

Training the Next Generation of Public Health Leaders to Tackle Chronic Disease in Delaware:

Examples And Opportunities

Laura Lessard, PhD, MPH¹ and Angela Herman, DNP, RN²

1. Department of Health Behavior and Nutrition Sciences, University of Delaware
2. College of Health Professions and Natural Sciences, Wilmington University

Introduction

Chronic diseases are the number one cause of death in Delaware and across the United States, accounting for four of the five top leading causes of death each year.¹ In a previous issue of the *Delaware Journal of Public Health* (December 2022), data on the geographic distribution of chronic illness in the state was presented, illustrating patterns of disease and their relationship to demographic patterns. Of note, the authors posit that, “an aging population [in Delaware] is more likely to develop chronic disease as a natural result of the aging process.”² Indeed, medical treatment advancements have extended the lifespan and quality of life for many living with chronic diseases, resulting in an increased need for disease management and support. The realm of chronic diseases and public health is continually broadening, incorporating innovative approaches for both preventing and managing these conditions. As educators helping to train and support the next generation of public health professionals, we recognize that preparing our students to meet this reality takes a multi-level approach. In this paper, we present examples from our institutions of the ways that chronic disease is taught in our curricula with the hopes of both shining this light on this work but also identifying opportunities for collaboration, expansion and growth.

Chronic Disease Epidemiology

At a fundamental level, it is imperative that public health professionals understand the epidemiology of chronic disease, including its distribution and determinants. This can take the form of learning about sources of epidemiological data, ways to collect valid and reliable data and identifying trends in data over time.

At Wilmington University, Epidemiology for the Health Professions is a course shared by graduate students in both Nursing and Health Science majors to promote interdisciplinary communications and teamwork. Students are introduced to the principles and methods of epidemiologic investigation, data and the use of classical statistical approaches to describe the health of populations. A final project presentation provides the opportunity for them to do a thorough discussion of a specific chronic health condition from an epidemiologic focus - including the natural history of the disease, pathophysiology and transmission as well as screening recommendations and current policy issues related to the condition. WilmU's Doctor of Nursing Practice (DNP) program also includes a course in Epidemiology which provides an advanced evaluation and analysis of the principles of epidemiology. Students become familiar with epidemiologic approaches to causation and the use of analytic epidemiology. Assignments provide students with methods to discern measures of disease burden in the community.

At the University of Delaware (UD), our introductory epidemiology course taught to undergraduate students teaches students about the prevalence, incidence and risk factors for chronic disease like diabetes and heart disease. Course assignments frequently use chronic disease examples, showing students how data sources such as the Behavioral Risk Factor Surveillance System (BRFSS) and National Notifiable Diseases Registry can be used to understand both the current status and trends over time in chronic disease diagnoses in Delaware and how those compare to other jurisdictions. In the graduate Epidemiology of Aging course, part of the MPH curriculum at UD, students conduct research culminating in a presentation of aging, demographics, epidemiology of aging-related disorders and current issues related to aging for a particular jurisdiction of choice (country or state). Class discussion examines the similarities and differences across jurisdictions.

Chronic Disease Prevention and Treatment

As the incidence of chronic disease increases, the population of individuals who could benefit from primary, secondary and tertiary prevention as well as treatment also expands. Students need to understand both the mechanisms and opportunities for prevention along with the current state of treatment for chronic diseases. These topics are integrated in a variety of learning experiences appropriate for student level and program.

At UD, for example, the Graduate Certificate in Health Coaching provides training to become a Nationally Board Certified Health and Wellness Coach (NBC-HWC). The curriculum teaches students the skills needed to support clients with their individualized health goals, including those to reduce chronic disease risk such as increasing physical activity, reducing stress and improving diet. Students in the program learn both the theory and practice of health behavior change and have ample practice coaching clients during their training.

At Wilmington University, Bachelor Degree students in the Health Sciences program students are prompted to consider all areas of disease and prevention through the lens of patient education, healthcare leadership, healthcare policy, evidence, public health, as well as law and ethics. The concepts of chronic care are infused through the resources and assignments as the students consider its context within their programs. In the RN to BSN program, core classes provide a thorough practice-focused learning opportunity intended to provide nurses with a deep understanding of the skills required to integrate chronic care into their nursing practices. In the Chronic and Palliative Care course nurses complete a practice-focused learning opportunity to explore the skills required to integrate chronic care into practice.

Health Sciences and BSN students at Wilmington University also may incorporate a certificate in Interdisciplinary Care Management into their program. This comprehensive certification informs students about the need for care management services across all healthcare levels as the connection for patients with chronic illness to successfully navigate transitions of care using a team-based patient-centered approach. Students are provided an in-depth evaluation of the principles and strategies of care management across the healthcare continuum. The curriculum delves into a thorough analysis of value-based financial issues, healthcare quality metrics, and their impact on the provision of care for patients. Students develop skills to leverage innovative technology to optimize workflow efficiency, and foster self-care engagement strategies for patients.

Social Determinants and Their Impact on Chronic Disease

While health behavior and genetic factors influence chronic disease risk, we know that social determinants of health are also powerful drivers of disease incidence. These determinants include conditions in which people are born, grow, live, work and age and are known to relate to chronic disease risk.³ Exposing students to the breadth of determinants and their potential impact on health is necessary across the curriculum.

At the University of Delaware, the Social and Environmental Determinants of Health course offered to graduate students in public health and health promotion explores income, living conditions, education and other factors that impact health and longevity. Through readings and case studies, students learn more about factors and drivers of population health.

Wilmington University's new MS in Health Sciences includes concentrations in both Public Health and Environmental Health. Both include the Foundations of Community and Health Education course that provides a focus on trends in community health disparities and health promotion strategies and education principles to combat adverse events. Within the Population Health concentration students further delve into the issues of determinants of health and their underlying causes. Interprofessional management of complex issues in population health is emphasized within the context of healthcare policy, value-based care, and the use of data analytics. Health Science students further collaborate with the MS in Environmental Science program in a course in Human Health and the Environment. Chronic illness as it relates to and is impacted by environmental factors is examined. The MSN program includes a Public Health concentration. Within the DNP program students also gain valuable knowledge from a Population Health course. This course incorporates experiential engagement time at a site focusing on a vulnerable population. Students collaborate with healthcare peers to develop a community based action research project to improve health outcomes and utilize a logic model to evaluate the effectiveness of the program.

Policy Influences on Living With Chronic Illness

Living with and often dying from chronic disease are complex and emotional experiences. Since many of our students aim to work with patients and in the community after graduation, it is important to expose them to these realities across the curriculum. In addition, policies at the local-, state- and federal-level often influence how these diseases are identified (via screening), treated and managed, with health insurance policy and access to long-term care and support at the top of the list.

At UD, the Chronic Illness in America course is a perfect example of how students can explore these topics. This innovative course was developed in collaboration with Lori's Hands, a local non-profit organization that pairs students with individuals in the community that are living with chronic illness. Student volunteers provide companionship and non-medical support for their clients in the home setting, affording students the chance to see firsthand the experience of their clients and their families. The course provides a wrap-around experience for students, teaching them about topics that their clients face including identity, social determinants, the health care system and the complexity of aging. This scaffolded educational experience allows students to grapple with the intersection of the evidence around chronic illness with the day-to-day realities. The service-learning component of the course, volunteering with Lori's Hands, along with reflection opportunities maximizes the translation of the information into future practice.

At Wilmington University, All BSN students as well as Health Sciences may choose to focus their core coursework with certificates or electives that can enhance their learning in chronic disease management. The Holistic Palliative and End-of Life Care certificate offers extensive preparation for students to deal with patients facing serious illness or death. This five course certificate provides three core classes: Topics in Palliative and End of Life Care, The Process of Dying, and Families and Crisis. Through these courses, students are led to explore concepts impacting chronically ill patients such as psychosocial adjustment, social isolation, self-management and advocacy, and quality of life. Additionally, students can choose two other courses in a variety of applicable topics such as health psychology or healthcare policy. All Health Sciences are required to take an interdisciplinary course in Health Policy shared with their fellow students within the Law, Policy & Political Science program.

Discussion

Through these examples, we've shown just some of the ways that chronic disease can be embedded within the curriculum and these are just a subset of the educational opportunities that exist across the state. Even with these examples, we see several themes that rise to the top. Firstly, **interprofessional education is essential to exploration of chronic disease**. Across our programs, we see several examples of where students from different fields come together and leverage their expertise to tackle challenges of chronic disease. This collaboration allows students to think outside of their typical training about the challenges and opportunities of diagnosing, treating and living with chronic disease. This in turn prepares them for a workforce that is equally diverse. Patient-centered care provides a focus for students to view these challenges and plan healthcare provisions to meet individual needs and goals of those with chronic illness.

Secondly, our programs value **real world applications and community engagement**. Across both institutions, students are afforded opportunities to learn from and with communities about the realities of chronic disease. We have found that students thrive when they are challenged to apply what they learn from lectures and readings to the real world experience of patients and communities. This helps them both understand chronic disease better but also to ask more questions about why and how we screen for, care for and support individuals with chronic disease.

Lastly, our programs are committed to teaching **cutting edge modern applications and advancements**, whether in the realm of epidemiologic methods, treatments or approaches to chronic disease management. The acknowledgment for the increasing use and application of data analytics and digital health technology is evident in many areas of the curricula. This leadership is facilitated by our engagement with research on chronic disease, which spans our institutions and includes others across the state and country.

Conclusion

We present examples of public health training across our institutions that are not designed to be comprehensive, indeed there are other courses and training opportunities across the state in these areas. We encourage our colleagues to share ideas and best practices in these areas moving forward and potentially identify opportunities for cross-program and cross-institutional training on topics of mutual interest.

Dr. Lessard (llessard@udel.edu) and Dr. Herman (angela.j.herman@wilmu.edu) may be contacted at their respective e-mail addresses.

References

1. Delaware Department of Health and Social Services, Division of Public Health. (Nov 2019). Chronic Disease in Delaware: Facts and Figures, 2019.
2. Gibbs, T., & Sabine, N. (2022, December 31). Chronic disease management and the healthcare workforce. *Delaware Journal of Public Health*, 8(5), 176–196.
[PubMedhttps://doi.org/10.32481/djph.2022.12.043](https://doi.org/10.32481/djph.2022.12.043)
3. Hill-Briggs, F., Adler, N. E., Berkowitz, S. A., Chin, M. H., Gary-Webb, T. L., Navas-Acien, A., . . . Haire-Joshu, D. (2020, November 2). Social determinants of health and diabetes: A scientific review. *Diabetes Care*, 44(1), 258–279.
[PubMedhttps://doi.org/10.2337/dci20-0053](https://doi.org/10.2337/dci20-0053)

Copyright (c) 2024 Delaware Academy of Medicine / Delaware Public Health Association.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.