2.3 [*]
Obese (>=30)	1.4 [*]		
Have disability	1.3 [*]	1.8 ^{**}	

Level of statistical significance: ***p<0.001; **p<0.01; *p<0.05.

*Data are reported as adjusted odds ratios (AORs) by all other variables in the regression model.

fewer permanent teeth, 11% had lost 6 or more but not all their teeth, and 5% were edentulous. Compared to those who had never lost teeth to decay or disease, respondents who had lost one or more teeth were more likely to be 45 or older, to be smokers or former smokers, to not engage in leisure time physical activity, to have diabetes, to be obese, or to have a disability. They were also more likely to be in lower income categories, to have only a high school education or less, and to lack dental coverage.

The rates of any tooth loss for current smokers (49%) or former smokers (55%) were both significantly higher than the rate for non-smokers (35%). Likewise, the rates of losing six or more teeth and of being edentulous were both significantly higher for current smokers (14% and 5% respectively) and former smokers (15% and 8%) than for non-smokers (7% and 3%).

Table 2 displays AORs from the multinomial logistic regression, in which relationships have been adjusted for the influence of all other variables. It was not surprising that getting older (e.g. ages 45 and older) is the strongest predictor of tooth loss. The odds that someone over age 65 will have lost all their teeth is 119 times those for persons ages 18-44.

Other than older age, current smokers had the highest odds of tooth loss compared with never-smokers, after controlling for all other variables. The odds of losing 1 to 5 teeth are 1.7 times greater for smokers than for never-smokers, the odds of losing 6 or more teeth 3.5 times, and the odds of total tooth loss, 4.7 times those of never smokers.

Other characteristics and risk factors that independently increased the odds of tooth loss were having an annual income under \$25,000, lacking any college education, having diabetes, not participating in any leisure-time physical activity, being disabled, and being obese.

DISCUSSION

Within the limitations of survey data in general and the BRFSS in particular, these findings demonstrate that current smokers have greater risk of moderate and severe tooth loss than never smokers, after controlling for possible confounders. These results have important public health program and

policy implications. Preventing smoking, or facilitating smoking cessation, can improve oral health and reduce the risk of tooth loss. Timely tobacco cessation can improve outcomes for costly periodontal treatments. Promoting linkages between oral health professionals and tobacco cessation programs could enhance interventions in both areas. Since dental providers are in an ideal position to advise tobacco users to quit smoking, the Rhode Island Department of Health's Oral Health and Tobacco Control Programs have collaborated to increase the number of oral health providers who identify tobacco-related oral conditions and tobacco use during oral examinations, advise patients to quit, and refer them to quitting services.

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A Primer On Hospice For the Internist

Christopher A. Jones, MD

Mrs. H is an 87-year-old woman with New York Heart Association Class IV heart failure, hypertension, and dyslipidemia. She can transfer from bed to chair, but reports being dyspneic at rest. Mrs. H is being treated with maximally-dosed captopril, carvedilol, diuretics, and vasodilators. Her daughter asks you how long her mother has left to live and if hospice care would be appropriate.

During the twentieth century, people in the United States and Western Europe have enjoyed the spoils of healthcare's advancement, namely a marked decrease in mortality from infectious diseases and death from accidents and trauma. With the accompanying increase in life-expectancy, cancer, dementia, and chronic obstructive pulmonary disease are joining heart disease on the list of causes of death. Since many people are now dying with and from chronic diseases, often with a roughly predictable decline over the course of months and years, we have the unparalleled opportunity and responsibility to improve care as patients near the end of life. Palliative care and hospice have emerged in the last few decades as wonderfully valuable partners in this care.

The concept of hospice care, which etymologically comes from the same Latin root as hospitality, was conceived of by Dame Cicely Saunders in the 1960s, and was truly born with the opening of Saint Christopher's Hospice in London in 1967. The hospice movement was nurtured in the United States in the late 1960s at Yale University, and America's first hospice, The Connecticut Hospice, opened in New Haven in 1974. In 1979, the Health Care Financing Administration endorsed demonstration programs throughout the country to determine the role for and scope of hospice care, and in 1982 the Medicare Hospice Benefit was created. This benefit, which has had many changes since then, paid for 84% of hospice patients in 2006.¹

The number of patients served by hospice care has increased by 162% in the last 10 years, standing at 1.3 million patients in 2006, the most recent year for which there are complete data. Hospice organizations were involved in caring for 36% of those who died nationwide. A major goal of the hospice movement is to provide care and allow a comfortable, dignified death in whatever setting a patient calls home, be that a private residence, assisted living, or nursing home. To that end, 74% of people who died with hospice care did so in their homes (including those who died in nursing homes or assisted living facilities), with 17% dying at an inpatient hospice center and 9% in an acute care hospital.²

A patient is eligible for the Medicare Hospice Benefit if she "is eligible for Medicare Part A, is certified as having a ter-

minal disease with a prognosis of six months or less if the illness runs its normal course, receives care from a Medicare-approved hospice, and the individual signs a statement indicating that she elects the hospice benefit and waives all rights to Medicare payments for services for the terminal illness and related conditions. Medicare will continue to pay for covered benefits that are not related to the terminal illness." Medicare will pay for care related to the terminal condition, including physician services; nursing care; medical equipment and supplies; drugs for symptom control or pain relief; home health aide and homemaker services; physical, occupational, and speech therapies; social worker services; dietary, spiritual, and grief counseling; short-term and respite care and any covered medically necessary services identified by the interdisciplinary team. Medicare will not pay for curative therapies, care from a provider not set up by the hospice, and care from another provider that is the same care that the individual must receive from her hospice.³

A major component of eligibility, and one of the more nebulous parts of moving a patient toward hospice care, involves predicting the patient's life expectancy. Historically, physicians do a poor job predicting time of death, especially in non-cancer cases. Generally, predictions are overly optimistic about prognosis. In a study of 343 physicians referring 468 patients for hospice care, physicians predicted the time of death of their patient within 33% of actual survival only 20% of the time. Sixty-three percent of predictions were too optimistic; 17% were too pessimistic. The average overestimation was by a factor of five.⁴ When paired with hospice length-of-service data showing an average enrollment of 59.8 days and a median enrollment of just 20.6 days,² it seems likely that we are underutilizing hospice care by referring patients too late.

The Medicare Hospice Benefit can be accessed by a patient with a "terminal disease with a prognosis of six months or less if the illness runs its normal course." Though hospice care is often considered for cancer patients, seven of the top ten diagnostic codes for hospice care in 2005 were for non-malignancies, and more than half of hospice patients were non-cancer patients. Lung cancer leads the list for the eighth consecutive year, but congestive heart failure, chronic obstructive pulmonary disease, Alzheimer's disease, stroke, and adult failure to thrive rank above the only other two cancers, prostate and breast, in the top ten diagnoses referred for hospice care.⁵ The National Hospice Organization's guidelines aid clinicians in determining when patients with chronic diseases are likely to have a life expectancy of fewer than six months,⁶ though these have been shown to be less valuable in acutely ill, hospitalized patients.⁷

Web Resources:

International Association for Hospice and Palliative Care:
<http://www.hospicecare.com>

CMS Hospice Center:
<http://www.cms.hhs.gov/center/hospice.asp>

Home & Hospice of RI – with physician link with useful tables on functional status and disease specific referral guidelines:
<http://www.hhcri.net/index.html>

Either the medical director of the hospice or the physician member of the hospice interdisciplinary team and the individual's primary attending physician may certify a patient for hospice care. Initial certification lasts for 90 days and may be renewed for an additional 90 days. If the patient lives beyond the initial six months, she may be recertified for an unlimited number of 60-day periods, as long as she still meets the six-month prognosis.³ Of the 1.3 million patients cared for by hospice programs in 2006, 220,000 were discharged alive.²

An important caveat in electing the Medicare Hospice Benefit is its flexibility and reversibility. A patient or representative can revoke the election of hospice at any time, completely resuming all previously waived Medicare services. Often this is done to seek curative treatment not permitted while on the hospice benefit. The choice of hospice agency may also be changed once during each election period.³

Election of the Medicare Hospice Benefit does not eliminate the role for the patient's primary physician. In fact, most hospice organizations will not accept patients without the full participation of the patient's **primary care physician (PCP)**. All recommendations of the hospice team are implemented only with PCP approval. The hospice team acts as a "one-stop-shopping" organization, fielding the patients' and families' phone calls, dispatching hospice nurses around the clock for evaluation and treatment, and offering support during and after the dying process. As an additional benefit, when the PCP requires assistance with management, the medical director of the hospice, usually board-certified in Palliative Medicine, is available for consultation.

Hospice care is an important tool at the end of life. The Medicare Hospice Benefit has made quality end-of-life care available to many patients with chronic diseases, and the number of patients being cared for by hospice programs has been climbing. Remembering that physicians err toward overestimating a patient's remaining time, it would be beneficial for clinicians to lower their personal thresholds for referral to hospice care, and to recall that patients with chronic diseases may benefit from hospice care. Electing hospice care will not eliminate the PCP's role, but will add expert help in symptom management to improve care at the end of life.

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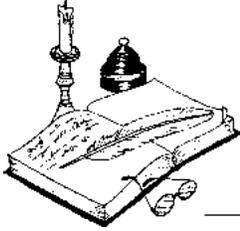
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Physician's Lexicon

The Quantitative Prefixes of Medical Vocabulary

Medical vocabulary is provided with a rich assortment of Latin and Greek prefixes allegedly endowing some of its words with an understandable sense of quantity. But these often imprecise prefixes, instead, have created confusion rather than precision and exactitude.

Consider the Latin prefix, *demi-*, meaning one-half. This has produced such words as demilunar [crescent-shaped], demimonde [a term favored by French novelists to define women "of the half-world", one step above street-walking] and demigods [mortals elevated to half-godlike status]. The prefix is derived from the contraction of the Latin, *-medius* [middle] and *di-* [half]. The Greek equivalent is *hemi-*, as in words such as hemiplegia, hemisphere and hemicrania [which, over the centuries has been corrupted to the word, micrania and finally, migraine.]

The Latin, *semi-*, means one-half and appears in words such as semicolon, but not in seminal [from the Latin meaning seed] or Semite [from the name, Shem, Noah's son.]

The Latin, *di-*, means apart, half, double or twice and appears in words such as dicephalous, dicumerol and dicrotic. The Latin prefix, *dis-*, however, means reversal, separation or undoing, as in disarticulate, disappoint, disease and disaster [literally, born under an ill-fated star]. The word to cut into small pieces, *dis-*sect, is often mispronounced as though the word were *di-*sect.

The Latin, *bi-*, meaning twice or double, is the prefix which causes the most confusion. There is no ambiguity with words such as bisexual, bicuspid or bilateral; but then there is biannual [twice a year] but, contrariwise, bimonthly [every other month] and bicentennial [once ev-

ery two centuries] and finally, semimonthly [twice a month.]

To add to the confusion, there is the Greek prefix, *dia-*, meaning through or utterly as in diabetes, diagnosis, diameter, diaphanous, dialysis, diastole [not, *di-*astole] and diadochokinesis. So we have the word, digamy, meaning a second, sequential marriage, but bigamy, meaning married to two mates simultaneously.

There is the Latin prefix, *quasi-*, [derived from the contraction of *quam* and *si*] meaning as if or resembling, as in words such as quasilaterate or quasijudicial.

And finally, there is a word, beloved of music teachers, to describe a sixty-fourth of a musical note, hemisemidemi-quaver [or is it demihemisemi-quaver ?]

— 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			
	April 2007	12 Months Ending with April 2007		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	220	2,748	256.9	3,629.0
Malignant Neoplasms	166	2,272	212.4	5,882.5
Cerebrovascular Diseases	39	380	35.5	537.0
Injuries (Accidents/Suicide/Homicide)	34	550	51.4	8,940.5
COPD	29	422	39.4	407.5

Vital Events	Reporting Period		
	October 2007	12 Months Ending with October 2007	
	Number	Number	Rates
Live Births	1,114	13,499	12.6*
Deaths	828	9,919	9.3*
Infant Deaths	(5)	(103)	7.6#
Neonatal Deaths	(4)	(71)	5.3#
Marriages	739	6,872	6.4*
Divorces	313	3,137	2.9*
Induced Terminations	481	4,839	358.5#
Spontaneous Fetal Deaths	77	1,020	75.6#
Under 20 weeks gestation	(71)	(946)	70.1#
20+ weeks gestation	(6)	(74)	5.5#

(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 1,067,610

(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

THE RHODE ISLAND MEDICAL JOURNAL

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NINETY YEARS AGO, APRIL 1918

John B. McKenna, MD, in "Early Signs in Diseases of the Upper Abdomen," cautioned against "snap diagnoses." "It is, perhaps, not too bold to assert that most of us, at some time or other, have been guilty of a 'snap diagnosis.' With a preconceived idea of the cause, the disposition is strong to make the patient's story fit the diagnosis. In the desire to get a classical symptom, we may cause the patient either to forget or to neglect to give us facts, seemingly trivial, but which might be most valuable."

Arthur Hollingworth, MD, in "Perforating Gastric and Duodenal Ulcers," promised readers that he would be writing from personal experience: "No reference will be made to the surgical literature on the subject and no statistics with which to bore you will be enumerated." He discussed a 25 year-old bakery wagon-driver. Stepping down from the seat, the driver "felt a sudden agonizing pain in the pit of the stomach. He fell in collapse and was carried to a nearby house whence he was speedily removed to the hospital." Dr. Hollingworth saw the patient one hour after the attack. The diagnosis was acute perforated gastric ulcer, confirmed by an operation.

TRICHIASIS [Trick-eye-a-sis]

Have you ever had trichiasis?
It feels as if a fly-a-sis
Is living in your eye-a-sis
And it leaves you mystify-a-sis.

The doctor, she will spy-a-sis
Way down low and way up high-a-sis
And she'll think and say "My, my-a-sis!",
As she checks your cornee-eye-a-sis.

Then she'll state, "It's not a sty-a-sis.
What you have is called 'trichiasis.'"
You'll begin to gasp and cry-a-sis
And wail "Will I die-a-sis?"

Things look blurry and awry-a-sis
until the lash goes bye-a-sis.
Now.....
I cannot tell a lie-a-sis.
I have often had trichiasis.

— HELEN M. D'ORDINE, MED,
*Helen M.D'Ordine, a retired kindergarden teacher,
lives in North Providence.*

William H. Jordan, MD, in "Epidemic Cerebrospinal Meningitis," discussed the etiology, transmission, symptoms and prognosis. Before 1906-07, the mortality ranged from 70 to 100%. With the introduction of anti-meningococcic serum, mortality dropped to 25-30%.

A miscellaneous note on the Volunteer Medical Service Corps described this new service, geared for physicians not eligible for the Medical Officers' Reserve Corps; i.e., physicians older than age 55, and/or with slight physical infirmities.

FIFTY YEARS AGO, APRIL 1958

Francis B. Sargent, MD, and Edwin B. Gammell, MD, contributed "Post-tonsillectomy and Adenectomy Deafness in Children Caused by Nonsuppurative Otitis Media." Suppurative otitis media was "nearly eradicated by antibiotics." But after the T and A operation, "all too often in from 6 months to 2 years...deafness begins." One theory held that "adenoidal removal was not sufficiently thorough;" the other theory held that it was "too thorough." The authors reported on a study that "affords little support for either point of view."

John E. Farrell, MD, in "The Crippled Child and Meeting Street School," traced the School from 1946, when the RI Society for Crippled Children and Adults was established, to 1947, when the Providence School Department loaned the Society the building, to the present, when Dr. Eric Denhoff headed the medical staff.

Alfred C. Pascale, MA, in "Future Concepts of The Teaching of Medical Terminology," discussed a study from his dissertation for a DEd degree from Boston University: "To determine the most commonly detailed medical terms in hospital and medical records for the improvement of the educational preparation of medical assistants."

TWENTY-FIVE YEARS AGO, APRIL 1983

Dianne N. Abuelo, MD, Gail Barsel-Bowers, MS, Siegfried M. Pueschel, MD, Amy M. Goldstein, MS, and Howard A. Hall, MD, in "Utilization and Benefits of Prenatal Diagnosis in Rhode Island," focused on the new techniques of amniocentesis, ultrasound and fetoscopy. In 1978 8.3% of pregnant women older than age 35 had amniocentesis; in 1981, 41.6% had amniocentesis.

Sanford C. Spraragen, MD, and Ben C. Claunch, MD, in "Nuclear Medicine – Role in Evaluating Acute Abdominal Trauma: A Case Report," stressed that multiple imaging procedures could be "covered within a relatively brief period."

Srecko Pogacar, MD, Pasquale F. Finelli, MD, and Ho Yong Lee, MD, discussed "Locked-in Syndrome Caused by a Metastasis," a rare condition "frequently misdiagnosed as coma."

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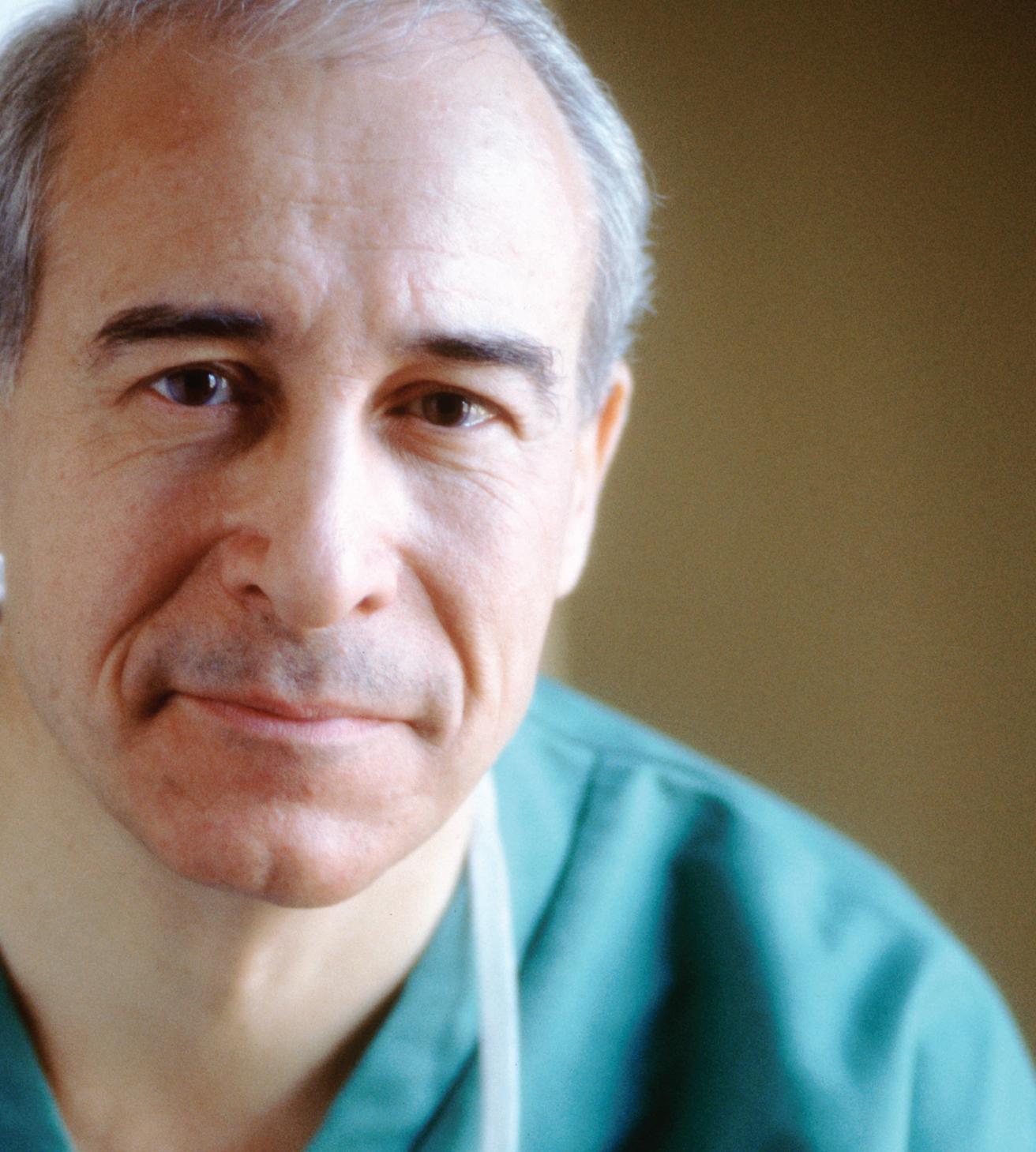
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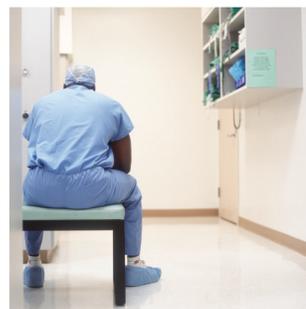
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