

Medicine Health RHODE ISLAND

VOL. 88 No. 8 AUGUST 2005




SPECIAL ISSUE: MEDICAL EDUCATION

What's in a Name???

GOOD - authentic, honest, just, kind, pleasant, skillful, valid

NEIGHBOR - friend, near

ALLIANCE - affiliation, association, marriage, relationship

CORPORATION - company, business establishment

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COMMENTARIES

NPH ON TV

A few months ago, I was suddenly inundated by patients asking if I hadn't misdiagnosed them with **Parkinson's disease (PD)** when they really had **normal pressure hydrocephalus (NPH)**. I had, by chance, been watching TV and seen a TV magazine show with a segment on NPH. I presumed that they, or their family, had also seen it. When I saw the TV show, I figured that I was in for trouble; but how many people would have seen it?

Alas, the TV show was only the foot in the door for an avalanche of TV advertisements for this disorder. In retrospect, I wonder whether the TV show wasn't actually part of the advertising campaign, like product placement in the movies, or the current administration's paying journalists under the table to praise administration programs in their usual (wink, wink) fair and balanced manner.

The NPH ads are paid for by the shunt manufacturer, of course. However, unlike the ads for medications, which are nefarious enough, these ads are for a disorder that affects about one person per million per year; that is, one or two cases/year in Rhode Island, about the same incidence as **Creutzfeldt-Jacob disease (CJD)**. Perhaps if there were a treatment for CJD, we'd see ads questioning the diagnosis of Alzheimer's disease. Worse still is the fact that the ad asks the patient to question the diagnosis a doctor has given. "Maybe you don't have Parkinson's Disease. Maybe you've been misdiagnosed and have been treated incorrectly for several years. Maybe you can be cured!"

Imagine telling cancer patients via TV ads that maybe they didn't have cancer and that their biopsies should be re-analyzed with the "cancer-detector-magnetic spectrometer," the new space age diagnostic device, too new and revolutionary to be approved yet. "Many patients have stopped their chemotherapy and gotten their lives back in order as a result. Ask your doctor to check on this new and exciting technique."

It is common to grasp at straws

when drowning. No one wants to have Parkinson's disease, or any other impairing malady, but how often do we see advertisements on television telling patients to ask for MRIs or CAT scans to be "sure" they don't have NPH? I have no idea how many needless MRIs have been performed in the last few months because of patient requests. More worrisome still are the number of shunts inserted into elderly brains to treat PD, Alzheimer's disease or the host of other disorders often mistaken for NPH.

It would be very interesting to track the change in the number of shunts inserted since the TV ads began. It would be more interesting to check the outcomes in these patients.

I am very much in support of empowering the patient. I explain to my patients how I reached a diagnosis. I try to explain to every PD patient that there is no test to diagnose PD so that imaging studies are done only to find something else and that most of the entities that mimic PD can't be diagnosed on imaging either. I tell patients who have clear cut, "classic" idiopathic PD, that an MRI is not only not useful but possibly counter-productive, since, if the MRI showed an abnormality it would be a new problem, unrelated to the PD. I rarely want to find out this sort of thing. It's almost the same as ordering a brain MRI on someone without neurological problems.

When patients come to me asking for an MRI, because an ad on TV suggested it, I am upset. First, there is the obvious presumption that I overlooked this possibility. In some ways this is amusing. I've published papers and commentaries on NPH as well as given talks on this subject. More impressive is the fact that I've even correctly diagnosed the condition (that is, patients have experienced sustained improvement after shunting).

I actually don't mind patients asking me if they might have NPH. "Dr. Friedman, I saw this show/ad on TV and wonder if I really have NPH and not PD. What do you think?" I

then tell them what I think, that the dirtbags who run the shunt company, the increasingly politicized FDA and the executives who run television, are willing to create false hope if it creates a market. More useless MRIs, or harmful surgery? No problem as long as it's paid for, is their attitude. The patient suffers twice: first when they wonder if they've been mistreated for 10 years by their clueless doctor; then they're disappointed to learn that they haven't been misdiagnosed, that they really do have PD. And some are disappointed when they get operated on and don't improve or have adverse effects.

There is no winner in this game. I tell my patients that they don't have NPH and if they want an MRI to ask their PCP because I think it's dangerous and, accordingly, won't order it. Often it's their family who pushed them to confront me and they're embarrassed to face them with my response.

Unfortunately, we can't punish the shunt company because it has a monopoly on that type of shunt.

We doctors need to take back control of medicines and devices. The marketplace should not be the arbiter of medical practice.

JOSEPH H. FRIEDMAN, MD

MIGHT DEATH SOMETIMES TAKE A HOLIDAY?

Death comes, say the medical textbooks, when certain biologic thresholds are exceeded and critical organs cease to function. The timing of death is allegedly reduced to little more than the resolution of a complex biophysical equation, as though the body were solely a piece of crafted machinery. But may the dying human have a conscious hand in modifying this equation, in changing the time when the breath of life ceases?

Admittedly, this has a suicidal ring to it. So let us reword the question: can a terminally ill person consciously delay his death beyond a particular date? To cling to life no matter how tenuously until, say, a grandchild's impending graduation from college? Or to observe a specially revered day such as one's own birthday or wedding anniversary, or even an esteemed religious or secular occasion.

Consider Thomas Jefferson, the author of the Declaration of Independence [ratified on July 4, 1776.] Certainly there were other meaningful happenings in Jefferson's life: he had been governor of Virginia, negotiated the peace treaty with England, drafted Virginia's constitution, served as minister to both England and France, was Secretary of State, later Vice President and then this nation's third President. But Jefferson died on the afternoon of July 4, 1826, exactly 50 years after his notable Declaration had appeared. John Adams, this nation's second President, also died that same afternoon, precisely 50 years after the appearance of the Declaration. And five years later, on July 4, 1831, James Monroe, the fifth president, died. Thus, three of the first five presidents died on July Fourth, a profoundly meaningful day to them. A bookmaker, more interested in odds than sentimentality, would tell you that the likelihood of three men dying on a particularly selected date is extremely remote.

None of the other dead presidents have died on July 4th, although Calvin Coolidge was born on this date.

Not everyone has the rare opportunity of composing a document as transcendent as the Declaration. Yet even in the lives of the most anonymous amongst us there are still dates of enduring relevance such as birthdays, wedding anniversaries and, perhaps, important religious holidays. Biostatisticians have therefore wondered whether terminally ill individuals might somehow extend their lives for a handful of days so that they could then reach a specific day uniquely memorable to them.

A number of formal studies have been conducted to determine whether any temporal relationship exists between an individual's month of birth and month of death. One statistician, analyzing 261,226 deaths in older residents of England and Wales, concluded that death was more frequent in the months following one's birthday while less frequent in the months preceding one's birthday. Interestingly enough this temporal relationship – purporting to show that the timing of death is both biologically and psychologically determined – was more evident in the married than the unmarried. Yet another study of deaths in the United States confirmed this curious relationship between birth month and death month, but declared that such a statistical association

prevailed only with dying adults older than 20.

In a 1969 study of "famous" Americans ["fame" being determined by inclusion in Who's Who listings and American history texts] also found that death rates were appreciably decreased in the month immediately preceding the birth month, and significantly elevated in the following month, despite the fact that many of these deaths, due to such factors as assassination, were clearly beyond the control of the person. A parallel analysis of "non-famous" showed the same temporal relationship, but not so strikingly. [No analysis of "infamous" Americans has yet been undertaken.] A kindred Canadian study, using death certificates, replicated these findings. And a recent study, using Rhode Island death certificates, similarly confirmed the existence of a limited reprieve from death, a "death-dip." Another study using death certificates solely from some of the Massachusetts state hospitals for chronic disease [representing indigent patients largely without families] showed no relationship between date of birth and date of death.

An eminent sociologist, E. Durkheim, declared in 1897 that individuals are morally held to participate in its sorrows and joys of their society. Durkheim further suggested that such an individual must be involved in his society's rites "because a society is expressed and affirmed through its ceremonies."

Sociologists in New York demonstrated that there was a consistent dip in adult death rates, a brief postponement of death, immediately preceding presidential elections. This also held true for the Jewish population, before Yom Kippur, the annual Day of Atonement. [Sigmund Freud had died on Yom Kippur.] Prompted by these studies demonstrating a postponement of death of Jews around the Jewish High Holy Days, West Virginia scientists initiated a parallel study using Appalachian death certificates to determine whether any relationship existed between time of death and the Christian holidays of Christmas and Easter. They showed a significant peak in death in the two weeks following Christmas [particularly in those from small towns] but no such time-oriented relationship with Easter.

What do all of these studies mean? Perhaps little beyond a few random coincidences. After all, many people die on the Fourth of July blissfully unaware of this date's historic significance. But alternatively these studies do suggest that we may have some slight leeway in the timing of our deaths; and if our terminal interval approaches an important day, our birthday perhaps, we might then exert ourselves to survive through that auspicious day – especially if we consider ourselves to be important enough to celebrate that date.

Ecclesiastes informs us that "To everything there is a season, and a time to every purpose under the heaven: A time to be born and a time to die." But the author of this memorable Scriptural text leaves to our speculation the parameters, the determinants and even the societal nuances which regulate these times.

-STANLEY M. ARONSON, MD

BROWN MEDICAL SCHOOL: CLASS OF 2005

STEPHEN R. SMITH, MD, ROSE BELL, AND JANICE VITICONTE

On May 29, 2005, 73 men and women received the Doctor of Medicine degree from Brown University representing the 31st class of physicians graduated from that institution since 1975. Of the 2312 physician graduates of previous classes, approximately 416 (18%) are currently licensed to practice in Rhode Island.

The purpose of this article is to introduce the graduates of the MD Class of 2005 to the physician community in Rhode Island, as many will be your future professional colleagues.

A PORTRAIT OF THE CLASS OF '05

Thirty-four graduates were men (47%) and 39 were women (53%). The racial/ethnic composition of the class, as shown in Table 1, shows a lower proportion of students from Caucasian-American backgrounds (42%) than the previous year (45%). Nineteen percent of the graduates are members of minority groups underrepresented in medicine (10 African Americans, and 4 Mexican American) as defined by the **Association of American Medical Colleges (AAMC)**. This number is higher than the 9.2% **underrepresented minorities (URM)** reported for last year's graduates. The proportion of URM students among all four years of Brown medical students is 19%.

Nine graduates are residents of Rhode Island. The Rhode Island students in this year's graduating class came from eight different communities in the state, with two students from Providence, and one student each from Bradford, E. Greenwich, E. Providence, Newport, Portsmouth, Riverside, and Westerly. The high schools from which the students graduated also reflect this diversity, with students having attended Classical, Claremont, E. Greenwich, Rogers, St. Mary Academy-Bayview, St. Paul's, and Westerly high schools.

The largest proportion of students in the MD Class of 2005 comes from the **Program in Liberal Medical Education (PLME)**, with 41 such graduates (56%) having come through that route. The second largest cohort of

students (12 graduates) came through the combined Brown–Dartmouth Medical Education Program in which students spend their first two years of medical school at Dartmouth, then transfer to Brown for the final two years.

The medical school entered into special agreements with postbaccalaureate premedical programs at Bryn Mawr College and Columbia University shortly after the PLME was inaugurated. Students from these programs decided upon a career in medicine only after completing college. Typically, they have been engaged in other careers for several years following college. The goals in establishing this new route of admission were to maintain a rich diversity in the student body by admitting students who were older and who had different academic and life experiences as well as rounding out the total class size to compensate for the expected attrition from the PLME. Six members (8%) of the class were postbaccalaureate students, three from Bryn Mawr College and three from Columbia University.

Among the remainder of the class, six students were part of the **Early**

Identification Program (EIP), three from Tougaloo College, two from Providence College, and one student from University of Rhode Island. EIP students are offered provisional admission to the medical school during their sophomore year at their respective undergraduate colleges. Of the remaining graduates, three entered medical school through the MD/PhD program, two through the Brown Avenue (current or former Brown students who were not in the PLME), and three through advanced transfer.

Brown University was the most common undergraduate college among the graduates accounting for 44 graduates. Tougaloo College came second with three members, followed by Haverford College, Providence College, and University of California Berkeley each with two members from the Class of 2005.

The most common undergraduate major (56%) among the class members was biology (including subdisciplines such as biochemistry, neural sciences, and microbiology). Science majors taken together (including psychology) accounted for 72% of all majors, while 18% of majors were in the humanities

Table 1. Demographic Characteristics of the MD Graduates of the Brown Medical School Class of 2005

Sex			
	Male	34	46.5%
	Female	39	53%
Race			
	Caucasian-American	31	42%
	Asian American	20	27%
	African American	9	12%
	Mexican American	4	5%
	Other Hispanic	4	5%
	Portuguese American	1	1.3%
	Foreign National	4	5%
State of Residence			
	California	11	15%
	New York	10	10%
	Rhode Island	9	12%
	Massachusetts	8	11%
	New Jersey	4	5%
	Maryland	4	5%
	Pennsylvania	3	4%
	Texas	2	2.7%
	Connecticut	2	2.7%
	Ohio	2	2.7%
	Georgia	2	2.7%
	Mississippi	2	2.7%
	Other States	10	10%
	Other Countries	4	5%

and 12% in the social sciences. Among the humanities majors, English was the most common choice, while community health was the most popular choice among those majoring in the social sciences. Nine students double majored.

WHERE THEY ARE GOING

Internal medicine remained the most frequently selected specialty, with 32 students selecting that specialty, and family medicine came in second place with 7 graduates choosing that specialty. Table 2 lists the number of students selecting different types of residency programs.

The proportion of the class entering specialties in primary care fell to 44% this year, continuing a 4-year slide. This includes the fields of internal medicine, pediatrics, family practice, medicine/pediatrics, and obstetrics and gynecology. Figure 1 illustrates the

specialty choices of the Class of 2005.

The actual number of graduates who will eventually practice primary care after completing their graduate medical education will be smaller than the 44% reported here. Based on previous data from the AAMC that tracked graduates, approximately 22 graduates (30%) will actually practice primary care.

Table 4 lists the Class of 2005 graduates and where they will be going to do their residency training. Of the 64 graduates who will enter residency training next year (9 are delaying their residencies for 1 or more years), 9 graduates matched with Brown-affiliated residency programs and will be staying in the state. Massachusetts continues to be the most popular state for residency becoming home for 15 graduates next year. New York was the second most popular locale with 11

graduates locating there, and California was fourth with five.

Table 4 lists those states where the graduates will be going for their first year of residency training. A majority of the Class of 2005, 56%, will stay in the cold Northeast, a decrease from the 72.5% in the previous class. Eleven percent of graduates will go to the West Coast, down slightly from 15% last year.

CONCLUSION

The proportion of Brown medical graduates entering primary care residencies closely approximates the national picture of all U.S. medical school seniors going into primary care. Among the U.S. medical school seniors matching through the National Residency Matching Program (NRMP), only 43% matched in a primary care specialty.¹ Students appear to be placing a high value on lifestyle issues when choosing their specialties.

Table 2. Specialty Choices for Brown Medical School Classes of 2001–2005

Specialty Choice	2005		2004		2003		2002		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%
Primary Care, Total	32	44%	41	47%	47	57%	44	59%	41	51%
Internal Medicine, Total	16	22%	20	23%	18	22%	21	28%	19	24%
Categorical Med	10	14%	15	17%	16	19%	16	21%	16	20%
Primary Care	6	8%	5	6%	2	2%	5	7%	3	4%
Pediatrics	4	5%	6	7%	11	13%	13	17%	6	8%
Family Medicine	7	10%	9	10%	11	13%	8	11%	10	13%
Medicine/Pediatrics	2	3%	4	5%	0	0%	2	3%	3	4%
Obstetrics & Gynecology	3	4%	2	2%	7	8%	1	1%	3	4%
Surgery	3	4%	4	5%	4	5%	4	5%	7	9%
Surgical Subspecialties, Total	6	8%	12	14%	10	12%	6	8%	6	8%
Ophthalmology	3	4%	5	6%	1	1%	2	3%	3	4%
Orthopedics	2	3%	3	3%	5	6%	1	1%	3	4%
Neurosurgery			0	0%	1	1%	0	0%	0	0%
Urology	1	1%	1	1%	1	1%	2	3%	0	0%
Plastic Surgery			1	1%	2	2%	1	1%	0	0%
Otorhinolaryngology			23	26%	0	0%	0	0%	0	0%
Dermatology	5	7%	1	1%	1	1%	1	1%	1	1%
Emergency Medicine	3	4%	4	5%	4	5%	3	4%	7	9%
Psychiatry	4	5%	4	5%	3	4%	5	7%	3	4%
Neurology	1	1%	1	1%	1	1%	1	1%	0	0%
Transitional & Preliminary Medicine	1	1%	2	2%	3	4%	2	3%	3	4%
Institutional Specialties, Total	9	12%	10	11%	4	5%	4	5%	7	9%
Anesthesiology			3	3%	1	1%	1	1%	0	0%
Pathology			0	0%	0	0%	0	0%	4	5%
Rehabilitation Medicine			1	1%	0	0%	0	0%	0	0%
Radiology & Rad Oncology	9	12%	6	7%	3	4%	3	4%	3	4%
Delaying Residency	9	12%	0	0%	4	5%	4	5%	5	6%
Not Entering Medicine			0		2	2%	0	0%	0	0%
Totals	73	100%	87	100%	83	100%	75	100%	80	100%

The data from previous years reported in this table have been revised from previously published reports to reflect the intended specialty choice of graduates rather than the type of program in their first postgraduate year (e.g., a graduate with a first-year preliminary position in internal medicine and an advanced match in dermatology is reported now as dermatology, not internal medicine).

Table 3. Brown Medical School MD Class of 2005 Residency Positions

Name	Hospital and Affiliation	Specialty
Barham Abu Dayyeh	Massachusetts General Hospital, Harvard Medical School	<i>Internal Medicine-Primary</i>
Samuel Andorsky	Friedenwald, Maryland General Hospital	<i>Ophthalmology</i>
	Sinai Hospital, Johns Hopkins University	<i>Internal Medicine (P)</i>
Matthew Babineau	Beth Israel-Deaconess Medical Center, Harvard Medical School	<i>Emergency Medicine</i>
Laura Capaldi	University of Massachusetts Medical School, UMASS	<i>Dermatology</i>
	St. Vincent's Medical Center, Yale University	<i>Transitional</i>
Justine Chang	Women & Infants' Hospital, Brown Medical School	<i>Ob/Gyn</i>
Kara Chew	University of California-San Francisco, UCSF	<i>Internal Medicine-Primary</i>
Charles Chia	Mayo Graduate School of Medicine, Mayo Medical School	<i>Dermatology</i>
	St. Vincent's Hospital, New York Medical College	<i>Internal Medicine (P)</i>
Carla Chibwesha	Women & Infants' Hospital, Brown Medical School	<i>Ob/Gyn</i>
Felicia Chu	Beth Israel Deaconess Medical Center, Harvard Medical School	<i>Neurology</i>
	Beth Israel Deaconess Medical Center, Harvard Medical School	<i>Internal Medicine (P)</i>
Stacey Clegg	Oregon Health & Science University	<i>Internal Medicine</i>
Aine Clements	Boston University Medical Center, BU	<i>Internal Medicine</i>
Lucy Demerjian	Harvard Longwood Psychiatry, Harvard Medical School	<i>Psychiatry</i>
Curtiland Deville	Hospital of the University of Pennsylvania	<i>Radiation-Oncology</i>
	Harbor Hospital, University of Maryland	<i>Transitional</i>
Nadine Dubowitz	University of California-San Francisco, UCSF	<i>Internal Medicine-Primary</i>
Heather Esquivel	Bayfront Medical Center, University of South Florida	<i>Family Practice</i>
Noam Fast	Einstein/Montefiore Medical Center, Albert Einstein	<i>Psychiatry</i>
Diana Ferris	Beth Israel-Deaconess Medical Center, Harvard Medical School	<i>Radiology</i>
	Baystate Medical Center, Tufts University	<i>Internal Medicine (P)</i>
Rebecca Fisher	University of Connecticut Medical Center	<i>Pediatrics</i>
Matthew Frances	University of California-Davis Medical Center	<i>Internal Medicine</i>
Paul George	Memorial Hospital, Brown Medical School	<i>Family Practice</i>
Robert Gray	Rush University Medical Center	<i>Orthopedic Surgery</i>
Wendy Gray	Cambridge Hospital, Harvard Medical School	<i>Internal Medicine</i>
Rosalind Hammond	Akron General Medical Center, NE Ohio Univ College of Med	<i>Med/Peds</i>
George Hardy	Rhode Island Hospital, Brown Medical School	<i>Med/Peds</i>
Michael Harwood	Rhode Island Hospital, Brown Medical School	<i>Dermatology</i>
	Roger Williams Medical Center, Boston University	<i>Internal Medicine (P)</i>
Charles Hebert	Rush University Medical Center	<i>Internal Medicine-Psychiatry</i>
Eric Huang	New England Medical Center, Tufts	<i>Transitional</i>
Jason Iannuccilli	Rhode Island Hospital, Brown Medical School	<i>Radiation-Oncology</i>
	Brown University Internal Medicine Residency	<i>Internal Medicine (P)</i>
Rumi Iqbal	North Mississippi Medical Center	<i>Family Practice</i>
John Kim	Boston University Medical Center	<i>Radiology</i>
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Amy Noack	San Francisco General Hospital, UCSF	<i>Internal Medicine-Primary</i>
Elizabeth Paupst	University of Toronto,	<i>Family Practice</i>
Claudeleedy Pierre	Boston University Medical Center	<i>Family Practice</i>
Michael Poch	Rhode Island Hospital, Brown Medical School	<i>Urology</i>
	Rhode Island Hospital, Brown Medical School	<i>Surgery (P)</i>
Matthew Press	Hospital of the University of Pennsylvania	<i>Internal Medicine</i>
Louai Razzouk	Mt. Sinai Hospital, Mt. Sinai School of Medicine	<i>Internal Medicine</i>
Usha Reddy	Bascom Palmer Eye Institute	<i>Ophthalmology</i>
	Northwestern McGaw, Northwestern University	<i>Internal Medicine (P)</i>

Amy Schecter	North Shore-Long Island Jewish Health System	<i>Surgery</i>
Erica Schockett	Hospital of the University of Pennsylvania	<i>Internal Medicine-Primary</i>
Elizabeth Schoenfeld	George Washington University	<i>Emergency Medicine</i>
	George Washington University	<i>Internal Medicine (P)</i>
Shayan Shirazian	New York Presbyterian Hospital, Columbia	<i>Internal Medicine</i>
Dorothy Shum	Kaiser Permanente-Los Angeles, UCLA School of Medicine	<i>Radiology</i>
Nicole Sunderland	Yale-New Haven Hospital, Yale School of Medicine	<i>Radiation-Oncology</i>
	Roger Williams Medical Center, Boston University	<i>Internal Medicine (P)</i>
Dennis Tanner	University of Tennessee College of Medicine	<i>Pediatrics</i>
Arlene The	New York Eye & Ear Infirmary	<i>Ophthalmology</i>
	Lenox Hill Hospital, New York University	<i>Internal Medicine (P)</i>
Tonslyn Toure	Boston University Medical Center	<i>Internal Medicine</i>
Brownsyne Tucker	Duke University Medical Center	<i>Ob/Gyn</i>
Robert Villarreal	Rhode Island Hospital, Brown Medical School	<i>Orthopedic Surgery</i>
Alexander Westphal	Yale-New Haven Hospital, Yale School of Medicine	<i>Integrated Adult/Child Psych</i>
Justin Wheeler	Oregon Health & Science University	<i>Family Practice</i>
Brian Zipser	UCLA Medical Center	<i>Radiology</i>
	Lenox Hill Hospital, New York University	<i>Internal Medicine (P)</i>

(P) =prelim

Table 4. Where Graduates are Going for Residency

State	Number	Percentage
Arizona	2	2.7%
California	5	6.8%
Connecticut	3	4.1%
District of Columbia	1	1.3%
Florida	1	1.3%
Georgia	1	1.3%
Illinois	3	4.1%
Massachusetts	15	20.5%
Maryland	2	2.7%
Mississippi	1	1.3%
North Carolina	1	1.3%
New York	11	15%
Ohio	1	1.3%
Oregon	2	2.7%
Pennsylvania	3	4.1%
Rhode Island	9	12.3%
Tennessee	1	1.3%
Washington	1	1.3%
Canada	1	1.3%
*Students delaying residency	9	12.3%
Total	73	100%

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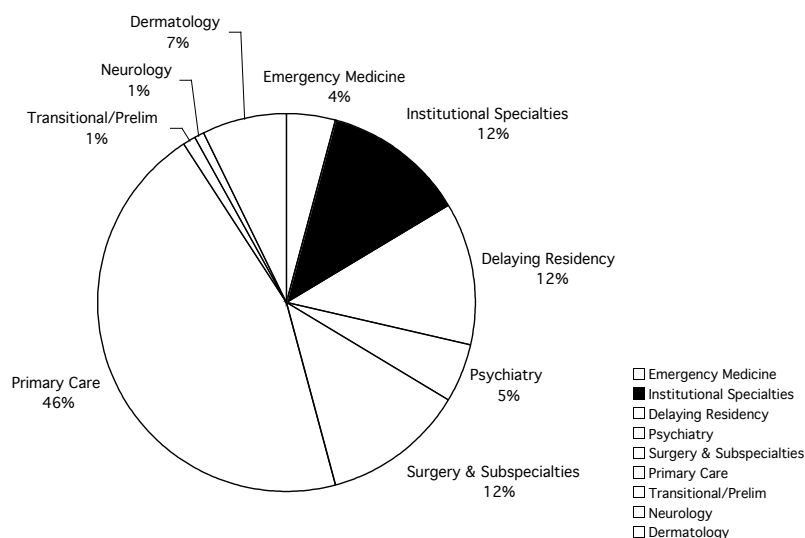
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Figure 1. Specialty Choices of the Brown Medical School Class of 2005



TOWARD AN INTEGRATED MEDICAL CURRICULUM

STEPHEN R. SMITH, MD, MPH

Medical schools around the world are moving from the traditional discipline-oriented curriculum toward an integrated curriculum. The Medical Curriculum Committee at Brown Medical School approved a vision for curriculum transformation that would create an integrated, patient-centered curriculum. In this article, I describe the historical evolution of curricula in American medical schools, the definition of integration, the rationale for integrated curricula and the evidence supporting it, concerns about potential negative consequences, and how the Brown curriculum may develop.

HISTORICAL EVOLUTION OF CURRICULA

Throughout the nineteenth century, many American medical schools relied primarily on an apprenticeship model of education.¹ Yet even in these schools, students undertook a course of study in the basic medical sciences during the first two preclinical years that consisted of anatomy (including histology and embryology), physiology (including biochemistry), pharmacology, pathology, and bacteriology.² As the twentieth century progressed, new areas of knowledge were added, such as immunology, virology, and genetics, but stayed within the discipline-oriented structure.

Case Western Reserve School of Medicine pioneered an organ-system based structure to its curriculum in the late 1950s.³ Most U.S. medical schools utilize an organ-system structure in the second year of the medical school curriculum, but maintain a discipline-oriented structure in the first year of medical school, though there are many variations on the theme.

The **Liaison Committee on Medical Education (LCME)**, the accrediting body for medical schools, still refers to the traditional disciplines in its standards when specifying what the content of medical school curricula should contain. However, the LCME

has also been stressing the idea of a "coherent and coordinated curriculum" in which content is integrated within and across the academic periods of study (horizontal and vertical integration).⁴

DEFINITIONS OF INTEGRATION

Harden offered a very useful construct for viewing integration as steps in a ladder.⁵ Harden's ladder of integration has 11 steps, each reflecting a greater effort at integration. (Figure 1)

At the lowest rung, labeled "isolation," each course is taught in isolation with the instructors of each course largely unaware of the content of the other courses. No attempt is made to modify what is taught based on what is being taught in the other courses.

At the next rung, teachers are made aware of what is being taught in other courses. Then come efforts to make connections between courses, followed by incorporation of common themes within separate courses.

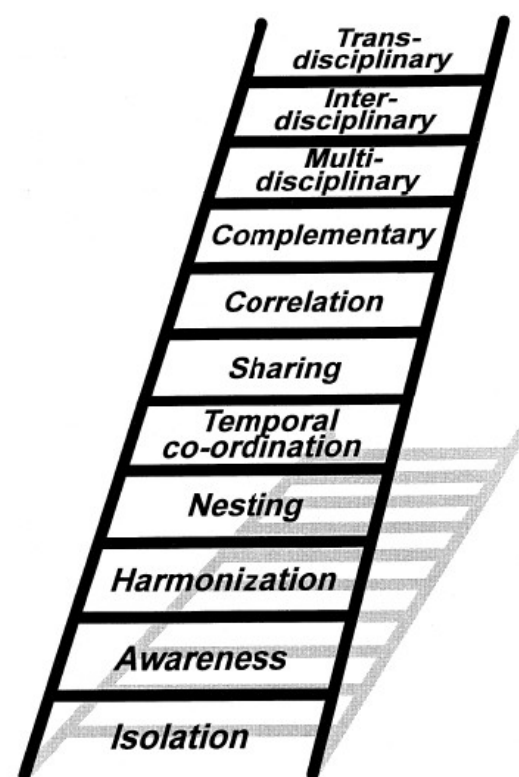
The fifth rung in Harden's ladder is called "temporal coordination," in which the instruction in separate courses is deliberately lined up with one another. For example, lectures in the pathology of lung disease occur in the same week as lectures in the pharmacology of asthma. Many medical schools have reached this level of integration, which might better be referred to as coordination, or, as some have uncharitably called them, "stapled-together courses."

The higher rungs on the integration ladder are much less common in medical education and are the ones that Brown

Medical School aspires to reach. The sixth rung—sharing—involves joint planning and teaching in a deliberate way. A good example of this actually occurred already within the Brown medical curriculum. The human reproduction, growth, and development section of the former Integrated Medical Sciences course brought together teachers from pediatrics (Robert Schwartz), pathology (Donald Singer), and obstetrics and gynecology (John Evrard) during the 1970s. Dr. Schwartz had previously been on the faculty at Case Western Reserve, so understood their model of integration. The faculty met nearly every weekend throughout the year to plan and refine the course. They planned the lectures together and attended each other's

Figure 1

The 11 steps on the integration ladder



From Harden RM. The integration ladder: a tool for curriculum planning and evaluation. *Med. Educ.* 2000;34:551–557. Reprinted with permission, Blackwell Science Ltd.

lectures.

At even higher rungs, the proportion of student time spent in specific subjects or disciplines recedes as the amount of time in tasks that involve an integrated approach to learning increases. At the highest level, the boundaries between disciplines disappear and the students focus entirely on a new construct of understanding that transcends the disciplines.

RATIONALE FOR INTEGRATION

Dividing medicine into disciplines is an artificial construct. The real world of medical practice is transdisciplinary in large part. Physicians begin their interactions with patients in an open-ended way, even if they are specialists. The internist must consider a surgical or obstetrical or psychiatric cause of abdominal pain when first encountering a patient with that complaint.

Dividing the basic sciences into disciplines is also an artificial scheme that serves a specific purpose, namely, scientific investigation. Medical research is largely a reductionistic enterprise, delving more deeply into ever more focused areas of research. This disciplinary approach has been very successful in advancing scientific knowledge.

Learning to become a physician is different from research, however. Medical students need to fit things together as well as tease things apart. They need to learn the relationship between the parts, how to synthesize, how to see the big picture.

The classic educational paradigm, as pronounced by Alfred North Whitehead, was romance, precision, and synthesis, in that order.⁶ Once student interest was engendered in the romance phase, instruction focused on the details of what needed to be learned. This was taught in the traditional discipline-specific method. Only after a firm foundation of facts was accumulated would the teaching shift to synthesizing the information together.

This approach to teaching and learning has been called into question by educational researchers in the past few decades.⁷ Learning facts is easier when those facts are learned in a relevant and meaningful context. This

premise led to the development of **problem-based learning (PBL)**, first at McMaster University, then spreading throughout most medical schools. Students are presented with a case study of a patient with a problem. Students discuss the case to determine the explanation of the problem. Students will usually know only a small amount about the problem from their previous knowledge. They will decide what more they have to learn, divide the learning objectives up among the group, research their assignments, then reassemble to put what they've learned together to solve the problem.

PBL is often combined with discipline-oriented teaching to provide an integrating learning experience. A study by Schmidt et al.⁸ examined the effect that three different curricular approaches had on student performance on a test that measured their diagnostic abilities. Students at the medical school with an integrated curriculum (Amsterdam) performed significantly better than the other two groups (traditional discipline-oriented at the University of Groningen and PBL at the University of Limburg medical school in Maastricht in the Netherlands) in the second and third curriculum years, and better than the conventional curriculum, but not the PBL curriculum, in the fifth and sixth years.

Empirical studies attempting to evaluate the comparative effectiveness of these various approaches to teaching and learning have been few and inconsistent in their findings. Nevertheless, the momentum for curriculum integration has been building, fueled by theoretical arguments in its favor and by student preference for learning in this manner.

CONCERNS ABOUT NEGATIVE CONSEQUENCES

Despite the momentum in favor of integration, skeptics raise concerns about possible negative consequences. Drake listed nine concerns raised about integration in K–12 education that I will put into a medical education context.⁹

Students won't learn basic sciences. Some fear that students will focus

exclusively on clinical aspects and ignore the basic sciences in an integrated curriculum. This won't happen if clear learning objectives are shared with the students and evaluations are aligned with those learning objectives. When students know what is expected of them, they will rise to the occasion.

Optimum learning moves from basics to more complex structures. While it is true that learning proceeds from basic to complex, learning the basics does not have to occur in isolation. Rather than learning everything about anatomy and then later applying that anatomy to physiology, students can learn the basics more easily when related subjects are learned together and put in a relevant context.

Content is most important. Thinking about medical education has evolved from the premise that just knowing is enough to one in which doing what we know is most important. Brown's competency-based curriculum combines knowledge and ability together, emphasizing that competent performance requires both.

Course content will not be covered. While some content may not be easily identified at first glance in an integrated curriculum, the very nature of an integrated approach results in expansive learning. For example, teaching about cardiac arrhythmias in an integrated curriculum will, by necessity and design, include a wide range of content including electrophysiology, gross and microscopic anatomy of the heart and its pacemaking components including pathological changes, pathophysiology of arrhythmias, and the pharmacology of anti-arrhythmic drugs and how they relate to the pathophysiology.

Integrated curriculum is superficial. On the contrary, teaching in an integrated curriculum can delve deeply by exploring relationships and explaining phenomena in a richly textured way. A perfect example is the way in which behavioral science and neuroscience can now be woven together as our understanding of how the brain works has become much clearer.

Knowledge belongs in discrete categories. We try to make sense of the world by creating simplified models and putting things into neat categories. But the real world is not so neat. In the rough and rumpled world of reality, boundaries and distinctions blur. An obese, cigarette-smoking patient with hypertension, hyperlipidemia, diabetes mellitus, peripheral vascular disease, erectile dysfunction, and depression does not neatly fit into a single category. Each of the listed conditions interrelates with another. To ignore the interrelationships is to court disaster.

Biochemistry (or any subject) is a "force-fit." While acknowledging that integration may work well for other subjects, some teachers will insist that their particular subject is best taught separately because to do otherwise would be to force it to fit artificially with other subjects. One needs only to read the "Medical Progress" articles in the *New England Journal of Medicine* to realize that every subject—basic science and clinical—is inextricably linked in the web of human health and disease to others.

Teachers don't know enough. Teachers don't know enough only if the expectation is that they will know everything. We seek to instill in our students an attitude of inquiry and skills for lifelong learning. Teachers can be role models of such an approach to learning by joining with students in the process of discovery. An integrated curriculum invites the learners to explore new areas, to pursue a line of inquiry in whatever way it leads. Teachers can facilitate the journey without having to be the source of all knowledge.

Integration is only for gifted students. The brightest students can probably learn easily with any curriculum structure, perhaps because they are able to integrate new learning with previous knowledge more rapidly and easily than the average student. Creating a curriculum that helps all students make those connections through an integrated approach makes learning easier and more effective.

The student is a passive learner. Despite some improvement in the past few decades, medical education remains too passive, especially in the first two years of medical school. Discipline-oriented teaching more easily succumbs to passive teaching and learning when the content of that discipline is presented in isolation. Integrated teaching encourages students to pursue the web of knowledge on their own, constructing their own meaning in the process.

THE VISION FOR CURRICULUM TRANSFORMATION

The Medical Curriculum Committee at Brown Medical School approved a vision for curriculum transformation that would build upon the competency-based curriculum that was implemented in 1996, incorporating five essential elements:

1. integrated coursework;
2. patient-centered focus;
3. small group active learning methods;
4. an educational environment that is both humane and conducive to learning; and,
5. fuller and more robust integration of new technology.

The first two years of medical school will be divided into a series of blocks. During the first year, the emphasis will be more on normal structure and function, while in the second year, more emphasis will be placed on abnormalities and pathophysiology. A spiral curriculum concept will be utilized in which the same organ systems will be repeated in the second year, but with a different emphasis and with greater depth.

While no agreement has been reached yet, the blocks might be as shown in table 1.

The sequence in the first year begins with a block (Body Defenses) in which more general principles can be introduced, such as those related to the immune system, microbiology, cell biology, and homeostasis. This is followed by blocks that more or less follow the regions of a traditional anatomical dissection beginning with surface anatomy during the body defense block, then going to the thorax, abdomen, pelvis, extremities, and brain. The second year sequence of blocks more or less follows the current sequence in pathophysiology.

In the integrated model, courses that used to be taught as disciplines, such as histology, anatomy, and physiology, will be taught as part of the integrated teaching in each block. Thus, during the circulation and respiration block, students will learn the anatomy, microanatomy, and physiology of the heart, blood vessels, and lungs that they would have previously learned in separate courses. Students will also be introduced to information from other disciplines as appropriate, such as learning about staphylococcus as a prototypical Gram-positive bacterium during the body defenses block when cellulitis is described. Students would

Table 1

Hypothetical Block Structure for an Integrated Curriculum

Year 1	Year 2
Body Defenses	Cardiovascular
Circulation and Respiration	Hematological and Immune
Nutrition, Digestion, & Metabolism	Renal
Excretion and Homeostasis	Respiratory
Endocrine and Reproductive Health	Infectious Diseases
Musculoskeletal	Gastrointestinal
Nervous System & Psychological Health	Endocrine, Reproductive & Developmental
Cancer	Dermatological and Musculoskeletal
	Neurological & Psychiatric

also learn about the general principles of the inflammatory response at the same time, thus incorporating material that is currently taught in the general pathology course. Principles of pharmacology will be introduced early as will specific pharmacological agents, with the level of understanding increasing over the two years with repeated exposures.

The weekly schedule of students will be divided into the following activities that will generally be repeated each week: lectures, small group sessions around the virtual patients (patient-centered learning, or PCL), the doctoring cluster (clinical skills acquisition, community practice placement, professional development, and student-selected electives), biopractical exercises, and independent study. (Table 2).

The daily lectures are intended to provide a conceptual organizing framework for students rather than as a means of delivering detailed factual information. More time is built into the schedule for independent study, reflecting the emphasis on self-directed learning. e-Learning resources will be readily available to students through the virtual patients and through a curriculum map of e-learning content contributed by a global consortium of medical schools.

Biopractical exercises will include traditional laboratory work such as a dissection of a human cadaver, microscopic examination of tissues, and physiological demonstrations. Innovative simulated biopractical exercises involving human manikins will be scheduled with students in small groups at the simulation center during these times.

The **patient-centered learning (PCL)** small groups will apply problem-based learning techniques to the virtual patients. Small groups of students,

facilitated by a faculty tutor, will discuss the virtual patient cases and define a list of learning objectives. The students' list of learning objectives will be augmented with relevant learning objectives for the block. During their next meeting, the students will report to their colleagues the results of their research of the learning objectives. As a group, the students will decide on a management plan and disposition for the virtual patient. Usually, the virtual patient will be seen again by the students for a "return visit" in a few weeks at which time the students will be able to see how the patient has progressed.

In addition to acquiring knowledge of the basic sciences, students will also acquire competency in the nine abilities through their learning activities.

The new curriculum envisions a changed role for faculty. Instead of the traditional role of the "sage on the stage," the faculty will instead play the role of the "guide on the side." That is to say, faculty will be less involved in transmitting factual information and more involved in selecting resources that the students can utilize to acquire the knowledge through self-directed study. This evolution in the role of the faculty has been occurring in higher education gradually over the last several decades, but has accelerated as learning technologies have made access to vast repositories of high-quality teaching resources much easier and faster.

CONCLUSION

Though solid empirical evidence demonstrating that an integrated curriculum is superior to a traditional discipline-specific curriculum is scant, the impetus toward such an approach is strong. Theoretically it makes sense, accrediting bodies are urging its adoption, and students clearly prefer it.

Successful implementation of an integrated curriculum faces serious obstacles, however. Sufficient time for faculty to meet together to plan the curriculum is the most critical ingredient for success. Faculty are feeling pressure to spend time on obtaining research grants and generating income from clinical activities. If these constraints on faculty time can be mitigated, then the likelihood for success is high.

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Table 2 Hypothetical Weekly Schedule in an Integrated Curriculum

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00 -10:20	Lecture	Lecture	Lecture	Lecture	Lecture
10:30-12:30	Biopractical	Self-Directed Learning	Resource Session	Biopractical	Self-Directed Learning
1:15-3:15	Patient Centered Learning	Doctoring	Patient Centered Learning	Doctoring	Patient Centered Learning
3:30-5:00					

COMMUNICATION: DEAF PATIENTS AND THEIR PHYSICIANS

TERESA ROSS, AND EDWARD R. FELLER, MD, FACP

An estimated 9% of the US population is deaf or hard-of-hearing, and this number is increasing.¹ A small percentage of the deaf population, and up to 1% of all children, were deafened at an early age, before the development of language.¹ Some were born deaf, others became deaf before age 3; as a group, they constitute Deaf Culture. While later-deafened adults behave similarly to a disabled or chronic disease group, Deaf Culture interacts with the health care system as a linguistic and cultural minority.

Many physicians do not understand that the Deaf Culture sees itself as a distinct cultural and linguistic entity rather than as a disabled group. The following true anecdote provides a stark example: A deaf woman, part of a large deaf family and married to a deaf man, was upset to give birth to a hearing child, much to the surprise of her physicians and nurses. Rather than rejoice that her child would more easily interact in the majority culture, she felt that her child would not be fully part of her family and culture.

THE DEAF WORLD

Like other minority cultural groups, the deaf have less education, lower health literacy and lower socioeconomic status than the dominant culture. (Table 1) A distinct language, **American Sign Language (ASL)**, is another barrier to interaction.

Town planners in Laurent, South Dakota, recently designated the town as A Town for Signers, a place where our nation's signing community can gather together to live, work, play, and worship in comfort and beauty. The planners expect not only deaf individuals but also their hearing families and friends to come to a town designed for a non-hearing population.^{1,2}

Salient features of Deaf Culture include use of a non-English language, socialization and marriage predominantly within their own community, and distinct norms. Often educated in specialized schools, deaf individuals may have little interaction with the hearing and English-speaking

worlds. Students who graduate from high school in ASL may read English at or below a 5th grade level. Ninety-five percent of the deaf marry other deaf individuals, but as many as 90% of deaf children have parents who hear normally.¹ Many of these parents never become fluent in ASL; thus, these children may be divorced from the mainstream culture even at home. Common consequences are inadequate exposure to health information in English, less interchange with one's family, and sparse knowledge of family medical history.

The deaf rarely receive health care from deaf physicians.¹ When communicating with health care providers, deaf patients face multiple difficulties. There exists both a practical and a cross-cultural barrier: several authors have suggested that the

“... PHYSICIANS OVERESTIMATE THE EFFICACY OF LIP-READING.”

latter is as important as the former.² Misconceptions abound on both sides, with each poor interaction breeding more mistrust between the groups. The consequences may be sub-standard patient-clinician communication; prejudice; avoidance of routine care, including preventive and screening services; low health literacy; and poor health care. The deaf as a group have poorer overall health status.

The risk for miscommunication and cultural misperception may be higher in healthcare settings than elsewhere. Zazove and colleagues reported that, among deaf individuals who regularly used ASL interpreters, interpreter utilization was lower in physicians' offices than in other settings. Furthermore, over one-fifth of deaf persons report rarely or never communicating with hearing persons, and physicians report rarely communicating with deaf persons,

inside or outside of the office.²

DIFFICULTIES OF DEAF PATIENTS AND HEARING PHYSICIANS

McEwen and co-workers reported that, compared to adults learning English as a second language, deaf patients were half as likely to speak with their physicians in their language of greatest fluency (22% of deaf patients compared with 42% of non-native English speakers).³ The deaf children of hearing parents have an additional disadvantage: they are less likely to learn a complete and accurate personal family medical history. Compared to hearing controls, deaf patients report feeling less comfortable with their physicians, are more likely to dislike going to physicians, have greater concerns that the physicians prescribed the wrong treatment, and feel that physicians treat them as less of a person.¹⁰

When physicians are interviewed about their interactions with deaf patients, the results correspond to the patients' surveys. Physicians are correctly concerned that their deaf patients understand them less often, are less often understood, are less trusting of physicians, are unlikely to be able to maintain a free-flowing conversation, and are less likely to ask for repetition or clarification.⁴ That both deaf patients and their physicians recognize similar patterns of difficult communication has not translated into better practice. Many physicians are unaccustomed to thinking of deaf patients as utilizing a separate language and not being fluent in English. A survey of internists at an academic medical center found that the mean number of deaf patients that a physician had seen in the previous two years was two, and that physicians rarely saw deaf individuals outside of a medical setting.¹⁰

Professional interpreters are a major asset. In one study of a university Internal Medicine department, a majority of physicians (63.4%) recognized that the ideal means of communication with a patient who uses ASL would be a sign language

interpreter. Nearly a third (32.4%), however, thought that writing notes back and forth would be the best form of communication even for those who sign.¹⁰ In light of the low-levels of written English literacy and general health literacy in some deaf patients, that assumption is inaccurate. Only 4.2% thought that lip-reading should be attempted as first-line. Nevertheless, physicians overestimate the efficacy of lip-reading. In that same series, 65% of physicians thought that 85% was the fraction of words correctly read by lip reading in deaf patients trained to lip-read. The actual number is 20%.² Furthermore, even among the 63% of physicians who recognized that an ASL interpreter would provide the ideal form of communication, the use of interpreters was not common.

Multiple studies suggest the absence of an interpreter has a negative impact on effective medical communication. Only 18-35% of the deaf regularly use an interpreter in encounters with physicians, and 41% who did not use an interpreter believed that they understood their physician “very well” and 20% “not at all.”¹¹ Surveys indicate that ASL use by physicians confers respect for the deaf patient. As one

deaf patient stated, *“Immigrants are not expected to read lips in English, nor is it assumed that they are mentally retarded if incapable of composing grammatically correct written questions in English.”*¹²

STRUCTURAL IMPEDIMENTS

Physicians’ misconceptions about Deaf Culture, inadequate knowledge and understanding of the uniqueness of ASL as a language, and the practical difficulties of bridging a linguistic and cultural barrier all impede health care. Deaf patients often self-report distrust of the healthcare community, usually because of negative experiences.

Furthermore, time and money represent the largest structural barriers. In one survey, all physicians reported that the time and effort involved in treating deaf patients were greater than with hearing patients. Respondents were split between whether that time and effort was “slightly greater” (55%) or “much greater” (45%). The physicians who used ASL interpreters more frequently were the ones who believed that the time and effort involved was “much greater.”¹⁰

Cost too is a barrier. The **Americans with Disabilities Act (ADA)** prohibits health care providers from charging

the expense of an interpreter to the patient. Many insurance plans do not cover the cost. In Rhode Island, ASL interpreters ask for a minimum of two hours per visit, at \$50-75 per hour, plus transportation expenses.¹³ The interpreter expense may exceed the physician’s reimbursement for the visit.

Federal and many state anti-discrimination statutes require “reasonable accommodations” be made for deaf or hard-of-hearing persons. Depending on the state, Deaf Culture may fall under both the ADA and civil rights legislation. The burden of providing an interpreter or an adaptive communication device rests on the physician or hospital. The law is not always clear on what constitutes reasonable accommodation in urgent or emergent situations, but courts have upheld the need for an interpreter for patients who are seen routinely in a clinic or primary care office.

HEALTH CONSEQUENCES

A small body of literature has documented poorer health status and decreased preventive care in the Deaf Culture than in the general population. One study examined a Baltimore

Table 1: Ten things you might not know about deafness

1. Persons deafened before the onset of language behave as a distinct linguistic and cultural minority, not as a disabled group (the latter being the typical behavior of those who become deaf after acquisition of language). ⁵
2. American Sign Language (ASL) is the 3 rd most common primary language in the US. ASL has no written form. ²
3. ASL’s vocabulary, syntax and grammar are not the same as English. ²
4. A deaf student who graduates from high school in ASL often reads English below a 5th grade level. A minority of deaf individuals (fewer than 20% in some studies) report fluency in written English. ^{2,5}
5. Approximately 90% of deaf children have hearing parents. Deaf parents may be disturbed by giving birth to a hearing child who may be estranged from the family’s deaf culture.
6. Lip reading is inaccurate; only 20-40% of sounds are unambiguously visible on the lips and are formed instead in the tongue or back of the mouth. Only 10% of deaf patients report full understanding of what physicians tell them using lip reading; as many as 65% of physicians believe that 85% is the fraction of words correctly read by lip reading in deaf patients trained to lip read. ⁷
7. The deaf have a lower health literacy and poorer doctor-patient communication than the general population, partly because they are deprived of cues from TV, radio and print sources and do not receive health information from physicians in their native language.
8. Deaf patients have lower rates of satisfaction with their health care and physicians, lower levels of health care utilization, especially preventive services and screenings. ¹¹
9. The Americans with Disabilities Act (ADA) requires physicians to provide interpreters, commonly not reimbursable by insurance; courts have held doctors liable for injuries that occur in the absence of appropriate communication.
10. Data comparing the health literacy of deaf adults with adults studying English as a second language suggest no difference in medical vocabulary. Fewer than 50% correctly identified gallbladder, stools, sober, anxiety, erection, or nausea; more than 90% correctly identified x-ray, cough, alcohol, diet, fever, and aspirin. ⁸

primary care program which provided general medical services to the deaf population in a specialized clinic with readily available ASL interpreters.¹¹ The comparison between the cases receiving care in their native language and the deaf control group illustrates the degree to which language can influence even the most routine care. The specialized program used ASL interpreters 84% of the time, compared to 20% of the time for controls. Rates of Pap tests (90% vs. 72%), mammography (86% vs. 53%), rectal exams (72% vs. 25%), and breast exams (76% vs. 71%) were all higher in the ASL group. The latter was more likely to receive psychiatric care (49% vs. 5%). Finally, 92% of the ASL group reported a high rate of satisfaction, compared with 42% for the controls.¹¹

Among deaf patients receiving care in general medical offices, deaf patients were found to have different beliefs about health and wellness than hearing controls. The deaf patients were less likely to believe that smoking less, exercising more, and maintaining an ideal weight could improve health.¹⁴

Deaf patients have also reported a lower subjective health status than their non-deaf counterparts, in spite of lower rates of tobacco and alcohol use.

FUTURE POSSIBILITIES AND CHALLENGES

The pre-lingually deaf and hard-of-hearing population may be the non-English-speaking population with the greatest difficulty communicating in healthcare settings.

The delivery of, culturally-sensitive

health care to the deaf community confronts many barriers. (Table 2) Specialized clinics to provide primary care in ASL have been shown to be effective, but are practical only in urban areas. Most deaf patients will continue to receive their primary care in general medical practices, and nearly all deaf patients will receive specialty care from providers who do not use ASL. The challenge is to educate these providers on Deaf Culture and make them sensitive to communication strategies. Some model programs have attempted to do this.¹⁵

Even as medical schools educate students, physicians need education. Simple instructional materials about communication strategies could be made available, most easily via websites, and the inclusion of phone numbers for state interpreters or the TTY system could be a starting point for physicians to provide better care for deaf patients.

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Table 2: Practical suggestions for improving communication^{12, 16}

Basic Procedures	Optimizing Environment	Patient Interaction	Current System Problems
Instruct all personnel about specific communication efforts.	Know local resources, e.g. ASL interpreters, legal support, community agencies.	Ask patients about preferred communication.	Insufficient number of ASL interpreters.
Prominently display communication strategy in medical record.	Use pictures or diagrams to illustrate tests or procedures.	Avoid family or friend interpreters. Look directly at patient, not the interpreter	Lack of awareness about TTY/TDD and other assistive communication devices.
Use easy-to-read written instructions about exam room or procedures.	In waiting room, use vibrating pager or non-verbal means to alert patients.	Describe all planned physical maneuvers; inform patients immediately before touching.	Lack of specialized, centralized primary care centers in urban settings
Disseminate basic facts about deaf culture, Expand Internet use.	Plan ahead; stay on schedule so that interpreter does not leave too early.	Periodically assess effectiveness of communication.	Inconsistent training for health care workers.
Understand legal (ADA) requirements and compliance.	Arrange space so the deaf can visualize all interactions.	Summarize important information in easy-to-read sheets.	Insufficient insurer reimbursement for interpreter services. Huge potential cost.

A COLLABORATIVE MANAGEMENT MODEL FOR MENTAL HEALTH CARE AT THE RHODE ISLAND FREE CLINIC

TRIPLER PELL, MD, MSC, AND EDWARD R. FELLER, MD, FACP

Founded in 1999, the **Rhode Island Free Clinic (RIFC)** provides medical care and preventive health services to adults without health insurance. The clinic is staffed by more than 150 volunteers, including 25 health care providers, numerous interpreters, and a variety of health professions students. RIFC offers both primary care and select specialty services (women's health, diabetes, podiatry) and serves as a gateway into the mainstream health system. Diagnostic and specialty services are provided at no/low cost through referral with area hospitals and medical practices. RIFC volunteers include an active Board of Directors; a Medical Director; physicians and nurse practitioners from private or academic settings who generally volunteer 1-2 nights per month for 3-hour clinic sessions. Other workers include medical and nursing students; participants from **Volunteers in Service to America (VISTA)**; and a variety of others, including retired professors, computer programmers, human resource experts, and data entry clerks. Staff includes a paid executive director, full-time nurse clinic coordinator and a part-time, grant-funded data manager. RIFC is a clinical training site for residents at Women & Infants' Hospital, Rhode Island Hospital, and Memorial Hospital of Rhode Island. Further information is available at www.rifreeclinic.org.

RIFC is the medical home for over 1400 underserved patients. Approximately 65% are employed. They represent diverse backgrounds: 65% Hispanic, 15% Caucasian, 11% African American, 2% Asian, and 7% other. Most patients receive free medications through donated samples and indigent patient drug programs. Prescriptions are rarely written since many patients cannot afford them. In total, RIFC has had 6,500 patient visits since opening; with visits increasing by 8% in 2003 and 42% in 2004.

MENTAL HEALTH SERVICES PROGRAM

In September 2004, the RIFC established a culturally sensitive mental health program. Mental health

diagnoses are twice as prevalent among low-income, uninsured patients as in the general primary care population.¹ Other than services for emergent care, our community had no mental health resources readily available for our patient population. In addition, many of our patients had significant linguistic and cultural barriers, which were poorly addressed by mental health service agencies. A 2003 survey of 146 federally-funded **community health centers (CHC)** providing comprehensive care to 2.3 million patients reported a pervasive inability to obtain basic psychiatric services, including psychologist referral (30.3%), psychotherapy (38.3%), psychiatric hospitalization (32.6%), and mental health counseling (13.5%). Only 40 to 60% of CHCs reported being able to refer patients to family therapy, group therapy, stress management, or to a domestic violence shelter.²

COLLABORATIVE MANAGEMENT MODEL

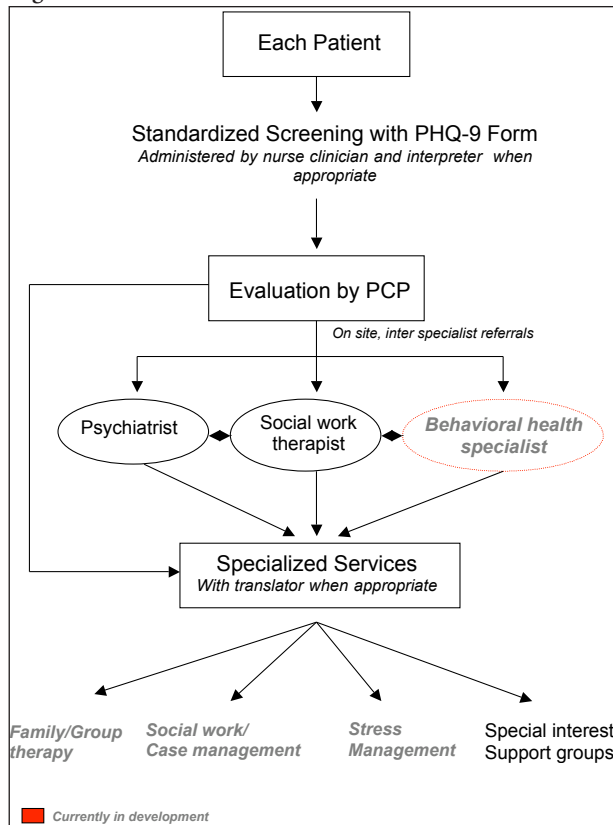
After researching the literature and consulting expert opinion for the most efficient models of care and those which offered the best patient outcomes in primary care settings, the mental health program was developed according to the collaborative management model.^{3,4} Our national e-mail survey of free clinics indicated that the RIFC is unique in offering this model for mental health services with a volunteer staff in a free clinic. This model includes a comprehensive and multi-disciplinary intervention strategy, standardized screening, chart sharing and collaboration between primary care providers, psychiatrists, social work therapists, and behavioral health specialists within the same facility. **Mental Health (MH)** providers evaluate and treat patients during primary care and women's clinics, facilitating better communication between providers, enhanced continuity of care, and more efficient, high quality care. The collaborative model may ameliorate the common reliance on medication alone in this population as well as decreasing the stigma of mental illness by involving

primary care physicians and allied health professionals. This strategy is also designed to alleviate "referral gridlock," a common problem in obtaining mental health referrals for the uninsured.⁵ Published data in other settings suggest that this approach facilitates a unified facility definition of each patient's problem, fosters a therapeutic alliance, and is more effective in producing favorable outcomes than usual care for depression in a diverse range of primary care settings.⁶

Standardized screening and future outcomes measurement for depression are facilitated by using the **Patient Health Questionnaire-9 (PHQ-9 or PRIME-MD)** assessment form in English and Spanish. After evaluating multiple potential screening instruments, PHQ-9 was selected. This evaluation tool has been validated in multiple analogous settings.^{7,8} At intake, every patient fills out this form in the appropriate language with a nurse clinician and translator (if necessary). Every patient who enters the clinic is screened by administration of the PHQ-9 form and is further assessed by the **primary care provider (PCP)**. If the patient is at risk for or is suspected of having mental illness, as demonstrated by the PHQ-9 form and/or the clinician's assessment, the patient may be a) treated by the PCP, b) referred for counseling with a social work therapist, c) referred to a psychiatrist for evaluation and/or ongoing treatment, or d) a combination of all of the above. Referrals amongst providers may occur at any time and continuity of mental health provider is maintained. (Figure 1)

Due to the RIFC's lack of "systems" constraints, few bureaucratic hurdles stymie patients' mental health care. Patients may be followed simultaneously by a PCP, psychiatrist, and therapist. Many appointments may be accomplished in a single evening visit to the clinic, thus minimizing problems of adherence, communication, transportation and streamlining care. Based on our ongoing surveys and literature data, same-site care also seems to improve patient satisfaction.

Figure 1



The MH program has 7 volunteer providers (4 psychiatrists, 1 psychiatric nurse, and 2 social work therapists), and 2 trained mental health interpreters. The interpreters are psychology undergraduates at Brown University and native Spanish speakers who consistently work with the same provider.

Support groups have been established around areas identified by needs assessment and provider input. All services are free and provided by trained volunteers. The initial support group was developed to meet the needs of Spanish-speaking female immigrants suffering from depression related to social and cultural isolation. Many of these patients had abandoned children in their native countries to immigrate to the United States. Subjective feedback from group participants and facilitators indicates that this approach has been successful. In addition, new programs, including family and group therapy, social work case management, relaxation therapy and stress management, are being developed.

PATIENTS AND METHODS

Retrospective review (29 charts) was conducted of all patients referred by a PCP for MH services between September 1, 2004, and March 1,

2005. As of March 1, 2005, the mental health program had 94 patient visits. Fourteen percent of these patients were male; 86% were female. The average age of MH patients is 41, ranging from 20 to 63 years of age.

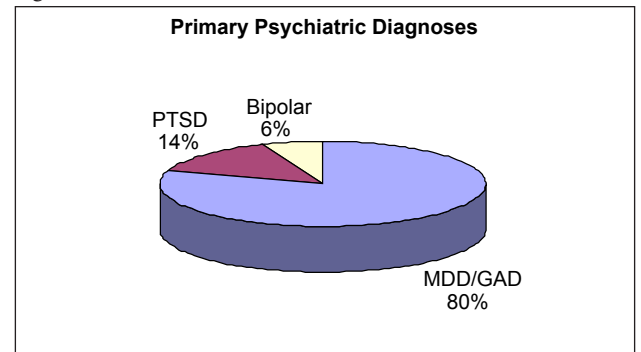
RESULTS

As of March 2005, 100% of patients referred for MH services had followed up with a MH provider. Major primary psychiatric diagnoses include: **Major Depressive Disorder (MDD)** (79%), Post Traumatic Stress Disorder (14%), and Bipolar Disorder (7%). Of those suffering from depression, 35% have also been diagnosed with **Generalized Anxiety Disorder (GAD)** and 3% suffer from Post-Partum Depression. Three percent suffer from alcohol/drug addiction. (Figure 2)

Fifty percent of MH patients evaluated during the pilot study have a self-reported history of severe physical or sexual abuse. A review of MH provider intake evaluations and follow-up assessments demonstrated that 40% of patients admitted to experiencing suicidal ideation, either at the beginning or during the course of their treatment. Sixty-five percent of patients complained of chronic pain and 45% of patients had a major medical condition in addition to their psychiatric diagnosis, such as diabetes or rheumatoid arthritis. (Figure 3)

Countries of birth include Spanish speaking countries (55%) (Bolivia, Guatemala, Venezuela, Dominican Republic, El Salvador, Columbia), United States (35%), Rwanda, Cape Verde, and Cambodia. (Figure 4)

Figure 2

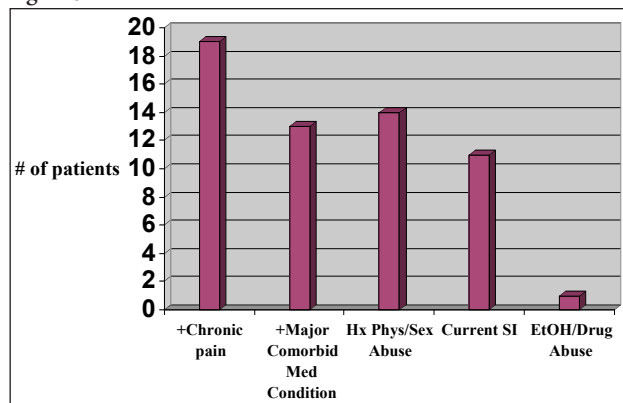


DISCUSSION

Barriers to adequate mental health care for the uninsured are multiple and well-documented, including expense; social stigma; absence of a referral network; difficulty in obtaining evaluation, consultation or therapy; under-diagnosis by providers; and limited availability of linguistic and culturally sensitive services.⁹ In order to circumvent these impediments, the RIFC has developed a collaborative management model involving PCPs, psychiatrists, social work therapists and translators within the same facility. This strategy incorporates universal MH screening with linguistic and culturally appropriate instruments, a standardized referral and consultation form, and in-house services at regularly scheduled clinic hours to facilitate provider communication and patient acceptance.

This pilot analysis of MH provider assessments suggests that many uninsured patients suffer from depression and post-traumatic stress disorder; thus, the RIFC may tailor evaluation and services to this reality. The patient population of the RIFC is comprised of many immigrant female patients who may have left children behind in their native countries or suffered from physical and or sexual abuse, in addition to the cultural and linguistic isolation of immigration. Drug and alcohol abuse are not prevalent in this population. These results are consistent with observations that drug or alcohol use are uncommon in recently immigrated Hispanic women.¹⁰ The relative absence of drug and alcohol problems may also be due to our small sample size. The prevalence of co-morbid medical conditions and complaints of chronic pain mirror the findings of others concerning mental

Figure 3



health and the uninsured.¹¹ During psychiatric evaluations, 13 of 29 patients were found to have active suicidal ideation. This data must be confirmed by a larger sample and psychiatric follow up. This finding is especially striking given that these patients would not otherwise be receiving mental health treatment and are essentially invisible to our current health system.

These clinically important, preliminary results help RIFC to refine its program structure and to determine the emergent and the long-term resources needed to treat a diverse population. Our evaluation mechanism, which needs to be confirmed clinically by consultants, selectively detects the severe end of the spectrum of mental health needs. These data have vital implications for management of suicidal ideation and for the management of mental illness in a culturally and linguistically isolated population. Further refinements will help to identify and treat those with less severe mental health problems and will help to address the socio-legal issues faced by many of our patients.

This pilot study has several limitations. Our sample size is small and may not be representative of our entire uninsured population or cohorts of uninsured adults in other settings. A disproportionate number of recently immigrated Hispanic women may skewing the data in terms of diagnoses. The PHQ-9 assessment form is sensitive for diagnosing depression, but is not designed to screen for other diagnoses, which may thus be under-represented. ETOH and drug abuse are uncommon in the population studied. Further data are needed to determine whether this finding remains significant or, less likely, reflects failure of our assessment tools to capture these disorders. Since patients

are referred from a PCP gatekeeper, some patients with less severe illness continue to be followed exclusively by their PCP without specialized service intervention. Under-reporting bias may select out for the severe end of the spectrum of psychiatric diagnoses. More US-born patients are referred for mental health care than are found in our general clinic population, thus suggesting that the Clinic has a higher percentage of mentally-ill US-born patients or PCPs may be less adept at perceiving mental illness in immigrant populations.

CONCLUSION

Access to care for uninsured adults with MH problems is sub-optimal. Our pilot project needs to be validated and expanded by further research, design of protocols for complex care, and assessment of objective outcome measures(including medication use, return to work, and health-related quality of life) Despite its limitations and focus on depression, our data revealing the severity and types of mental illness which affect a diverse, uninsured urban population. The RIFC experience underscores the need for culturally sensitive mental health resources for the uninsured, because the RIFC is able to treat only 1400 patients out of nearly 90,000 uninsured persons in Rhode Island.

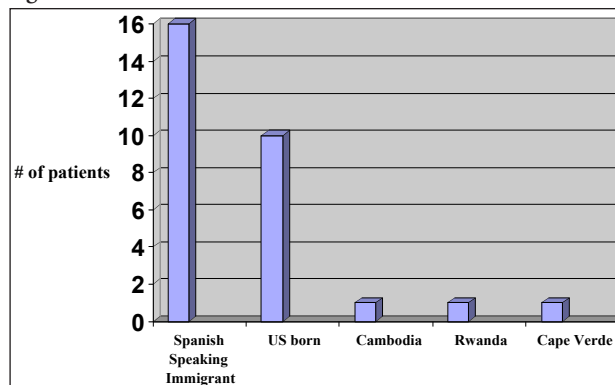
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Figure 4



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THE DOCTOR DILEMMA: UNDERSTANDING THE HEALTH WORKFORCE IN RHODE ISLAND

PATRICIA A. NOLAN, MD, MPH, AND TILAK K. VERMA, MD, MBA

The physician workforce is a critical factor in the availability, cost and quality of health care. Changes in the practice of medicine in Rhode Island affect the quality of patient care we deliver, the amount of work we do, our frustration and satisfaction, practice location decisions, and the size and nature of the physician workforce in our state. Understanding physician workforce trends will help us develop strategies for filling gaps in the supply of physician care.

In 2002, **Blue Cross Blue Shield of Rhode Island (BCBSRI)** studied health care supply and demand, addressing the adequacy of health care systems in Rhode Island to meet future demands for care as the population ages. The studies showed that the patterns of utilization of health services in Rhode Island tended to be higher than in other states, and that the physician workforce is larger on a per capita basis. The physician workforce findings, although an important first step, raised many concerns and left much unanswered.

The Rhode Island SHAPE Foundation was formed in February, 2004, to address the supply and demand for health care services in Rhode Island. Funded by a start-up grant from BCBSRI, the Foundation is an independent non-profit organization "committed to undertaking quality research studies with complete independence, objectivity, and fairness to all elements of the healthcare community and for all Rhode Island citizens."¹ The Foundation uses a broadly representative health care advisory committee to assist the board in defining needed studies and completing reports and recommendations. **Subject Matter Expert (SME)** panels oversee each of the studies, assist in preparation of the reports, and develop recommendations for the Advisory Committee and Board.

The SHAPE Foundation identified four areas of concern from the 2002 studies: a need for policies to enhance and sustain the nursing workforce, to

clarify the dynamics of the physician workforce, to project hospital care supply and demand more adequately, and to understand the supply, demand and gaps of the behavioral health care system. All four studies have been completed, and reports and supporting data are available from the SHAPE Foundation.²

The Foundation, in consultation with the advisory committee, determined that the physician workforce findings, solely based on state licensure data, lacked data on the dynamics of the workforce and on patients' demand for physician services. BCBSRI agreed to fund further study of the physician workforce. SHAPE selected **Boos, Allen, Hamilton (BAH)** as the primary contractor for the study, and a SME Panel was formed to oversee the contractor's work. The SME Panel approved surveys to collect data on the demand for and supply of physician services to project future gaps, and explored the sensitivity of the projected gaps to varying parameters in future supply and demand. The physician workforce study/report was released in the fall of 2004.³

METHODS

BAH conducted the physician workforce study under contract with the SHAPE Foundation. The SME Panel worked with BAH to determine the scope of the study and to develop the survey instruments. Primary data on physician numbers, work activities, work satisfaction and perceived demands as well as patient data were collected through survey research conducted by Harris Interactive and from licensure data of the Rhode Island Department of Health. Utilization data were derived primarily from claims data gathered in 2002 from BCBSRI and Center for Medicare and Medicaid Services.

The physician survey was mailed to all 4,015 physicians licensed by the state of Rhode Island, regardless of actual business or mailing address. The Rhode Island Medical Society,

various specialty societies and other physician groups encouraged physicians to respond. An honorarium of \$85 was offered for completing the survey. A five-contact strategy was used and an option for on-line response was available. 2,772 usable responses were received, a 69% response rate.

The patient survey (English only) was mailed to a random sample of 12,000 Rhode Island residents, based on US census data. 2,904 responses were received, a 24.2% response rate. Respondents were reflective of the age and gender distribution of the adult population.

Interviews were conducted with 29 opinion leaders, including residency directors and health care executives.

Five focus groups were recruited to reflect a cross-section of physicians, with one specifically addressing institutional needs for physicians (hospitals, specialty practice groups and large group practices) and one addressing physicians-in-training.

The SME Panel analyzed and discussed the data extensively. The future supply of physician services was projected using data from all sources on in-migration, retention, out-migration and retirement. Future demand was projected using population projections and current utilization patterns. The SME Panel and the BAH team used data from different sources to triangulate on estimates and create best estimates of future gaps, assuming no changes in current patterns.

The high response rates provided quality data on many elements. Two problems with the data are important in understanding the analysis:

*Due to the way questions were asked, Rhode Island data on the time spent on-call each week are not comparable to national data. The effect of the discrepancy is to overstate hours per week in Rhode Island compared to the US, but the size of discrepancy is unknowable.

*Because licensure data on specialty practice are not retrievable electronically, the denominators for specialties are unknown. The only usable denominators are the numbers of respondents in a specialty. It is not possible to correct for differential response rates among specialties.

RESULTS

1. There are approximately 3000 physicians in practice in Rhode Island, not including residents and fellows. Seventy-five percent of physicians licensed in the state practice here, while 450 practice elsewhere, and 500 are not practicing or did not provide information. About 2,550 physicians practice exclusively in Rhode Island; 450 practice in Rhode Island and other states, mostly CT and MA.

2. On average, Rhode Island physicians spend about the same amount of time on patient care activities as physicians elsewhere in the US, 54 hours per week in Rhode Island vs. 52.8 hour per week in the US. Primary care physicians in Rhode Island see 10-20% more patient visits than the average US primary care physician but the time spent on patient care is similar. Physicians in Rhode Island spend an average of 10.3 hours per week on other medical activities, while the US average is 6 hours per week. More than one-half of Rhode Island physicians spend time in teaching and/or research.

3. In the five years 1999-2003, an average of 291 physicians entered practice in Rhode Island and an average of 238 left practice in the state -- a net increase of 1.3% per year. The dynamics of the physician supply differ among specialties:

- Adult and pediatric primary care, gastroenterology, ophthalmology, other surgical specialties, emergency medicine, diagnostic radiology, anesthesiology, and pathology showed net increases;
- Cardiology, neurology, general surgery, orthopedics, ob-gyn primary care, and other radiology showed no net change;
- Dermatology, other medical specialties, pediatric specialties, psychiatry, otolaryngology, and

urology showed net declines.

4. In the future, the number of physicians leaving practice in Rhode Island could exceed the number entering practice. Survey responses showed that 17% of current physicians plan to practice elsewhere within the next three years, while 9% plan to retire. The medical subspecialties and surgical specialties are most dynamic.

5. Physicians planning to leave the state cited relatively low reimbursement rates (82%) and high malpractice insurance costs (48%) as primary reasons. Other reasons included family ties elsewhere (21%), family wants to move (18%) and excessive regulatory requirements (18%).

6. Utilization of physician services in Rhode Island is high in comparison to the US pattern.⁴ Rhode Islanders report 4.3 visits to a physician office per year, compared to 3.7 visits for the Northeastern US and 3.1 for the US.

7. Access to physician services was measured by asking whether physicians were accepting new patients and how many additional patient visits could be seen in a week. Responses varied among specialties. More than one-third of psychiatrists and family practitioners reported they were not accepting new patients, as did 28% of general internists and 24% of dermatologists. Only 14% of cardiologists and 13% of primary care pediatricians were not accepting new patients. Ability to accommodate additional patient visits in a week ranged from 5% for dermatologists and 7% for urologists, radiologists and psychiatrists to 16% for primary care pediatricians, 19% for general surgeons and 26% for anesthesiologists. Using a demand-side gap analysis, the BAH team calculated a system-wide shortage of radiology capacity at the present time.

8. The demands for physician services will increase because the high-utilizing age groups, primarily the elderly and the very elderly, will grow. An increase of 32% in the population over 65 is projected by 2020. If current utilization patterns are maintained by this age group, the overall demand for physician services will increase by 10 to 20% in the next fifteen years.⁵

9. Using physician survey data on future practice plans and projecting

minimal changes in utilization factors such as health insurance coverage, practice organization and uses of technology, gaps in the availability of medical subspecialty and surgical specialty physicians are likely. The analysis was conducted by grouping physicians into six practice groups: primary care physicians, medical sub-specialists, surgical specialists, obstetricians/gynecologists, psychiatrists and other specialists. In worst-case scenarios based on physician practice plans, obstetrics/gynecology, psychiatry and other specialties would also see sizeable gaps in supply.

DISCUSSION

Our projections indicate risks of physician workforce decline in the immediate future, unlike the findings of the first SHAPE study using only licensure data. Teaching, research and higher than average utilization are being accommodated, but some specialties have little capacity for new patients and long waits for routine appointments. Physicians are "burning out" and plan to leave the state or retire early. The primary factors in planning to leave practice are low reimbursement and high, unpredictable malpractice premiums. Family and personal reasons play a smaller role.

The SME Panel identified reforming physician reimbursement and reforming malpractice laws as vitally important in stabilizing the physician workforce in Rhode Island. Longer term strategies identified were managing the use of physician services, increasing emphasis on prevention, and changing aspects of physician practice architecture.

Reforming reimbursement to achieve regional parity in compensation could dissuade about half of physicians from leaving the state. Reimbursement reform which also moves the use of physician services toward the national averages may reduce overall medical costs.

It is unclear why both physician and emergency room visits per capita exceed national averages. Patient factors such as insurance coverage, high expectations about immediate access to ambulatory care, and seeking care from multiple physicians for chronic

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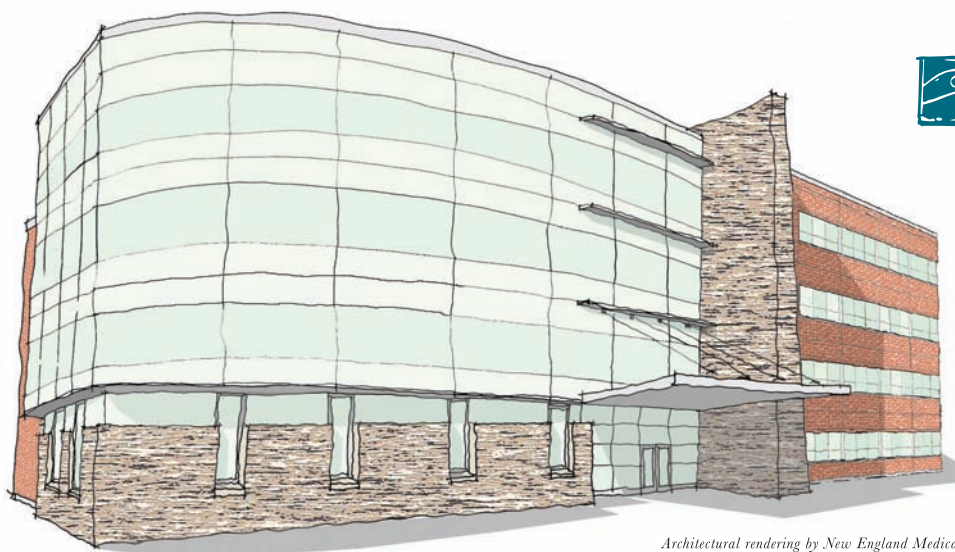


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Coastal Medical, Inc., the state's largest primary care group practice, announces plans to build a 50,000 sq ft building in East Providence, with ground breaking scheduled this fall. With a mission to advance the highest quality patient-centered care through accessible, accountable and cost efficient services, Coastal is creating a medical facility to better serve the healthcare needs of the community at large. Approximately half of the space will be occupied by Coastal's Pediatric and Internal Medicine practices now located on Waterman Street and North Main Street in Providence.

This attractive glass, brick and stone structure is designed by East Providence based architectural firm, New England Medical Design. Located just minutes from the East Side and the hospital campuses the site offers easy highway access and plenty of parking.

Those interested in leasing space are encouraged to call George W. Babcock, Executive Vice President of Coastal Medical at 401-421-4000

10 Davol Square Suite 400 Providence, Rhode Island 02903 (401) 421-4000 (401) 453-3258 fax

health problems may all play roles. Physician practices, including referral patterns, office hours, access to patient information, and expectations about the work per visit, also influence the number of visits to physicians per capita.

Malpractice reform specifically aimed at stabilizing malpractice insurance rates could also reduce the number of physicians who leave the state or retire early. Many physicians, citing factors such as a lack of caps on non-economic damages, long delays in time to trial, and an onerous pre-judgment interest rate, share the view that "Liability reform is long overdue.... to build a system of excellence, we will need to minimize the negative impact of [malpractice] liability."⁶

Members of the SME Panel pointed out "that the long-term viability of our health care system depends on the willingness of all of the stakeholders – physician, patients, and payers – to change how they operate within that system"^b and that we could restructure physician practice "so we had a strong base of multidisciplinary primary care practices that reduced our dependence on emergency rooms..."⁸

CONCLUSION

This study shows the fragility of the physician workforce capacity in the face of growing demand from an aging population. We cannot assume that the size of the physician workforce must grow to meet demand. A cohesive statewide strategy that addresses utilization and practice patterns as well as sustains the physician workforce is essential. Medicine and health care can learn from business and industry. Michael Porter in the *Harvard Business Review* concludes that in US health care, "Costs are high and rising, despite efforts to reduce them, and these rising costs cannot be explained by improvements in quality". Furthermore, "There are wide and inexplicable differences in cost and quality among providers across geographic areas. Moreover, the differences in quality of care last long periods because the adoption of best practices is extraordinarily slow."⁹

Collaboration among business, industry, employers and health care

providers is critical. The first step is to achieve transparency in pricing and billing practices. This will benefit providers, patients and payers. Physicians and hospitals need to play leadership roles in avoiding waste and duplication that result in fragmented care. A major effort to improve the information systems that support physicians' practices has begun under the auspices of the RI Department of Health, the RI Quality Institute, and Quality Partners of Rhode Island through a contract with the federal Agency for Health Care Research and Quality. Information about trends in the cost of health care and in the physician workforce needs to be monitored to determine whether changes in policies and practice are having the desired impacts.

The data from the physician and public surveys are available for further analysis through SHAPE. Careful consideration of collecting critical items on the physician workforce through the licensure activities of the Board of Medical Licensure and Discipline should be given, as this would allow on-going evaluation of the workforce and the effects of policies and other investments.

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THE HEALTH OF RHODE ISLAND ADULTS, 2001: RESULTS FROM THE RHODE ISLAND HEALTH INTERVIEW SURVEY

ROGER C. AVERY, PHD, DENNIS P. HOGAN, PHD, MARYHELEN D'OTTAVI, AM

This report about the health of Rhode Island adults in 2001 uses data from the most recent Rhode Island Health Interview Survey. The report examines the prevalence of chronic diseases and disability among adults in Rhode Island, the kind of medical care they receive, and the association of chronic diseases with disability. The paper highlights socioeconomic and racial disparities in health and disability. (Socioeconomic status is measured by income and city or suburban residence; we do not use income as a predictor of health outcomes since poverty itself is often the result of poor health or disability.)

The Rhode Island Health Interview Survey has been conducted by the Office of Health Statistics at the Rhode Island Department of Health approximately every five years since 1972. Topics include health status, access to health care and utilization of healthcare services, health risk behaviors, health insurance coverage, and demographics. In 2001 it was conducted as a telephone survey of a representative sample of Rhode Island households, designed to collect information on all members of those sample households. The sample represents the total non-institutional Rhode Island population living in the state "most of the year" and residing in telephone-equipped households. In 2001, a total of 2,600 interviews were conducted in households, containing 6,877 residents. This report is based on the sample of 5,010 adults age 18 and over.

Persons are classified as having a chronic medical condition when they *have been told by a doctor* that they have arthritis, asthma or diabetes. Persons with a *physical, mental, or emotional problem* who (a) need help with any personal care need (eating, bathing, dressing, or getting around inside the house) are classified as having a limitation in an **activity of daily living (ADL)**. Those who (b) need help with handling routine needs (everyday household chores, doing necessary business, shopping, or

getting around for other purposes) are classified as having a limitation in an **instrumental activity of daily living (IADL)**. Those who (c) now are not able to work at a job are classified as having a work limitation. Persons are classified as having a mobility limitation if they have difficulty walking without special equipment. Persons are classified as having a cognitive limitation if they have difficulty remembering or confusion.

"THE RELATIVELY POOR EDUCATION OF THE PEOPLE OF RHODE ISLAND IS A BARRIER TO THE SOCIAL AND ECONOMIC DEVELOPMENT OF THE STATE, AS WELL AS TO THE HEALTH AND SOCIOECONOMIC WELL-BEING OF ITS CITIZENS."

CHRONIC MEDICAL CONDITIONS

We present information on the number of Rhode Island adults with each medical condition. (Table 1) Since these estimates are based on a sample survey, we provide the high and low values, represent the 95% confidence intervals; that is, we are 95% certain based on the characteristics of the RI HIS sample that the true population statistic lies between the high and low values. Arthritis is the most common medical condition, afflicting 15% (116,500 persons) of all Rhode Island adults. About 59,700 (8%) Rhode Island adults report they have asthma, and 46,600 (6%), diabetes. These illnesses are associated with high rates of disability (27% of persons with asthma and 37 % of those with arthritis have a disability).

Does the occurrence of these illnesses differ by race, level of education, and residence in a core city (Providence, Central Falls, Pawtucket, Woonsocket, and Newport)? Table 2 provides the results of a statistical model (binomial logistic regression) for the occurrence of outcomes, with the results presented as the relative odds for each group. These models control for age and sex since these factors are known to be associated with the likelihood of each disease, and the population groups vary in their distributions on age and sex. Controlling for education and place of residence, African Americans do not have a higher likelihood than whites of having any of the chronic medical conditions. While higher rates of diabetes in the African American population appear in the RI HIS, they do not reach statistical significance. (Higher rates of diabetes among African-Americans are well-documented in clinical studies). Education is strongly associated with arthritis and diabetes. Persons with college and high school education are about equally likely to have at least one of the conditions; those with less than a high school education are 2.3 times more likely to have at least one disability. Residence in a core city does not have a consistent impact.

HEALTH STATUS

Responses of fair or poor (self-reported) health status are considered indicators of inferior health. (Table 1) Poor or fair health status is one of the best predictors of hospitalization, the need for long-term care, and mortality. By this standard 25% of adults with asthma report they are in inferior health, 31% of those with arthritis are in inferior health, and 49% of those with diabetes have inferior health.

Are there racial and socioeconomic disparities in the likelihood that a person is in poor or fair health? A bivariate logistic regression model addressed these questions. (Table 3) Those with arthritis are 1.9 times more likely to report poor or fair health, those

Table 1. Medical Conditions of Rhode Island Adults, 2001

Medical Condition	Population Count	Percent of Population	Confidence Interval	
			Lower limit	Upper limit
Arthritis	116,500	15.3%	14.3%	16.3%
of those with arthritis				
-has a disability	42,900	36.9%	33.5%	40.3%
-health status				
-excellent or very good	41,200	35.4%	32.1%	38.9%
-good	39,000	33.6%	30.3%	37.0%
-fair or poor	36,000	31.0%	27.8%	34.4%
Asthma	59,700	7.8%	7.1%	8.6%
of those with asthma				
-has a disability	16,300	27.4%	23.1%	31.9%
-health status				
-excellent or very good	29,900	45.2%	40.4%	50.2%
-good	17,600	29.5%	25.2%	34.2%
-fair or poor	15,000	25.3%	21.3%	29.9%
Diabetes	46,600	6.1%	5.5%	6.8%
of those with diabetes				
-has a disability	17,400	37.4%	32.0%	42.8%
-health status				
-excellent or very good	10,300	22.1%	17.8%	27.1%
-good	13,400	28.9%	24.1%	34.2%
-fair or poor	22,700	48.9%	43.4%	54.5%

Source: Rhode Island Health Survey 2001

with asthma are 2.6 times more likely to report fair or poor health, those with a mobility limitation are 4.1 times more likely to report poor or fair health, and those with diabetes are 5.6 times more likely to do so. There is a very strong association between education and inferior health status. Persons with a high school education are 1.6 times more likely to have inferior health status compared to those with a college education. Persons with less than a high school education are more than twice as likely as those with a high school education and are 3.6 times more likely than the college educated to be in fair or poor health. These differences take into account the lower education level of older adults, and are thus estimates of the actual impact of education on health. Net of the education differences, race and place of residence do not affect health status.

This survey provides broad estimates of the treatments used by persons with asthma and diabetes, which is a disadvantage relative to the more precise clinical records, but survey information does capture the experiences of persons with the disease who are not receiving medical treatment (tabulations not shown). About 60% of persons with asthma use a maintenance inhaler and about 25% report the use of a rescue inhaler at least once a week. About one half of diabetics report they test their blood sugar at least once a day, one half use pills and one quarter use

insulin to control their diabetes.

HEALTH CARE ACCESS

Health insurance (either public or private) is a key determinant of access to treatments. Controlling for age, the type of medical condition is not associated with insurance coverage. (Table 3) Residents of central urban areas are more than twice as likely as those in less urban towns to lack health insurance. Education is the major disparity in insurance coverage in Rhode Island. Compared to those with a college education, persons with a high school education are 2.5 times more likely to lack health insurance,

and those with less than a high school education are nearly four times more likely to lack insurance coverage. There are no racial disparities once education and urban residence are taken into account.

WORK DISABILITY

Persons with asthma, arthritis and diabetes are 2.5 times more likely to report a health-related work limitation (Table 3), compared to persons without each medical condition. Persons with mobility and cognitive limitations and those with IADLs are at least five times more likely to report a work limitation. These are true estimates of the effects of chronic health and disability on the ability of Rhode Island adults to work, since they control for age and socioeconomic status. Persons with less than a high school education are almost 50% more likely than better-educated persons to be limited in their ability to work. This probably is associated with the more demanding physical labor done by persons with less than a high school education.

CONCLUSIONS

This report estimates the number and percent of persons with asthma, arthritis, diabetes, and disabilities (ADL, IADL, mobility and cognitive limitations). Compared to results from the 1990 and 1996 Rhode Island Health Interview Surveys, there are no obvious trends in the prevalence of these conditions or disabilities. (See

Table 2. Disparities in the Medical Conditions of Rhode Island Adults, 2001

Predictor Variables	Arthritis Odds Ratio	Asthma Odds Ratio	Diabetes Odds Ratio	One or more Disabilities Odds Ratio
Core city				
Not core city	1.00	1.00	1.00	1.00
Lives in core city	<i>0.78</i>	1.11	<i>1.43</i>	<i>1.54</i>
Race				
Non-black	1.00	1.00	1.00	1.00
Black	0.79	1.08	1.59	0.99
Education				
Post high school	1.00	1.00	1.00	1.00
High School	<i>1.39</i>	0.97	1.16	1.27
Less than HS	<i>1.62</i>	1.10	<i>1.38</i>	2.29
Age				
18-44	1.00	1.00	1.00	1.00
45-64	<i>4.08</i>	1.01	<i>4.20</i>	<i>2.11</i>
65+	<i>11.49</i>	<i>0.60</i>	<i>8.23</i>	<i>4.18</i>
Sex				
Male	1.00	1.00	1.00	1.00
Female	<i>1.66</i>	<i>1.79</i>	0.98	<i>1.71</i>

Source: Rhode Island Health Survey 2001

Notes: Net odds ratios from bivariate logistic equations shown.

Coefficient = 1.00 indicates reference category (the baseline RATE); coefficients shown are multipliers that show the rate associated with each predictor variable.

Coefficients in italics statistically significant (p<.05)

Table 3. Disparities in Access to Care and Health Outcomes of Rhode Island Adults, 2001

Model Predicting Likelihood of					
Being in Fair or Poor Health		Lack of Health Insurance		Having a Work Limitation	
Predictor Variables	Odds Ratio	Predictor Variables	Odds Ratio	Predictor Variables	Odds Ratio
Asthma	2.582	Asthma	0.876	Asthma	3.661
Arthritis	1.932	Arthritis	0.070	Arthritis	2.709
Diabetes	5.560	Diabetes	0.585	Diabetes	2.537
ADLS	1.526	ADLS	1.914	ADLS	1.045
IADLS	3.101	IADLS	0.577	IADLS	8.087
Mobility	4.190	Mobility	0.453	Mobility	6.354
Confusion	3.151	Confusion	0.781	Confusion	5.102
Core city		Core city		Core city	
Not core city	1.000	Not core city	1.000	Not core city	1.000
Lives in core city	1.113	Lives in core city	2.199	Lives in core city	0.919
Race		Race		Race	
Non-black	1.000	Non-black	1.000	Non-black	1.000
Black	0.926	Black	1.176	Black	1.167
Education		Education		Education	
Post high school	1.000	Post high school	1.000	Post high school	1.000
High School	1.563	High School	2.529	High School	1.051
Less than HS	3.559	Less than HS	3.857	Less than HS	1.475
Age		Age		Age	
18-44	1.000	18-44	1.000	18-44	1.000
45-64	1.868	45-64	0.706	45-64	2.173
65+	1.638	65+	0.190	65+	0.835
Sex		Sex		Sex	
Male	1.000	Male	1.000	Male	1.000
Female	0.870	Female	0.710	Female	0.956

Source: Rhode Island Health Survey 2001

Notes: Net odds ratios from bivariate logistic equations shown.

Coefficient = 1.00 indicates reference category (the baseline RATE); coefficients shown are multipliers that show the rate associated with each predictor variable.

Coefficients in italics statistically significant ($p < .05$)

Health Status, Behavioral Health Risks, Health Care Access, and Health Care Utilization among Rhode Islanders, 1990 and 1996, by Hanna H. Kim, Jana E. Hesser, and Jay S. Buechner, Office of Health Statistics, Rhode Island Department of Health, March 2000.) Many Rhode Island adults are afflicted by arthritis (15%), asthma (8%), and diabetes (6%). Health insurance coverage for persons with chronic medical conditions and disabilities does not differ from the state average (9%) for persons with health insurance

This report investigated systematic socioeconomic disparities in the health and disability of Rhode Island residents. Persons with less than a high school education are far more likely than those who are better educated to have arthritis, diabetes, or a work limitation. They are nearly four times more likely to be in poor or fair health and to lack health insurance. The disadvantage of persons with a high school education relative to those with college education are about half as large, still a striking difference. Residents in one of the central cities in Rhode Island are more likely to have diabetes and to lack health insurance, but the disparities are neither

as large nor as persistent as for those with low education. Overall, there are observed racial differences in the health and disabilities, with African Americans generally faring worse. But once their greater likelihood of having less than a high school education is taken into account, there are no race differences.

In Rhode Island, as nationwide, education is a crucial factor in the health, disability, and well-being of its citizens. Persons with less than a high school education have access to fewer economic resources, have less healthy life styles, and are exposed to social and community environments in which health risks are greater. The poorly educated are less likely to recognize the onset of a disease such as diabetes, and are likely to delay medical care. The care they receive may be of lesser quality than that received by the better educated, and they often have greater difficulties complying with recommended treatments and life style changes. Partly as a result, they more often experience disability. These health disparities by education overwhelm all other sources of inequality in the health of the Rhode Island population. The relatively poor education of the

people of Rhode Island is a barrier to the social and economic development of the state, as well as to the health and socioeconomic well-being of its citizens. Efforts to improve the system of high school education in the state, and to promote technical or college education among high school graduates, will have longer run payoffs for the health of Rhode Island adults, and immediate payoff in terms of the improved health and better life chances of their children.

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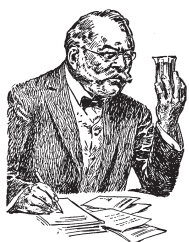
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ADVANCES IN PHARMACOLOGY

SYSTEMIC CORTICOSTEROIDS AND COPD EXACERBATIONS

Tracey L. Mersfelder, PharmD., BCPS

Chronic obstructive pulmonary disorder (COPD) is a frequent cause of morbidity and mortality worldwide. Over 6% of people in the United States, aged 25-75 years, have mild COPD; almost 7% have moderate COPD, resulting in a costly burden. One reason for the excessive cost of care is due to treatment of COPD exacerbations.¹ Glucocorticoids are recommended as part of the regimen for COPD exacerbations. The appropriate dose and route of administration that should be administered to patients is a frequent discussion on teaching rounds. This review covers the main studies which evaluate the use of systemic glucocorticoids in acute COPD exacerbations.

A study by Niewoehner and colleagues² is generally the most well known because it was a larger trial that included 271 inpatients. It has been referred to as the SCOPE trial and was a randomized, double-blind, placebo-controlled trial with three treatment arms. Group one was administered intravenous methylprednisolone 125 mg every 6 hours for 72 hours, followed by oral eight week taper of prednisone; group two received methylprednisolone at the same dose and duration as group one but was then administered a two week oral prednisone taper followed by six weeks of placebo; group three received intravenous and oral placebo for eight weeks. The objective of this study was to evaluate the efficacy of systemic glucocorticoids for COPD exacerbations. Treatment failures were defined as death from any cause, the need for intubation or mechanical ventilation, readmission due to COPD, or intensification of pharmacologic therapy. Patients had an average FEV₁ of 750 to 785 mL and about 70% had been hospitalized within the previous two years for a COPD exacerbation. Results demonstrated that glucocorticoids reduced treatment failures at 30 and 90 days ($p < 0.04$) but not at 180 days ($p = 0.58$). Treatment

failures between groups one and two were not significant. The average length of hospitalization decreased from 9.7 days to 8.5 days. FEV₁ improved in the glucocorticoid groups compared to placebo by day one ($p < 0.05$); however, there was no difference by week two. Hyperglycemia was more frequent in the glucocorticoid group (15%) compared to placebo (4%) ($p = 0.002$).

**“EVEN THOUGH THE
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AND ROUTE.”**

Davies and colleagues³ also studied patients with COPD exacerbations who were admitted to the hospital. This was a randomized, double-blind, placebo-controlled trial with two treatment arms that included a total of 50 patients. The first arm received 30 mg of oral prednisolone daily for 14 days and the second arm received placebo. One of the objectives was to evaluate hospital length of stay. Patients had an average FEV₁ of 700 mL after receiving bronchodilators. Change in FEV₁ was also measured in this study. Results showed a decrease length of stay in patients treated with glucocorticoids. The average number of hospital days for the treatment arm was seven compared to nine for placebo ($p = 0.027$). FEV₁ improvement was greater in the treatment arm through day five ($p < 0.0001$). Hyperglycemia developed in six patients receiving prednisolone compared to none in the

placebo group.

A third inpatient treatment study was preformed by Albert and colleagues⁴. This randomized, double-blind, placebo-controlled trial evaluated intravenous methylprednisolone 0.5 mg/kg every six hours for 72 hours compared to placebo. Forty-four patients with chronic bronchitis and severe airflow obstruction were studied. One objective of this trial was to evaluate spirometry after 72 hours. Patients had a FEV₁ between 673 and 719 mL at baseline on average after receiving bronchodilators. Length of hospital stay was not evaluated. Results showed an improvement in the treatment group of FEV₁ ($p < 0.001$) at 72 hours. Blood glucose levels were higher in the methylprednisolone group compared to placebo by an average of 25 mg/dL ($p < 0.05$).

For outpatient treatment, Aaron and colleagues⁵ studied 147 patients who presented to the emergency room for COPD exacerbation. This was a randomized, double-blind, placebo-controlled trial with two treatment arms. The first group received 40 mg of oral prednisone daily for 10 days and group two received placebo. The author's main objective was relapse of COPD exacerbations at 30 days. Improvement of FEV₁ was also measured. Patients enrolled in the study had an average FEV₁ of 1000 mL at baseline. Results showed that there was a decrease in relapse at 30 days for patients treated with prednisone ($p = 0.05$). There was also an increase in the time to the next relapse compared to placebo ($p = 0.04$). The mean FEV₁ demonstrated a greater improvement in the treatment group at 10 days vs. placebo. Serum glucose was not measured in this trial.

Thompson and colleagues⁶ also studied patients treated for COPD as outpatients. This randomized, double-blind, placebo-controlled trial evaluated the efficacy of oral prednisone 60 mg for 3 days, 40 mg for 3 days, then 20 mg for 3 days compared to

placebo. Only twenty-seven patients were enrolled. The objective was to evaluate the efficacy of glucocorticoids for outpatient treatment of COPD exacerbations. Patients had an average FEV₁ of 1300 mL at baseline. Results showed a decreased in failure rates of 57% in the placebo group compared to 0% in the glucocorticoid group (p=0.002). Treatment failure was defined as hospitalization for decreased respiratory status or no improvement in dyspnea requiring further treatment. FEV₁ improvement was better in the prednisone group on days three and 10 compared to placebo. Serum glucose was not measured.

The cited studies are referenced in the ATS/ERS position paper to support their recommendation for systemic glucocorticoids in patients with acute COPD exacerbations.¹ Other studies have evaluated the effects of systemic glucocorticoids in COPD. However, a systematic review⁷ of these trials determined that their quality assessment was poor, therefore will not be reviewed here.

Even though the ATS/ERS guidelines recommend treatment of acute COPD exacerbations with

systemic glucocorticoids, the difficulty is in choosing the appropriate dose and route. Patients admitted to the hospital for a COPD exacerbation, with a baseline FEV₁ of 700 mL, should receive oral glucocorticoids if tolerated. Prednisone 30 mg daily for 14 days would be appropriate. If patients can not tolerate oral medications, intravenous methylprednisolone 125 mg every six hours followed by a two week taper of prednisone has shown to decrease length of stay. Patients with a FEV₁ of greater than 1000 mL can be treated as outpatients, 40 to 60 mg oral prednisone with or without a taper for nine to ten days based on the two mentioned studies. It is important to monitor patient's blood sugars while they are receiving systemic glucocorticoids.

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Long before the endocrinologists and geriatricians specified the way-stations in the human journey from birth to death, Shakespeare had provided us with a most memorable set of definitions of the seven states of life. Thus, the seventh stage [*As You Like It*: II, vii]:

With spectacles on nose and pouch on side;
His youthful hose, well sav'd, a world too wide
For his shrunk shank; and his big manly voice,
Tuning again toward childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange eventful history,
Is second childishness, and mere oblivion,
Sans teeth, sans eyes, sans taste, sans everything.

Life's odyssey begins with infancy, a

word derived from the Latin, *infantem*, which in turn is from the Latin *fantis*, meaning to speak, joined with the negative prefix, *in-*, thus rendering the word defining those who cannot speak. The daughters of the kings of Spain and Portugal were called *infanta* and the sons, *infante*, although there is little historic data to suggest that they were aphasic. And through an inexplicable etymologic pathway, the English word, infantry, is also a descendant of the Latin, *infantem*. A remotely cognate Greek word is the origin of the English word, fantasy.

The word, adolescent, is derived from the Latin, *adolescens*, meaning to grow up. And adult is from the Latin *adultus*, meaning grown up. Adultery and adulterate, despite the many jokes, are derived not from *adultus* but from the Latin prefix *ad-* [meaning toward

or addition to], and the Latin *alterare*, [meaning to change or corrupt.]

Puberty stems from the Latin *pubertas*, meaning capable of procreation and is additionally related to the word, pubic, meaning the genital region or the body hair symbolic of sexual maturity. And the word, maturity, stems from the Latin, *maturis*, meaning ripe or awakening. The goddess of dawn in the Roman pantheon is named *Matuta*. Menopause is the descendant of two Greek words, one, *meno-* signifying the moon or the month, and *pauses*, meaning to cease.

Senior, from the Latin, *senis*, meaning old, is the origin of such words as senor, monsieur and sire. And a related Latin word, *senilis*, forms the basis for such English words as senile, senate and seneschal.

STANLEY M. ARONSON, MD



JUDICIAL DIAGNOSIS

'CONSCIENCE' VS. CARE

HOW REFUSAL CLAUSES ARE RESHAPING THE RIGHTS REVOLUTION

JACOB M. APPEL, JD

Ever since the 1965 *Griswold vs. Connecticut* decision, upholding the rights of married couples to use contraceptives, the United States Supreme Court has expanded constitutional protections for patients in a range of medically-related areas from abortion to end-of-life decision making.¹ State courts have often extended additional rights on state constitutional grounds.² These new liberties have created an ethical challenge for many health care professionals and institutional providers who remain committed to serving the public yet morally opposed to specific medical procedures.

Most recently, public attention has focused upon pharmacists in at least two dozen states who refuse to fill prescriptions for birth control and "morning after" pills; some of these pharmacists are also unwilling to refer patients elsewhere; and a few have been charged with confiscating prescriptions. This phenomenon became so widespread in rural areas that Illinois Governor Rod Blagojevich issued an emergency order compelling druggists to dispense contraceptives even if they believe such drugs to be immoral.³ In contrast, Mississippi and Georgia joined South Dakota and Arkansas in passing legislation that allows pharmacists to refuse to fill such prescriptions.⁴ The local political battles over these "refusal clauses" (also called "conscience clauses" by defenders or "abandonment laws" by opponents)⁵ are the backdrop for a larger national confrontation that may increasingly pit the religious practices of health care providers against the medical needs of their patients.

FROM CHURCH TO THE STATES

The first refusal legislation applied solely to abortion and sterilization procedures and was enacted by Congress within weeks of the Supreme Court's decision in

Roe v. Wade. This rider to the Health Programs Extension Act of 1973⁶ was sponsored by Senator Frank Church, a liberal Idaho Democrat, in response to a federal court decision that required a Montana hospital operated by the Sisters of Charity of Leavenworth to provide tubal ligations against the order's religious principles.⁷ The Church Amendment passed the Senate by a vote of 92-1.⁸ It applied to private hospitals receiving federal funds

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under the Hill-Burton Act, Medicare, Medicaid and similar programs, and exempted these institutions from any requirement to provide abortions or sterilizations when they objected on "the basis of religious beliefs or moral convictions." Nearly every state had enacted similar legislation by the end of the decade—often with the support of legislators who otherwise supported abortion rights. Even Supreme Court Justice Harry Blackmun, the author of *Roe vs. Wade*, called such clauses "appropriate protection" for physicians and denominational hospitals.⁹

In New Jersey, however, a heated battle emerged over such exemptions—both in the state house and in the courts. State Senator Joseph L. McGahn, a physician from Atlantic City, joined forces with the organization Right-to-Life Inc., to drive a refusal bill through

the legislature in late 1974; pro-choice Democratic Governor Brendan Byrne, while noting the bill "may have gone too far," signed it reluctantly.¹⁰ But the bill also provoked a vehement outcry from liberal legislators, most notably state senator Herbert Gladstone's memorable declaration that "the bill was for Catholics and against everybody else."¹¹ The American Civil Liberties Union pursued a lawsuit against three southern New Jersey hospitals, all non-sectarian, which were refusing to perform abortions. According to the ACLU, non-religious hospitals receiving public funds had an obligation to permit abortions; while an individual or religious-affiliated hospital might object to such practices on moral grounds, an "institutional conscience clause" for other hospitals was unconstitutional. The New Jersey Supreme Court agreed.¹² Associate Justice Sidney Schreiber wrote for a 6-1 majority in *Doe v. Bridgeton Hospital Association* that these hospitals, "as quasi-public institutions," had an obligation "to serve the public without discrimination."¹³ Another court struck down an institutional conscience clause law in West Virginia. However, for nearly fifteen years after *Roe vs. Wade*, state refusal clauses did not generate much public controversy.

The major structural changes the swept the American healthcare system during the 1990s increased the profile and impact of refusal laws. When state governments and private employers turned to managed care in an effort to curtail spiraling costs, they often agreed to such exemptions in order to secure the votes of anti-abortion lawmakers. The federal government followed suit by including a refusal clause when it established uniform standards for Medicaid managed care programs in the Balanced Budget Act of 1997. In addition, a flurry of mergers during the decade consolidated small clinics and hospitals into larger systems, many under religious auspices.

For example, five of the ten largest healthcare systems in the United States are Catholic, including Ascension and Fidelis; 18% of all hospitals and 20% of all hospital beds in the country are run by Catholic systems.¹⁴ The current healthcare landscape is “dominated by huge medical corporations rather than the traditional private practices that once provided the bulk of medical care.”¹⁵ Laws designed to protect the freedom of conscience of individuals are now shielding insurance companies and major hospital networks. Anti-abortion activists and lawmakers have responded by using these exemptions *toward their own ends*. In several states, including Illinois and Texas, state legislatures broadened refusal laws during the 1990s to cover payers as well as providers, and to cover not merely abortions and sterilizations but all procedures (including counseling and referrals) to which providers or payers had a moral objection.

These structural changes caused pro-choice organizations and politicians to rethink their approach toward refusal legislation. Laws that once seemed benign to many pro-choice lawmakers—and to some a crucial part of the personal freedom championed by civil libertarians—now threatened to undo the work of *Griswold* and *Roe*. Defenders of reproductive rights pressured state lawmakers to enact legislation requiring all insurance carriers to cover contraceptives and abortion. Among the most tightly drawn of these bills was California’s Women’s Contraception Equity Act which applied only to birth control but included a narrow refusal clause inapplicable to most religiously-affiliated insurers.¹⁶ Catholic Charities of Sacramento challenged the law as an unconstitutional infringement upon freedom of conscience, but the California Supreme Court upheld the statute.¹⁷ Similar legislation survived a court challenge in New York. Pro-choice activists also renewed their campaign against institutional conscience clauses. They won their most significant victory in Alaska in 1997, when the state Supreme Court compelled private, nonsectarian hospitals to perform abortions.¹⁸

THE FEDS TAKE CHARGE

The debate over refusal clauses returned to the federal government in

1996 after the Accreditation Council for Graduate Medical Education required residency programs in obstetrics and gynecology to offer abortion training. This ACGME rule permitted exemptions only for programs demonstrating a religious or moral objection *provided that* they referred interested house officers to other programs for instruction. Senator Dan Coats (R-Indiana) and Representative Peter Hoeckstra (R-MI) responded with legislation that expanded the refusal clause to include *any* objections—presumably economic or political as well as moral—and eliminated the referral requirement.¹⁹ The Coats Amendment also prohibited discrimination against such programs for their anti-abortion stance.

Anti-abortion groups and the United States Conference of Catholic Bishops then lobbied to expand this refusal legislation beyond residency training programs to all health care providers. A first effort, the Abortion Non-Discrimination Act, was sponsored by Michael Bilirakis (R-FL) and passed the House of Representatives in 2003, but it never reached a vote in the Senate.²⁰ The following year, Representative Dave Weldon (R-FL), tacked a Federal Refusal Clause onto a \$388 billion, three thousand page omnibus spending bill; the bill narrowly passed the divided Senate and was signed into law by President Bush. The rider prohibits any state from “discriminating” against hospitals refusing to perform or provide for abortions; failure to comply results in the loss of education, labor and health aid. Critics quickly branded the law a “gag rule” because it prevents states from requiring that Title X funded family-planning clinics and those providing care under Medicaid from making abortion referrals. Yet the precise parameters of what would constitute discrimination under the act are not entirely clear. An *Atlanta Journal-Constitution* editorial noted the potentially broad scope of the new law: “Consider a doctor who discovers a Medicaid patient has an ectopic pregnancy, which can lead to tubal rupture, hemorrhage and death if not aborted. If the doctor tells the nurse to make an abortion referral for the patient and the nurse never does so, the doctor could have no recourse. Firing the nurse could lead to a discrimination charge under a wide application of Weldon.”²¹

Senator Barbara Boxer (D-CA) received a commitment from Republican leaders in the Senate for a direct vote on repeal of the Weldon Amendment, but following the election of a number of anti-abortion lawmakers in the 2004 election, chose not to pursue this vote with its outcome uncertain.

BROADER IMPLICATIONS

The door opened by refusal legislation may prove wider than many advocates imagined. In several recent episodes, auxiliary workers in health-related fields have invoked such protections. An emergency medical technician in Illinois is suing an ambulance company that fired her for refusing to transport a woman to an abortion clinic; the case is pending.²² In Corpus Christi, Texas, anti-abortion officers on the police force have demanded an exemption that will allow them to refuse to guard or protect abortion clinics.²³ In a bitterly divided nation, it is easy to imagine secondary boycotts in which hospitals refuse admitting privileges to physicians who perform abortions elsewhere—or even to physicians who make abortion referrals.

While framed by the debate over reproductive decision-making, the expansion of refusal clauses also has far broader implications. If healthcare institutions are to be exempted from offering some services because of their moral objections, it is not clear why they should ever be required to provide any services that violate their principles. One area in which the debate is likely to surface is with regard to end-of-life care. Many religious institutions oppose the withdrawal of nutrition and hydration and some object to “do not resuscitate” orders. In the past, courts have ordered these providers to honor the wishes of patients and families. For instance, in *In Re Jobs*, the New Jersey Supreme Court compelled a nursing home to remove a feeding tube from a competent patient despite its moral objections.²⁴ Another New Jersey court announced that offering to transfer a patient to a different hospital to have undesired care withdrawn did not meet a hospital’s legal obligations because of the additional burden such a move imposed upon the patient.²⁵ Refusal clauses in many states threaten to undermine patient autonomy in end-of-life matters.

One leading critic of refusal laws argues that they might easily be used to defend “a treating physician who refuses to provide antiviral therapy to an HIV-infected gay person because the physician’s religious beliefs hold that AIDS is a punishment for homosexuality” and also “a physician who refuses to provide pain medication to a terminal patient because the physician’s beliefs require the withholding of treatment that may hasten death.”²⁶ Far more likely is the withholding of information: A Jehovah’s Witness doctor might not share information that might lead a patient to seek a blood transfusion or a Scientologist physician not steer a suicidal patient to a psychiatrist.²⁷ Already, there have been numerous instances of physicians failing to provide complete and accurate amniocentesis results in an effort to deter abortion.²⁸

TOWARD A MIDDLE GROUND

Several states have attempted to balance the needs of patients with those of providers. In Hawaii, for example, state law permits employees to go directly to their health insurer to request birth control coverage, even if their employer opposes it. They can then purchase the coverage directly at the price that their employer would have paid.²⁹ Connecticut has adopted a “black box” approach that allows healthcare plans to channel funds to third party administrators for procedures they find morally objectionable.³⁰ These arrangements reflect the recognition that, in cases where patient care is not inhibited or compromised, every effort should be made to accommodate the religious objections of providers. In contrast, the unusually broad conscience clause exemption to Rhode Island’s contraceptive equity law covers all “religious employers” and “church-controlled organizations” including several large insurers.³¹

An ideal resolution to the conflict between the values of healthcare providers and the needs of patients would be one that guaranteed the latter desired services without forcing individual doctors or institutions to deviate from their moral principles. While these goals will sometimes prove incompatible, drawing very narrow and precise refusal clauses may help eliminate much controversy. First, all patients should be informed up-front which procedures are not offered by

their provider. No provider should be permitted to keep a patient in the dark—even if that means stating: “I do not counsel patients with regard to abortion because of my religious beliefs; if you wish information on this subject, you should seek care elsewhere.” Concealing that one does not provide certain information or perform certain procedures does substantial damage to physician-patient trust and should never be tolerated. Second, protections should be afforded, wherever possible, to individual providers—but not to large healthcare institutions, such as insurance plans or national pharmacy chains, that engage in enterprises well beyond the scope of mere religious practice. It seems reasonable to permit individual pharmacists to refuse to fill certain prescriptions provided that the pharmacy has someone on staff and available to do so. Finally, refusal clauses should permit providers to deny care only in circumstances where patients have feasible access to other willing providers. It is a long established principle that doctors may choose their patients—except in emergencies or when no other care is available (eg. if one is the only doctor or hospital in a particular rural area.) A good compromise might entail extending this precept to matters of conscientious medical objection.

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HEALTHY LIFE EXPECTANCY IN RHODE ISLAND

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During the 20th century, life expectancy in the United States increased dramatically, from 47 years in 1900 to 77 years in 1998.¹ Most of this increase occurred in the first half of the century. During the second half, there have been more modest increases in life expectancy, but significant increases in the number and prevalence of chronic diseases that diminish quality of life.^{1,2} Recognizing this reality, the first overarching goal of Healthy People 2010 and Healthy Rhode Islanders 2010 is to “increase quality and years of healthy life,” that is, to increase **healthy life expectancy (HLE)**.^{1,2}

Traditionally, life tables have been used to estimate remaining life expectancy at each age. However, a traditional life table cannot determine how many of the remaining years of life will be healthy years. In recent years, a method has been devised to represent overall population health in a single number, that is, to calculate HLE by combining the life table (mortality) with a population-based measure of health status (morbidity).^{1,2} This paper presented updated average life expectancy for Rhode Island residents, and for the first time, average healthy life expectancy for Rhode Islanders.

METHODS

Age-specific Rhode Island mortality data for 2000-2004 were used to produce abridged life tables for Rhode Island, using 17 five-year age groups instead of single years, and a last open age group (85+) assumed to be 15 years. Details of the life table calculations are available elsewhere.^{1,2}

The **Behavioral Risk Factor Surveillance System (BRFSS)** is a national telephone survey of randomly selected non-institutionalized adults (ages 18 and older). The BRFSS monitors the prevalence of behavioral risks that contribute to the leading causes of disease and death among adults in the United States. It is

administered by all 50 states and by 4 US territories with funding and methodological specifications provided by the **Centers for Disease Control and Prevention (CDC)**.³

From 1993 through 2004 the Rhode Island BRFSS asked the question, “Would you say that in general your health is: excellent, very good, good, fair, or poor?” Responses of “Good”, “Very Good”, and “Excellent” to this question were combined to produce age-specific percentages of “perceived good health” as well as age-sex-specific percentages. (For persons under age 18, who are not surveyed on the BRFSS, the percentage in perceived good health was estimated as the highest percentage for any adult age group.¹) Several years of data (1993 – 2004) were pooled to improve the stability of the age-specific estimates.¹ The age-sex-specific estimates of “perceived good health” were used with age-sex-specific mortality data to calculate HLE by age and sex, following procedures developed by the **National Center for Health Statistics (NCHS)**.²

RESULTS

Figure 1 shows the percentage in “perceived good health” in each 5-year age group for both sexes combined. The age-sex-specific estimates (www.health.ri.gov/chic/statistics/life-expectancy.php) were used to adjust the average life expectancy to create the average HLE for age-sex-specific groups as well as overall.¹

Table 1 presents the average life expectancy and average healthy life expectancy at each age group (age-sex-specific life expectancy and HLE estimates are also available at www.health.ri.gov/chic/statistics/life-expectancy.php). The average overall life expectancy in Rhode Island at age 0-4 is 77.8 years. The average healthy life expectancy is 67.2 years. In other words, of the 77.8 years of life expected at age 0-4, 10.6 years will be spent in a state where health status is perceived to be fair or poor.

Figure 2 shows the differences in life expectancy and healthy life expectancy by sex in Rhode Island for those ages 0-4 years. Females can expect

Figure 1. Percentage of population in perceived good health, by age, Rhode Island, 1993-2004.

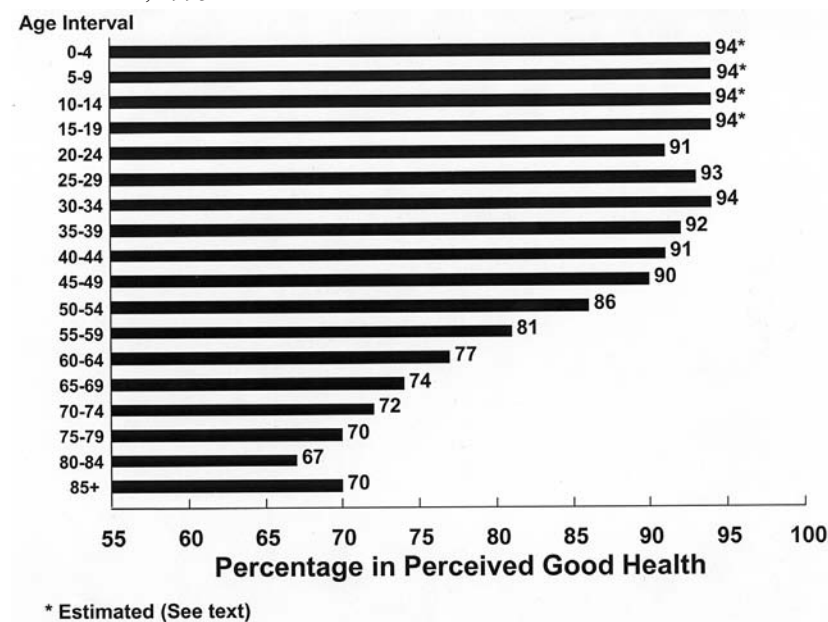


Table 1.
Life Expectancy (2000-2004) and
Healthy Life Expectancy (1993-2004),
by Age, Rhode Island.

Age Interval (years)	Life Expectancy (years)	Healthy Life Expectancy (years)
0-4	77.8	67.2
5-9	73.3	63.0
10-14	68.4	58.4
15-19	63.4	53.7
20-24	58.6	49.2
25-29	53.7	44.7
30-34	48.9	40.3
35-39	44.1	35.8
40-44	39.4	31.4
45-49	34.8	27.2
50-54	30.3	23.1
55-59	25.9	19.3
60-64	21.7	15.8
65-69	17.8	12.7
70-74	14.2	10.0
75-79	11.0	7.6
80-84	8.0	5.5
85+	5.3	3.7

to live 5.1 years longer than males. Healthy life expectancy is also longer for females, by 2.6 years. However, females can also expect to spend 2.5 more years in fair or poor health than males (11.8 years for females, vs. 9.3 years for males).

DISCUSSION

The current life expectancy at age 0-4 for Rhode Islanders of 77.8 years (75.1 for males, 80.2 for females) represents an increase in life expectancy over the past two decades. The NCHS calculated the life expectancy of Rhode Islanders for 1989-91 as 76.5 years (73.0 for males, 79.7 for females); for 1979-81 RI life expectancy was 74.7 years (70.0 for males, 78.3 for females).^{4,5}

For the overall Rhode Island population, of the 77.8 years of life expected, an estimated 67.2 years will be spent in a healthy status. Females will spend more years in an unhealthy state than males. This result is consistent with findings of other studies.¹

There are several limitations to using the BRFSS data for estimating HLE. First, it does not provide information on perceived good health for persons under age 18 in Rhode Island. It is likely that our method underestimates HLE for the under 18 age groups. Second, persons in households without a telephone are not included in the BRFSS. Such persons are likely to be from lower income

households, and likely to have more health problems than those from higher income households. Excluding them from the survey may overestimate HLE for adult age groups. Third, the BRFSS does not include institutionalized populations such as the military, incarcerated persons, and those living in nursing homes, dormitories, etc.

Combining mortality data and BRFSS data on general health status provides a way to calculate HLE. The estimates presented here are the first such calculations for Rhode Island residents and can serve as a baseline for tracking progress toward Healthy Rhode Islander 2010 goals. If HLE is periodically calculated, increases in HLE can reflect improvements in the health of Rhode Islanders that are not reflected in simple estimates of life expectancy alone.

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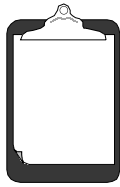
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Figure 2. Life expectancy (2000-2004) and healthy life expectancy (1993-2004) at ages 0-4, by sex, Rhode Island.





THE SOCIAL MATRIX OF ADULT PHYSICAL ACTIVITY IN RHODE ISLAND

COLLEEN CARON, PHD

Awareness of the health benefits associated with physical activity has experienced a recent upsurge in public health capital, stimulated by growing concern about the potential health fallout from a US obesity epidemic (cardiovascular disease, diabetes, cancer, and mental health issues).^{1,2} Physical activity is instrumental in achieving “population health,” broadly defined by the World Health Organization as: “... a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”³

The purpose of the present study is to describe the “societal matrix” (demographic, social, and economic) within which adult physical activity occurs, focusing on adult residents of Rhode Island who do not meet recommended guidelines for moderate physical activity, and building from past research on associations between physical activity and a) demographics factors such as age, sex, race and ethnicity, b) social factors such as marital status and presence of children, and c) economic factors such as employment, education, and household poverty.^{4,5} Looking at physical activity in this way acknowledges its subtle grounding in the social construct commonly called “lifestyle,” in contrast to approaches that look at physical activity as the fruit of specific, individual choices. The weaknesses of the latter are several, not the least of which is a tendency to stigmatize those who do not make “the right choices,” blind to underlying societal matrix in which such choices are possible or impossible, nurtured or stifled.

METHODS

The Behavioral Risk Factor Surveillance System (BRFSS) is a national telephone survey of randomly selected non-institutionalized adults (ages 18 and older) who live in households with telephones. The BRFSS monitors the prevalence of behavioral risk factors that contribute to the leading causes of disease and death among adults in the United States. It is administered in all 50 states and four U.S. territories with funding and methodological specifications provided by the Centers for Disease Control and Prevention (CDC).⁶ Two years’ data, collected in

2001 and 2003, were combined. The resulting data set contained 8173 responses, of which 7627 were suitable for the present study, 4687 from females respondents, and 2940 from male respondents. Responses missing essential data were excluded from the analysis. (Table 1)

DEFINITIONS

Moderate physical activity is defined as physical activity of moderate intensity undertaken for 30 or more minutes per day, five or more days a week. This guideline may also be met by substituting physical activity of vigorous intensity undertaken for 20 minutes or more, three or more days a week.

Poverty is defined as family income below 200% of the federal poverty threshold.⁷

A multivariate logistic regression was performed to assess the strength of the relationship between physical activity and selected demographic, social, and economic variables. Crude and adjusted odds ratios were weighted to reflect the demographic structure of the Rhode Island adult population as closely as possible. Odds ratios were adjusted for the effect of each of the demographic socio-economic dimensions in the model and are discussed below. Ninety-five percent **confidence intervals (CI)** were calculated for the odds ratios using SUDAAN statistical software, version 9.0, which adjusts for the complex sampling design of the BRFSS.

RESULTS

In 2001 and 2003, 51% (CI: 50%, 52%) of adults aged 18 and older did not meet the national guidelines for moderate physical activity. The odds ratios for age, race / ethnicity, education, and employment are significantly associated with physical activity (after adjusting for other demographic, social, and economic variables), as follows:

- **AGE:** Relative to adults ages 18-34, (the referent group), older adults *had greater odds of not meeting guidelines* for moderate physical activity.
- **RACE / ETHNICITY:** Relative to non-Hispanic whites (the referent group), other groups *had greater odds of not*

meeting guidelines for moderate physical activity.

- **EDUCATION:** Relative to college graduates (the referent group), other groups *had greater odds of not meeting guidelines* for moderate physical activity.
- **EMPLOYMENT:** Relative to adults who “work for wages” (the referent group), other adults *had greater odds of not meeting guidelines* for moderate physical activity.

DISCUSSION

Consistent with a wealth of research, this analysis reveals a statistical relationship between dimensions of socio-economic status and physical activity, and furthermore, that these dimensions have *statistically independent effects* on meeting guidelines for moderate physical activity. One may infer that public health programs intended to promote physical activity had better address the “complex” of determinants inherent in “socio-economic status,” rather than focusing on one or more particular barriers to physical activity, such as ignorance of its benefits to health.

What would a “holistic public health approach” look like? It would recognize the complex system of societal forces responsible for shaping “lifestyles” of which moderate physical activity is a part, and recognize, as well, that the system of societal forces is configured differentially in separate social strata, resulting in different “lifestyles.” It would set long term objectives for systemic changes within and across social strata. For example:

- Support all state and local interventions to improve the **quality of education** for Rhode Island youth, focusing on the state’s six core cities. (*Rationale: Educational attainment is the sine qua non of all public health interventions, and is central to the complex social phenomenon to which we have referred as “lifestyle.”*)
- Sustain and expand **public transportation** throughout the state, linking low income neighborhoods with other communities throughout the state, and providing a real public transportation option for the middle class commuter.

(Rationale: Reliable public transportation is foundational for education, employment, access to health care, and other societal resources associated with lifestyle. Substituting public transportation for the use of personal vehicles integrates moderate physical activity into “getting around.”)

- Build additional **biking and walking paths**. (Rationale: These trails are popular and well-used wherever they are built. They create new “community spaces” and nurture the adoption of new, healthy habits.)
- Plan for **mixed income neighborhoods**. (Rationale: Socially segregated low income neighborhoods have been consistently associated with unhealthy lifestyles, including low levels of physical activity.)
- Promote economic planning that creates a **mix of jobs to suit existing**

skills of the workforce. (Rationale: Unemployment is a major, complex barrier to the development of healthy lifestyles, including appropriate levels of healthy physical activity. Developing only “high-tech” jobs with little opportunity for persons of low to moderate academic achievement leaves a substantial proportion of the population at risk of unemployment or underemployment.)

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Table 1. Relationship between demographic socio-economic dimensions and not meeting guidelines for moderate physical activity among Rhode Island adults, RI BRFSS 2001, 2003.

Socio-demographic Dimension	At risk for not meeting recommended moderate physical activity guidelines			
	Unadjusted OR (OR)	95% CI	Adjusted OR (AOR)	95% CI
Sex				
Males	1.0	Referent	1.0	Referent
Females	1.2	1.1, 1.4	1.1	1.0, 1.3
Age				
18-34	1.0	Referent	1.0	Referent
35-49	1.2	1.0, 1.4	1.2	1.1, 1.5
50-64	1.7	1.4, 1.9	1.6	1.3, 2.0
65+	2.5	2.1, 3.0	2.3	1.6, 3.1
Race / Ethnicity				
White, NH	1.0	Referent	1.0	Referent
Black/AA, NH	1.8	1.3, 2.6	2.2	1.5, 3.1
Hispanic	1.9	1.5, 2.4	1.8	1.4, 2.4
Other	0.8	0.6, 1.2	1.1	0.8, 1.6
Education				
Less than HS	2.2	1.8, 2.6	1.4	1.1, 1.9
HS grad/GED	1.6	1.4, 1.8	1.3	1.1, 1.5
College/tec sch	1.1	1.0, 1.3	1.1	0.9, 1.3
Col.grad +	1.0	Referent	1.0	Referent
Employment				
Work for wages	1.0	Referent	1.0	Referent
Self employed	0.8	0.6, 1.0	0.7	0.6, 1.0
Not working	1.4	1.1, 1.8	1.2	0.9, 1.6
Homemaker/student	1.0	0.8, 1.2	0.9	0.7, 1.1
Retired	2.0	1.7, 2.3	1.0	0.8, 1.3
Unable to work	3.0	2.3, 4.1	2.4	1.7, 3.4
Poverty				
Below 200%	1.5	1.3, 1.7	1.1	0.9, 1.3
Above 200%	1.0	Referent	1.0	Referent
Marital Status				
Married	1.0	Referent	1.0	Referent
Divorced	1.0	0.9, 1.2	0.9	0.7, 1.1
Widowed	2.2	1.8, 2.7	1.3	1.0, 1.6
Separated	1.6	1.1, 2.3	1.0	0.7, 1.5
Never Married	0.8	0.7, 0.9	0.9	0.7, 1.0
Unmarried Couple	0.7	0.5, 0.9	0.7	0.5, 1.0
Children				
No children	1.0	Referent	1.0	Referent
1-2 children	0.8	0.7, 0.9	1.0	0.9, 1.2
3 children +	0.7	0.6, 0.9	0.8	0.6, 1.0

Data Source: Rhode Island Behavioral Risk Factor Survey, 2001 and 2003

OR: Odds ratio. AOR: Adjusted odds ratio. Adjusted for all factors listed in table CI: Confidence Interval

P<.05

Estimates are weighted to RI population .

WORKING TOGETHER TO IMPROVE ICU CARE IN RHODE ISLAND

CATHY E. DUQUETTE, PHD, RN, LYNN MCNICOLL, MD, FRCPC, PHYLLIS J. MCBRIDE, MS, RN, LAURA L. ADAMS, MS

BACKGROUND

Intensive care units (ICU) in Rhode Island and across the nation represent the greatest advancements of medical science. They also represent areas with great opportunity to prevent medical death and reduce cost. The Institute of Medicine's report "To Err is Human" identified that medical errors are common in health care, resulting in up to 98,000 deaths per year.¹ While not specific to ICU care, a national study of quality of care in the United States identified that consumers receive recommended care only 50% of the time.² A study that modeled the impact of failure to implement five evidence-based practices in the ICU setting calculated that 167,819 deaths would be preventable nationally.³

Other studies of ICU care have found that:

- On average every patient admitted to an ICU suffers at least one potentially life threatening error⁴
- There are 1.7 errors per patient per day; of which 30% are potentially serious⁵
- 17% of ICU patients suffer serious adverse events⁶
- Patients with complications are 4 times more likely to die⁷ and cost associated with care are increased by 215%.⁸

DOCUMENTED SUCCESS IN OTHER STATES

Three states - Michigan, Maryland, and New Jersey - have already embarked on collaborative statewide ICU improvement efforts. These states are now working together to share best practices and other materials to facilitate improvement efforts and minimize duplication of effort.

Early results from Michigan are astounding. Of the 108 ICUs participating in the Michigan collaborative, 33 (31%) have experienced five or more consecutive months with no ventilator associated pneumonia and 34 (31%) have had five or more consecutive months with no catheter-related blood stream infections.⁹ Further, Michigan's participating ICUs that cared for patients with severe sepsis between November 2003 and December 2004 have reduced mortality by 46.7% and length of stay by 47.3%,⁷ resulting in significant improvements in care and cost savings. The Rhode Island ICU Collaborative (Collaborative) aims to rapidly adopt the successful changes already yielding dramatic improvements in ICUs across the country.

ICU CARE IN RHODE ISLAND

Rhode Island currently has 11 general acute care hospitals that have one or more adult ICUs. These hospitals include a total of 16 adult intensive care units across the State with the total capacity of 263 beds. (Table 1)

FOCUS AREAS FOR IMPROVEMENT

This Collaborative aims to improve care for hospitalized ICU patients specifically to reduce length of stay and reduce complications and associated costs by implementing and evaluating one or more of the following in the adult ICU setting in hospitals in Rhode Island:

- The effect of implementing a **Comprehensive Unit-based Safety Program (CUSP)** to improve the safety culture of the unit;
- The effect of an intervention to improve communication and staffing in ICUs (daily goals

Table 1.

Hospital	Number Adult ICU Beds	Percentage of Total ICU Beds Statewide	2003 ICU Patient Volume	Percentage Total Volume Statewide
Kent	15	5.7%	918	5.8%
Landmark	8	3.0%	506	3.2%
Memorial	18	6.8%	745	4.7%
Miriam	35	13.3%	1405	8.8%
Newport	10	3.8%	620	3.9%
Rhode Island	122	46.4%	7674	48.1%
Roger Williams	14	5.3%	1613	10.1%
South County	8	3.0%	598	3.8%
St. Joseph's	15	5.7%	784	4.9%
VA Medical Center	8	3.0%	392	2.5%
Westerly	10	3.8%	689	4.3%
Total	263	100.0%	15,944	100.0%

sheet);

- The effect of an intervention to reduce or eliminate catheter related blood stream infections in ICUs;
- The effect of an intervention to improve the care of ventilated patients in ICUs;
- The effect of specific interventions to reduce ICU mortality.

Further, this Collaborative seeks to improve efficiency, reduce cost, change culture, improve staffing, and subsequently, improve patient, family, and staff satisfaction.

COLLABORATIVE DESIGN

Building on the experience and lessons learned from the Michigan, New Jersey and Maryland collaboratives and using the program and materials developed by Dr. Peter Pronovost's team at Johns Hopkins University, and tools from VHA's *Transforming Care in the ICU* project, the Rhode Island Quality Institute proposes to implement an ICU Collaborative in Rhode Island that involves ICU teams from all hospitals with adult ICUs. This Collaborative will apply a rapid-cycle improvement model following the model developed in other states to facilitate peer-to-peer ICU teams' sharing of strategies that have been successfully used in both ICU projects and other hospital quality improvement efforts in Rhode Island.

COLLABORATIVE LEADERSHIP

The Rhode Island ICU Collaborative Leadership Committee will include the following representatives:

- Quality Partners of Rhode Island (Quality Partners)
- Hospital Association of Rhode Island (HARI)
- Rhode Island Quality Institute.

Quality Partners of Rhode Island (Quality Partners) and the **Hospital Association of Rhode Island (HARI)** will co-lead this ICU Collaborative in Rhode Island under the umbrella of the **Rhode Island Quality Institute (RIQI)**. The ICU Collaborative Leadership Committee will draw upon the expertise of RIQI and will rely on input from a consultative team of national experts who have implemented these strategies in ICUs across the county. RIQI will secure funding, monitor progress, and maintain momentum. Quality Partners and HARI will work with the consultative team to provide statewide project management.

BENEFIT TO HOSPITALS AND DIRECT CARE PROVIDERS

In addition to the benefits of improved care provided to patients who need or receive ICU care, hospitals and direct care providers will benefit from:

- Training in the science of safety and modern improvement techniques;
- Conducting a pre- and post-improvement Safety Culture Survey;

- Using a proven model to improve the safety culture and patient outcomes;
- Working with national experts and practical, ready-to-use low tech tools;
- Sharing, learning, and practicing strategies in a safe, supportive environment; and
- Receiving support to spread this model and lessons learned to others units in the hospital (ICU and non-ICU).

This Collaborative is designed to be consistent with other applicable patient safety and quality improvement programs, such as the 100,000 Lives Program from the **Institute for Healthcare Improvement (IHI)**, the **Joint Commission of Accredited Healthcare Organizations (JCAHO)** requirements, and CMS requirements. Further, it is designed to ensure that hospitals will be able to fulfill all applicable and related obligations with the ICU project as appropriate.

HOSPITAL PARTICIPATION REQUIREMENTS

To participate in the Collaborative, hospitals in Rhode Island with adult intensive care units must meet the following requirements which are essential for effective implementation of the proven approach:

- Hospital Chief Executive Officer must submit a letter of support for the Collaborative.
- Each participating ICU must assemble an ICU Collaborative Team that includes the following staff: senior executive (vice president or above); ICU director; ICU nurse manager; ICU physician; ICU staff nurse; pharmacist; respiratory therapist; and patient safety officer/quality improvement staff member.
- The senior executive must commit to adopting an intensive care unit and conducting "executive WalkRounds™".
- The ICU physician and one nurse (either the manager or the staff person) must each commit four to eight hours per week to this Collaborative. This time is needed for overall project coordination and participation in regular conference calls with ICU Collaborative Leadership Team members and/or consultative team members. Since many ICUs already have teams in place or are conducting some activities similar to those required in this ICU Collaborative, efforts for this project may not be as time-consuming because existing frameworks may facilitate needed improvement efforts.
- Each hospital team must commit to collecting the data required and to attending up to three collaborative meetings per year.

COST SAVING ESTIMATES FOR RHODE ISLAND

The reductions in ICU length of stay and complications from ventilator-associated pneumonia and ICU catheter-related blood stream infection translate into significant cost savings to the healthcare system. Using data from the hospital discharge database in Rhode Island

and models developed by John Hopkins University, the conservatively-estimated cost savings for the Rhode Island health care delivery system associated with only ventilator-associated pneumonia prevention approached \$6.3 million.

CONCLUSION

Hospital ICUs represent care areas with great opportunity to prevent medical death and reduce cost. While hospitals in Rhode Island have already taken steps to improve care in the ICU setting, participation in this Collaborative will enable hospitals to learn from other states that have demonstrated dramatic improvement in ICU care, allow hospitals to share best practices and lessons learned, and improve the quality of ICU care provided to all Rhode Islanders.

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POINT OF VIEW

CAPITALISM, COMPETITION, AND COMMERCIALISM: THE HEALTHCARE MARKETPLACE VS. THE MEDICAL HOME

DAN HALPREN-RUDER, MD, PHD

Consumer Value Stores (CVS) and the Minnesota-based MinuteClinic (MC) have announced their intention to partner and place MinuteClinic facilities in 6 CVS stores in Rhode Island. MinuteClinic operates in 22 locations in the Twin Cities and Baltimore, mostly in Target, Cub Foods and CVS Pharmacies. For these facilities to provide healthcare in Rhode Island (they plan to employ Nurse Practitioners), MC needs to apply for a license as an Organized Ambulatory Care Facility (OACF). The process requires that an application be accepted by the Department of Health's Office of Healthcare Strategy and Planning. There is then a one-month period for comment, followed by a hearing of the Health Services Council and, should there be no objection, the awarding of a license.

Concurrent with the expansion of consumer-driven healthcare will be the inevitable development of competitive providers that jockey to capture segments of the healthcare spectrum. These providers will define market-niches, satisfy a need, and capture market share. Recently concierge providers, testing on demand, and boutique (spa-like) environments have emerged. These niche-providers have focused on high-side demand. Now enters a new entity that focuses on the low side.

The **primary care provider (PCP)** is the fundamental unit of health care. S/he fills a multitude of functions; many are poorly compensated. These elements of overhead can be circumvented by simply defining the low intensity, low overhead elements of the PCP practice and inventing an alternative venue to deliver these services. These low overhead venues, with defined services, could under-price the PCP and attract the large component of patients who are "shopping" for price, thanks to insurers' high deductibles, medical savings accounts, expenditure caps, and exclusionary coverage periods.

The market "niche" providers who focus on high-side consumption do not radically skew the structure of healthcare, if only because few patients can afford "concierge-type" medicine.

These new niche-providers, however, place impossible pressures on the already stressed PCP. The entry of a CVS / MinuteClinic partnership in the Rhode Island marketplace is a clear example of such a destabilizing force. This low-overhead, low-intensity provider will function like a primary care vending machine.

In the context of a narrowly defined symptom presentation, a consumer puts a proverbial quarter in the slot, receives instant gratification. From a consumer's point of view, this is efficient, convenient, and priced right.

From a health systems point of view, this venue destabilizes the PCP by either forcing higher average intensity service or lower average income. Due to the complexities of billing, the PCP could not give patients such steep price discounts. The Rhode Island PCP will have to recoup the lost business by providing higher intensity services at lower reimbursement. Because post-graduate programs are already seeing a reduced interest in the PCP training programs, the long term result of the CVS / MinuteClinic partnership in RI (and its national competitors) will be to make the PCP function even less attractive. In the grand scheme (which may not be a short term, marketplace-sensitive quantity), the result will be to take down perhaps the only segment of our healthcare structure that has a chance of keeping the whole cost-effective.

The varied functions of the PCP's office are rarely considered. A visit for a cough includes a chart review, recap of annual health plans, review of interval data and telephone calls, and an overall strengthening of the medical home. This same visit at the CVS / MinuteClinic site is absent all of the interactions we value in the PCP setting. The CVS / MinuteClinic visit trips certain prescriptive triggers, and the patient leaves "treated" but not cared for. The PCP office misses this visit not only in the lost "catch-up" sense, but also economically. Without

the occasional complaint-driven visit, the only income seen by the PCP is that derived from the annual visit. In some populations, this may be every other year. However, the paperwork, telephone calls, record-keeping and access issues persist for the PCP. So the annual visit must compensate for these uncompensated, but expected PCP tasks. The CVS / Minute clinic partnership short-circuits the PCP, and may eventually lead to an unacceptable short-circuit of the medical home.

Do we simply honor the marketplace and the short term gains it promises, or do we see the long term as more valuable?

In fact, marketplace forces are inseparable from capitalism. But American capitalism has developed safety valves when the forces of supply, demand and competition on occasion do not produce a sustainable society. So we have procedures that do not allow a monopoly, do not allow unfair competition, and do not allow predatory and discriminatory marketing. We bar cigarette advertisements from television. We police for ads that pander to vulnerable populations. The question is: while we all agree that competition produces value in the economy, should we promote a market force that can be predicted to produce long-term destabilization? In the context of CVS / MinuteClinic partnership, we may need to answer that the long term goals must always be kept in focus and that we should therefore deny a license to the CVS / MinuteClinic partnership.

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NINETY YEARS AGO, AUGUST 1915

An Editorial commented on the “enormous number of patients who yearly receive gratuitous medical aid at the hospitals of Providence.It does not require a too vivid imagination to follow the curves in “Dr. Welch’s charts” to a point where to insure a livelihood for the doctor there must be fewer physicians, an increase in population, a diminution in the number of hospitals, or at least a curtailment of gratuitous service.”

Harry S. Bernstein, MD, in “The Prolongation of Human Life,” noted the decline in general death rates in the United States, from 18.6 per thousand (1880) to 15 per thousand (1909). The key causes of death were “organic diseases of the heart,” including Bright’s disease, arterial disease, and an allied group of cerebral hemorrhage and angina pectoris. Theses diseases were increasing. Dr. Bernstein stressed the importance of “individual hygiene” as crucial to retarding these degenerative diseases, and stressed to physician-readers: “The teaching of the individual how to guard against danger is one of our duties.” In England and Sweden, where citizens engaged in more “out of door sports” and exercise, these degenerative diseases were not increasing.

Frederic P. Gorham, Professor of Bacteriology, Brown University,” reported on “The Old Medical School in Brown University.” In September 1811 Brown appointed 3 medical professors (anatomy and surgery, materia medica and botany, and “chymistry”); in 1814, the school graduated its first class.

FIFTY YEARS AGO, AUGUST 1955

Dana Farnsworth, MD, Henry K. Oliver Professor of Hygiene, Harvard Medical School, gave the Arthur Hiler Ruggles Oration, “Education Discovers Mental Health,” at Butler. The Journal reprinted his talk. He discussed college mental health services.

Dale Friend, MD, Senior Associate in Medicine, Peter Bent Brigham Hospital, contributed “Observations on Some of the Newer Drugs.”

An Editorial deplored the closing (September 1, 1955), of Butler Hospital. “We trust that Butler Hospital will be re-organized, but not abolished.”

TWENTY-FIVE YEARS AGO, AUGUST 1980

Patricia Wold, MD, praised the usefulness of the “The KDS-3A”. “The paper-and-pencil test is an extremely useful guide in diagnoses and treatment of affective disorders.”

Robert J. Marshall, Jr, in “Cigarette Smoking among Public School Children in RI,” summarized a study that highlighted “factors which encourage smoking.” The study showed 14% of male students, and 21% of female students smoked, and that females smoked more. Nationally, 15% of female public students smoked. The study showed that the following were positively related to smoking: gender, family smoking pattern, peer smoking, job experience outside the home.



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

VITAL STATISTICS

EDITED BY ROBERTA A. CHEVOYA, STATE REGISTRAR

Rhode Island Monthly Vital Statistics Report

Provisional Occurrence Data
from the
Division of Vital Records

Underlying Cause of Death	Reporting Period			
	August 2004	12 Months Ending with August 2004		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	210	3,035	283.7	4,881.5
Malignant Neoplasms	204	2,478	231.6	7,318.5
Cerebrovascular Diseases	40	509	47.6	720.0
Injuries (Accident/Suicide/Homicide)	39	455	42.5	7021.0
COPD	25	474	44.3	395.0

Vital Events	Reporting Period		
	February 2005	12 Months Ending with February 2005	
	Number	Number	Rates
Live Births	1114	13372	12.5*
Deaths	968	10073	9.4*
Infant Deaths	(6)	(66)	4.9#
Neonatal deaths	(5)	(56)	4.2#
Marriages	309	8132	7.6*
Divorces	287	3,232	3.0*
Induced Terminations	508	5,569	416.5#
Spontaneous Fetal Deaths	44	931	69.6#
Under 20 weeks gestation	(39)	(853)	63.8#
20+ weeks gestation	(5)	(78)	5.8#

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

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

(c) Years of Potential Life Lost (YPLL)

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

* Rates per 1,000 estimated population

Rates per 1,000 live births

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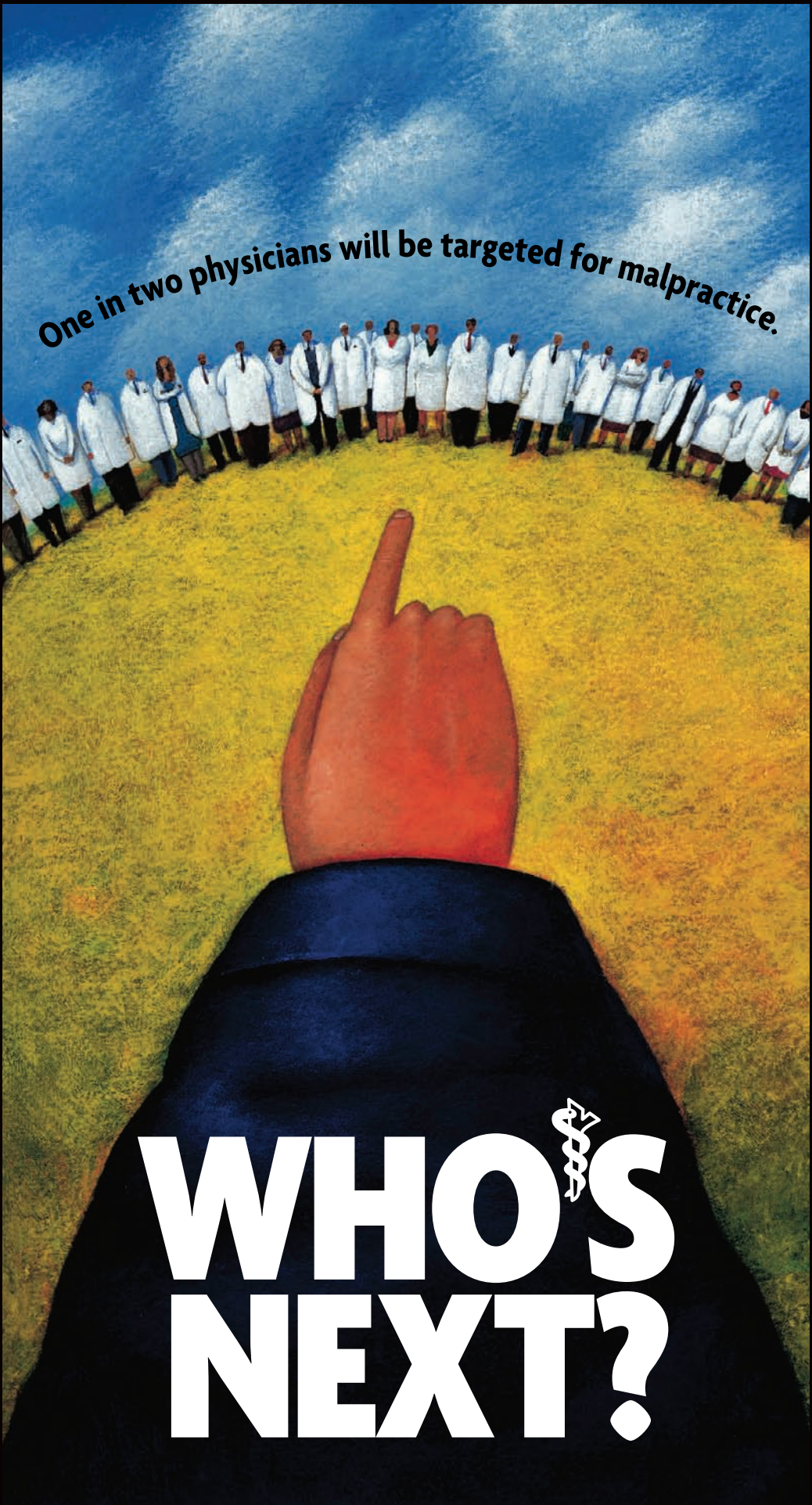
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