

FORMULATING A CURRICULUM ON AGING AND HEALTH FOR UNIVERSITY UNDERGRADUATES

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ABSTRACT There is a need in our society to raise the national consciousness about aging, health, and the prospects for longevity, so that many more persons take responsibility for their personal health and understand what we will need in an era of health-care reform to promote health across the life course. We address this imperative by offering a relevant curriculum through a public-health lens, designed especially for university undergraduate students. Unlike the traditional educational focus on graduate students who are already committed to a career in the health professions, the students in our sights have little prior exposure to the course content and are still largely uncertain of their career plans. We believe this proposed course will help students understand aging processes as these evolve over time, understand the opportunities that arise from greater life expectancy, encourage them to promote their own health, and make a social contract to do so for society.

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This paper is dedicated to the legacy of Robert Butler. The far-reaching and unique contributions he made during his lifetime continue to influence our understanding of aging and longevity and to define ways to achieve a healthier society worldwide. Part of this paper was presented at the 38th Annual Meeting of the Association for Gerontology in Higher Education (AGHE), Arlington, VA, February 2012.

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THE UNPRECEDENTED TRANSFORMATION of human life expectancy in the past century from an average of 47 years to 80 years has been a game changer for individuals and society. This “longevity revolution” (Butler 2008) reflects the tremendous success of public-health approaches to improving the health of populations, plus education, poverty alleviation, and advances in medical care (Albert and Freedman 2010; Buchner 2012; Fried 2012b). A range of professional disciplines and organizations concerned with or responsible for the future of societal health and well-being have sought to define health promotion and health-care services for an expanding older population, and to identify and mobilize the workforce with the special skills needed to provide their care (*Bulletin* 2012; Fahy et al. 2011; Frieden and Berwick 2011; Grundy et al. 2010; Howse 2012; Iglehart 2011; IOM 2011; Koh 2010; Restropo and Rozental 1994; Siegel and Nolan 2009). We have more specifically focused on the need—indeed the imperative—to raise awareness more widely among the general population about aging processes, health promotion, and the implications and opportunities arising from longevity. For this purpose, we have identified as our target audience the large group of young adults enrolled as university undergraduates in a liberal arts program, and those students in a public-health concentration.

This approach requires a departure in perspective and content from the more traditional educational focus in this area on graduate students who have chosen to pursue a career in the health professions. Rather, the students in our sights are younger, with little prior exposure relating to the content of this course, and many are still uncertain of their career goals. These young persons perceive “aging” as “growing old,” a daunting theme to capture their attention. Not only are they conceptually and chronologically far from this experience, but they may be indifferent or resistant to such an exposure at this time in their lives. Yet recent similar educational initiatives indicate that there may be a growing interest in the importance of formulating a relevant curriculum for this age group (AGHE 2012). We present here our conception of what would constitute the basis for a curriculum to instruct and engage these university undergraduates in aspects of aging and aging processes, ways to maintain health over the life course, and career paths they might pursue to promote health more widely in a longevity society. We suggest that it is particularly appropriate to formulate and introduce such an instructional course at this time when the Affordable Care Act and other federal initiatives may usher in a legacy of health-care reform, with unprecedented opportunities for promoting health (Connors and Gostin 2010; Iglehart 2010; Jennings 2010; Koh and Sibelius 2010).

The authors are presently at Columbia University Medical Center’s Mailman School of Public Health and its recently incorporated International Longevity Center. Our individual and interactive academic orientations relating to gerontology and public health clearly shaped the formulation and the educational framework of this curriculum, as well as the selection of a relevant literature (Fried 2012a, 2012 b; Hamerman 2007, 2009).

ELEMENTS OF THE PROPOSED CURRICULUM

The curriculum we are proposing consists of four units, which are outlined in the sections below.

Aging, Health, and Longevity

A scientific orientation will form the background for a review of aging processes that evolve over time and are linked with transitions to chronic illnesses widespread in our aging society, among them obesity, diabetes, heart disease and strokes, cancer, osteoarthritis, osteoporosis, dementing illnesses, and geriatric-related frailty (Berry et al. 2012; Fried 2012a, 2012b; Hamerman 2007, 2010a; Olshansky and Cassel 1997; Verbrugge and Patrick 1995). Maintaining health over the life course becomes the new standard for longevity that should prevail for these young persons, who may attain their 100th birthdays (centenarians), or exceptionally, live to be 110 years or supercentenarians (Coles 2004; Dutta et al. 2011; Perls 2006; Rajpathak et al. 2011). Students will especially relate to predictors of health across the lifespan and the personal measures that maintain health and well-being at successive generational stages (Alwin 2012; Buchman et al. 2012; Charkravarty et al. 2012; Fried 2012b; Kuh et al. 2012; Mishra, Cooper and Kuh 2010; Morgan and Kunkel 2007; Myint and Welch 2012; Peel, McClure, and Bartlett 2005). To illustrate some of the determinants of health and longevity, we present a pyramid with three-tiers, modified from Thomas Frieden's (2010) "health impact pyramid." At the peak, and perhaps most influential, are good personal lifestyle practices, interactive with the environmental and individual genetic makeup that favorably influence health outcomes; in the middle of the pyramid are the provisions of preventive and medical health care; and at the base are a broad array of governmental and public health measures aimed at improving population health.

Health Disparities

Achieving a healthier and longer lifespan, however, remains problematic for many persons in our society. Aging-related chronic diseases continue to impose a personal and societal toll that in many respects drives the high costs and disease-oriented nature of our health-care system. Yet the younger generation in our focus may accept a "reformation of lifestyle" as part of this instructional course (Fogel 2012), and by observing personal health habits essential to maintain their health and well-being, encourage similar societal efforts. This would help reverse the widespread neglect of health practices that could reduce the inception of many chronic diseases (Koh 2010; Reeves and Rafferty 2000). Students also need to be aware of many existing inequities in lifestyle and health care that result in poor health outcomes, and to seek ways to reduce disparities that arise from race/ethnic/nativity backgrounds, life-course socioeconomic circumstances, and limited access to and familiarity ("literacy") with the health-

care system (Berkman et al 2011; Haas, Krueger, and Rohlfen 2012; Radley and Schoen 2012; Schafer and Ferraro 2012; Tucker-Seeley et al. 2011). Students attracted to a future career in economics related to the provision of health care will be interested in Robert Fogel's (2012) important discussion of how populations accumulate "physiological capital" to overcome socioeconomic disparities to reduce the burden of disease.

Government and Public-Health Interventions to Improve Health Outcomes

Prospects for health reform that arise from new federal initiatives to promote health are important for students who may choose to formulate health-related policies or to pursue health-care practices with this new orientation. Indeed, "the opportunity to reinforce a common agenda for medicine and public health is perhaps the greatest promise of health care reform" (Stine and Chokshi 2012, p. 369). The "Million Hearts" Program seeks to prevent heart attacks and strokes and meet targets set by a "2020 Vision for Healthy People" (Frieden and Berwick 2011; Koh 2010). The Affordable Care Act—a highly relevant resource to promote the health care of these students as its provisions unfold over time—"attempts comprehensive reform, touching nearly every aspect of our health care system, with the promise of greater access, reduced disparities, and higher quality of care for all US residents" (McDonough 2012; Radley and Schoen 2012; Sommers and Bindman 2012). By encouraging health promotion and disease prevention in medical practice, and through population health approaches, the Affordable Care Act could potentially "reshape the rates, treatment, and course of chronic diseases in America" (Laiterapong and Huang 2010, p. 899). One outcome, anticipated by James Fries (1998) in this journal 15 years ago, would be a "compression of morbidity," with more persons entering old age in good health.

Career Opportunities to Improve the Health Status of Aging Persons

Students newly aware of health interventions that could favorably extend personal and societal longevity may choose to pursue relevant career opportunities linked with improving health outcomes, encouraged by the prospect that this era of health-care reform may accelerate the trend towards health care's being the dominant employment sector in the economy (Baicker and Chandra 2012; Staiger, Auerbach, and Buerhaus 2011). Table 1 lists some of the health-related career paths this curriculum explores, oriented towards aging persons.

DISCUSSION

We believe this course will encourage university students to reflect on the implications of longevity in a personal way, to gain awareness of aging processes projected over time, and to acquire an intergenerational vision of the older person they will become. They will also perceive—perhaps for the first time—a broader

TABLE 1 HEALTH-RELATED CAREER PATHS ORIENTED TOWARDS AGING PERSONS

<i>Career paths</i>	<i>Further reading/resources</i>
Formulating national or international policies to benefit societal health, and planning health systems, public health technologies, and urban designs	Arai et al. 2012; Buchner 2012; <i>Bulletin</i> 2012; Christensen et al. 2009; Fahy et al. 2011; Fogel 2012; Fried 2012b; Orzag and Emanuel 2010
Engaging in the practices of “patient-centered” health care within supportive systems	Adashi, Geiger, and Fine 2010; Doherty 2013; Fried and Hall 2008; Howse 2012; Kocher, Emanuel, and DeParle 2010
Enhancing the status of the “direct-care workforce,” those caregivers who provide services for the homebound elderly or for nursing home residents, many of whom are currently inadequately trained, compensated, or recognized	Boris and Klein 2012; IOM 2008; <i>New York Times</i> 2011
Pursuing biomedical research in the “new science of aging,” aiming to apply to human populations those laboratory-based studies that involve metabolic, pharmacologic, or genetic interventions that extend the “health span” of animal models	Bornstein and Licinio 2011; Hamerman 2010a; Partridge, Thornton, and Bates 2011; Selman and Withers 2011; Woolf 2008
Seeking to integrate basic and applied genetics into the practice of medicine (genomics), including “personalizing” the prescription of medications, analyzing predisposition to diseases, and applying preventive interventions early to improve health outcomes	Crimmins and Finch 2012; Hudson 2011; Khoury et al. 2009; Murabito, Yuan, and Lunetta 2012; Pilling et al. 2012; Suhre et al. 2011; Wang, McLeod, and Weinshilboum 2011

picture of the consequences and interactions of aging, health, and the challenges and opportunities longevity poses for them and for society. After seeing the road ahead for health-care reform, students may choose to pursue a healthier lifestyle for themselves or to make a social contract in a professional role to encourage society to do so as well (Gostin and Garcia 2012; McDonough 2012). Students stimulated by this course to pursue a career in medicine, if also “optimistic about the health law,” are likely to incorporate reforms in their practices and to “take part in this critical venture that could define the future of medicine” (Sommers and Bindman 2012, p. 1697). A wider national awareness of promoting and maintaining health could shift the current professional preoccupation of health-care practices from treatment of fully expressed, aging-related diseases towards health maintenance and preventive care to limit disease expression (Marvasti and Stafford 2012; Orzag and Emanuel 2010).

CONCLUSION

The concepts that form the basis of this curriculum will continue to evolve and be modified by the instructors as they gain experience in teaching this course and receive feedback. Our own prospects for the presentation of this course came down to a period of 12 weeks, with each of the four units highlighted here discussed within a three-week span, two sessions per week for one and a half hours. Students' receptivity, and the effect of this course on their career choices, need to be evaluated. Any influence this course may have on improving personal and population health, and even expanding the relevant workforce will depend on evolving national practices in public health (Doherty 2010), the "emergence of health as the business of health care" (Asch and Volpp 2012, p. 888), and especially the continuing "unfinished journey of the American health care system down the path of reform" (Oberlander 2012, p. 585).

Also necessary for the potentially wider influence we envision for this curriculum will be the extent to which other university and college teaching programs take up these ideas and adapt them for the education of their undergraduate student constituencies to improve longevity for them personally, and for our society generally. Clearly, each university or college choosing to do so will have an individual approach. The elements of the proposed curriculum highlighted in this paper, with the supporting references, would constitute a starting point for this endeavor. Institutional time allotment for the course will be variable, and subject to review and approval.

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