Preparing for the Silver Tsunami: The Integration of Geriatrics Into the New Medical Curriculum at The Warren Alpert Medical School of Brown University

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Old age is the most unexpected of all the things that happen to a man.
— Leon Trotsky
(Lev Davidovich Bronstein),
Diary in Exile, 1935

When current medical students begin residencies, the first baby boomers will reach Medicare eligibility (1/1/2010). The Warren Alpert Medical School of Brown University has seized this demographic certainty to ensure that its graduates, regardless of medical specialty, know how to care for older adults.

The redesign of the medical school curriculum in academic year 2006-2007, previously described in Medicine & Health/Rhode Island, provided an ideal time to launch an ambitious program to teach principles and content of geriatrics to all students. When the Donald W. Reynolds Foundation awarded a $2 million, 4-year grant to Brown in July 2006, the essence of the proposed project was captured in the slogan, “Geriatrics for every student, every course, every year.” Targets were medical students, residents in multiple specialties and faculty development. As the medical school has streamlined its pre-clerkship courses by integrating physiology, pathophysiology, pharmacology and pathology in each of the organ blocks, aging content is integrated as appropriate. No longer are age and disease tacitly and inextricably linked; the distinction between normal aging and pathology is explicitly taught.

Reynolds has awarded 30 curriculum grants to US medical schools since 2001. In the project’s two years at Brown, we have accomplished the following initiatives.

Pre-Clerkship Courses

Pre-clerkship courses were the first priority. Faculty geriatricians and advanced fellows on the Reynolds team identified essential geriatrics content that could be added to the syllabus of each course, in synchrony with the goals of each course director, section leader and lecturer. Geriatrics faculty provided detailed content outlines, cases for small group learning and PowerPoint slides. Understanding that students focus on tests, exam questions (>150 to date) testing knowledge of the aging-related content were constructed and many were used. We increased aging-related content for 1st year students from <6 hours to >45 hours, and for 2nd year students from 16 to 46 hours.

The Anatomy Lab Comes Alive

Anatomy is a highlight. Death certificate data on the 24 cadavers of the 2006-7 academic year revealed that the mean age at death was 80.5, and the median was 86. Causes of death and comorbid conditions illustrated our nation’s most prevalent causes of morbidity and mortality, which were discussed with the students in the context of their own cadavers. Geriatricians led a “walk the tables” lab session, discussing the aging and disease findings in each cadaver. In their first semester of medical school, students learned that their cadavers illustrated complex medical problems representative of the living patients they were about to encounter in clinical settings.

Scholarly Concentrations (SCs)

Another highlight of the curriculum redesign has been the SCs program, previously described in Medicine & Health/Rhode Island. Students identify an area of interest from among the 10 SCs, and together with a mentor, develop a project. In the first year, 6 MD2010 students chose the SC-Aging. Concentrators are assigned a volunteer community-dwelling “Elder Guide,” with whom they develop a social relationship in monthly visits. Each year, concentrators participate in group “field trips” and small group sessions, and attend many of the core lectures in the Geriatrics Summer Series.

The projects of the first class of concentrators are diverse. Difu Wu (mentor, RW Besdine) prepared >40 aging-related content outlines for the 1st year Integrated Brain Sciences course; these materials are the basis for a geriatric neurology textbook and geriatrics and neurology faculty are writing. Amy Hsu (mentor, J Teno) studied feeding tube insertion rates for end-stage dementia patients across hospitals, and presented a poster at the American Geriatrics Society meeting. Ian Buchanan (mentor, RW Besdine), who has been awarded an NIH Howard Hughes Scholarship, created a web-based interactive curriculum on transitions in care. Ronen Stein conducted focus groups with 4th year medical students to ascertain perceptions and knowledge of end-of-life care (mentors, R Shield, N Long). Robert Velasco (mentor, P Pirraglia) assessed risk factors for success of pulmonary rehabilitation for older veterans with chronic pulmonary disease; he presented a poster at the American Thoracic Society meeting.

Virtual Patients

Web-based learning has been integral to self-directed study. Geriatricians worked with former Dean for Medical Education Stephen Smith to develop interactive media cases of older patients. In a longitudinal multi-year case, an elderly woman falls, has serious sequelae and subsequent co-morbid conditions. Epidemiological context, screening tests and treatment are part of this lively DVD, which also features several older patients who recount their falls.

Doctoring – The Longitudinal Relationship

For the two-year Doctoring course, geriatrician Naomi McMackin paired students with consenting residents in assisted living facilities (ALFs). During this year-long relationship, students practiced their physical exam and interviewing skills, learning how to discuss sensitive issues such as end-of-life care.

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**Clerkships**

All clerkships but pediatrics have explicit mandatory clinical exposures to older patients, enriched by multiple small group discussion cases. The newly integrated surgery case features an elderly woman presenting with diverticulitis; themes include uncommon symptoms and functional loss, exposing students to clinical situations in which aging affects evaluation and management.

In 2008, a new clerkship focus is proceeding in tandem with the curriculum redesign. In the traditional apprentice model of medical training, individual clerkships had little communication, resulting in duplication and overlap. In the reorganization of the clerkships, the Reynolds contribution is to identify broad clerkship “themes;” candidate themes are germane to aging, but not exclusively geriatrics topics.

**End-of-Life Theme**

The Reynolds Clerkship Advisory Group is creating an end-of-life theme to be implemented across clerkships. The core didactic content and clinical experiences related to end-of-life care will be taught, as decided by each clerkship’s leadership. The family medicine clerkship will include content about delivering bad news; in the experiential component students will participate in a patient conversation about advanced directives in the outpatient setting. In surgery, students will learn about informed consent, including temporary suspensions of DNR/DNI status for surgery. The students will witness a patient discussion regarding informed consent for surgery. In psychiatry, students will learn about grief, bereavement, failed grieving and the assessment of suicide risk; in the experiential component students will assess a suicidal patient for safety.

**Residencies**

Residencies in Internal Medicine, Emergency Medicine, Family Medicine, Psychiatry and OB-GYN have been enriched. All internal medicine residents have a mandatory 1-month geriatrics block in year 1, consisting of non-hospital clinical experiences, a 10-session didactic series and work on a personal project. Many residents rotate through the geriatrics teaching service (GTS), caring for Geriatrics Practice in-patients; geriatrics faculty are attendings, and fellows rotate as well. Emergency Medicine residents run 8 geriatrics cases, developed by EM faculty using high fidelity mannequins in the Rhode Island Hospital Simulation Center. The first EM geriatrics fellow began a 2-year academic program in 2006. Half the EM interns rotate on the GTS. Family medicine residents have a 3-year continuity experience in geriatrics, including nursing home (NH) care, case discussions, didactics and most recently the deployment of an electronic medical record in the NH. Psychiatry, with its own academically oriented 2-year geriatrics fellowship, has an extensive resident curriculum. OB-GYN residents have clinical experiences in geriatric gynecology and uro-gynecology, reinforced by 5 annual lectures on principles and practice of care for older patients. Some interns rotate on the GTS.

**Educational Resources in Aging (ERA)**

The Brown Reynolds Project launched the ERA website in fall 2007. Created by medical students Sarah Rajaee and Joanne Chiu, the site houses all aging-related materials created at Brown (>100 elements). Using the MyCourses program, a workspace tool for all Brown University courses, a generic username and password allows access for non-Brown users. Files are organized for students, residents, faculty and general audiences. The “For Students” folder includes aging syllabi on the organ systems, Problem-Based Learning (PBL) cases for clerkships, and slide sets for courses. The “For Residents” folder includes cases for residents in each specialty, and supporting slide sets. The “For Faculty” folder, accessible only by Brown faculty, stores exam questions and other sensitive information. The “General Resources” section houses many slide sets, relevant articles and web resources. The site is featured on the POGOe (Portal of Geriatric Online Education) website, a Reynolds Foundation inventory of aging-related products, and is accessible through the Brown Library’s and Gerontology Center’s homepages.

**Faculty Development**

Two initiatives target practicing physicians, especially those who mentor and teach medical students.

**Geriatrics Dose**

Determining how much geriatrics content is delivered to students is complex. In collaboration with course directors, lecturers began to integrate new aging content into the pre-clerkship curriculum. Beyond documenting these additions, we assessed the students’ perceptions of the amount and quality of the aging-related content. Several volunteers (“trackers”) from the 1st and 2nd year classes were recruited to report on geriatrics content in every lecture, lab and small group. Via tracking sheets, students documented the minutes of aging content, level of integration, and other evaluative comments.

From these reports, interesting definitional issues arose. If aging content were truly successfully integrated, the student might not identify it as “aging” content (i.e., “stealth geriatrics”). Moreover, students may not define “aging” traditionally; for example, and much to the evaluators’ surprise, a 47-year-old patient was described as “geriatric.” Student com-
ments have included suggestions for improvement. For example, a student, praising a lecture on dementia, suggested “causation” be better explained. Such feedback can spur mid-course corrections. Course directors and instructors are also asked to report on the aging content, cases and exam questions included in their courses.

Journaling

“What are your experiences, reactions, and insights related to the geriatrics content you have received in your medical school courses?” This question is posed weekly to medical student volunteers in the journaling project. A second question asks for student responses to older patients encountered that week. In some weeks, a third question is added, tailored to that week’s curricular topics. In personal, thoughtful, and sometimes moving accounts of their insights, misgivings and musings, students explore their notions about becoming physicians and what it means to care for older patients.

In these essays and in the debriefing “thank you lunches” held at semester end, students have shared their perceptions about the project’s value, as well as our efforts to integrate geriatrics. A qualitative analysis team of two geriatricians, a medical anthropologist, a gerontologist and a health services researcher is analyzing the journals. These journals reveal shared meanings that provide clues to how students respond to their courses, what they think it means to be a physician, and how they may care for older patients after they graduate.

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