IN STRIDE: Innovation in Student Teaching and Resident Instruction in Diabetes Education

Georgetown University Hospital
MedStar Health

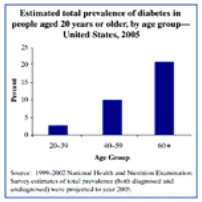
Michelle Roett, MD, MPH
Community Health Center Director Development Fellow
Department of Family Medicine, Georgetown University Medical Center

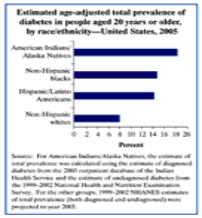
Georgetown University

Abstract

"IN STRIDE" will prepare future physicians for the challenges of diabetes. Targeted experiences for medical students and family medicine residents will introduce approaches to: teaching self-management skills; addressing contributing psychosocial factors; and quality improvement. A student course will introduce adult learning styles, cultural and linguistic competency, and the influence of health literacy on teaching self-management skills. A resident curriculum will concentrate on quality improvement in diabetes care with introductions to performance measurement and incentives. Residents will also lead student exercises. Online evaluative mechanisms will assess closure of educational gaps. "IN STRIDE" will result in: improved diabetes knowledge and clinical skills; the development of online educational modules; quality improvement educational tools for primary care residents; and educational materials incorporating health literacy, cultural and linguistic competence in chronic disease care.

Introduction





In 2002, the prevalence of diabetes mellitus in the United States (US) was 18.2 million,[1] representing $132 billion in costs.[2]

Lower socioeconomic status is associated with a lower likelihood of receiving recommended diabetic services, and a higher chance of patient-provider communication problems.[3]

Health literacy is an independent risk factor for health disparities.[4]
Half of all American adults have limited health literacy[5]

The Institute of Medicine[6] defined health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."

Lower health literacy scores correlate with higher hemoglobin A1C levels, and higher rates of diabetic complications such as nephropathy and retinopathy, yet doctors seldom assess diabetic patients for their recall or understanding of new concepts.[7,8]

Continuous quality improvement is yet another consideration for health professionals facing the multiple challenges of diabetes care, and is a challenge to teach residents and medical students.[9] A comprehensive quality improvement curriculum for family medicine residents will impart knowledge on essential principles and prepare family medicine residents for upcoming performance-based reimbursement strategies.

Objectives

"IN STRIDE" instructional objectives:

1. **To provide a curricular program for medical students containing essential information for students to learn the impact of health literacy and cultural competence on diabetes outcomes, adult learning principles, risk assessment, and resources for diabetes education.**

2. **To provide a curricular program for family medicine residents containing essential information to learn about continuous quality improvement, performance measurement, and the barriers to conducting quality improvement programs in resource limited settings.**

Methods

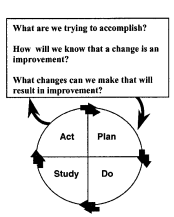
Two project elements are being conducted to achieve objectives:

1. "An In-Depth Look at Diabetes," is underway for first year medical students. Twelve students are currently participating in an eight-week course with weekly, 2-hour sessions (Fig. 1).
2. The required third year rotation in community medicine is the venue for family medicine resident-focused activities. Residents will also participate in health literacy presentations for medical students.

How do I assess my patient's health literacy?

Educational materials include: the American Medical Association Foundation 2003 Health Literacy Educational Toolkit;[11] Understanding Health Literacy;[12] The American Academy of Family Physicians Foundation "Play It Safe … With Medicine!™ Toolkit;"[13] and materials from the National Diabetes Education Program "Small Steps Big Rewards: Your GAME PLAN for Preventing Type 2 Diabetes toolkit;"[14] "Be Smart about Your Heart: Controlling the ABCs of Diabetes Care."[15]

My patient has a limited level of health literacy, what can I do?



How can I contribute to chronic disease quality improvement initiatives once I complete my residency training?

Evaluation

The "IN STRIDE" evaluation tools include:

1. Required module assignments and facilitator evaluation of student participation.
2. Faculty evaluation of resident presentations on QI project, as well as rotation evaluation forms on the six ACGME competencies.

Feedback from the pilot will reshape medical school curricular requirements and family medicine resident quality improvement objectives.

Evaluative tools for health literacy assessment developed by the Association of Clinicians for the Underserved, and cultural competence assessments developed by the National Center for Cultural Competence, will be used to assess student progress.

Fig. 1. IN STRIDE (An In-Depth Look at Diabetes): first year medical students at Georgetown University School of Medicine pictured with Michelle Roett, MD, MPH (far left) on the first day of their 16 hour course.

Conclusions

Innovation in medical student and primary care resident education is needed to guarantee a physicians prepared for the many challenges associated with diabetes management. "IN STRIDE" will prepare medical students to teach self-management skills to diabetic patients; teach medical students to consider how health literacy and other psychosocial factors contribute to chronic disease management; prepare family medicine residents to institute continuous quality improvement programs for chronic diseases in their future clinical settings; prepare residents for the challenges of collecting performance measures in resource-limited settings; and allow residents more teaching experience in diabetes care by leading medical student exercises.

References

1. Centers for Disease Control and Prevention (2003). National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2003. Atlanta, GA: U.S. Department of Health and Human Services, Accessed November 1, 2006 at www.cdc.gov/diabetes/pubs/ factsheet.htm.
2. Centers for Disease Control and Prevention (2002). National Center for Chronic Disease Prevention and Health Promotion, Diabetes Public Health Resource. Prevalence of diabetes among people aged 20 years or older. Accessed November 1, 2006 at http://www.cdc.gov/diabetes/pubs/ estimates.htm.
3. US Department of Health and Human Services (2005). National Healthcare Disparities Report. Accessed November 1, 2006 at http://www.ahrq.gov /qual/nhdr05/nhdr05.pdf.
4. Sudore RL, Mehta KM, Simonsick EM, Harris TB, Newman AB, Satterfield S et al. Limited literacy in older people and disparities in health and healthcare access. *Journal of the American Geriatrics Society* 2006; 54(5):770-776.
5. Institute of Medicine (2004) Health Literacy: A Prescription to End Confusion. Washington, D.C.: National Academies Press.
6. Schillinger D, Barton LR, Karter AJ, Wang F, Adler N. Does literacy mediate the relationship between education and health outcomes? A study of a low-income population with diabetes. *Public Health Reports* 2006; 121(3):245-254.
7. Schillinger D, Piette J, Grumbach K, Wang F, Wilson C, Daher C et al. Closing the loop: Physician communication with diabetic patients who have low health literacy. *Archives of Internal Medicine* 2003; 163: 83-90.
8. Seligman HK, Wang F, Palacios JL, Wilson CC, Daher C, Piette JD, Schillinger D. Physician notification of their diabetes patients' limited health literacy. A randomized, controlled trial. *Journal of General Internal Medicine* 2005; 20(11):1001-1007.
9. Ogrinc G, Headrick LA, Mutha S, Coleman MT, O'Donnell J, Miles PV. A framework for teaching medical students and residents about practice-based learning and improvement, synthesized from a literature review. *Academic Medicine* 2003;78:748-753.
10. Langley G, Nolan K, Nolan T, Norman C, Provost L (1996). The Improvement Guide: A Practical Approach to Enhancing Organizational Performance. San Francisco: Jossey-Bass Publishers.
11. American Medical Association Foundation (2003). Health Literacy Educational Toolkit.
12. Understanding Health Literacy: Implications for Medicine and Public Health (2005). Schwartzberg JG, Vangeest JB, Wang CC, Eds. Chicago, IL: AMA Press.
13. American Academy of Family Physicians Foundation (2006). Play It Safe … With Medicine!™ Toolkit.
14. National Diabetes Education Program (2003). Small Steps Big Rewards: Your GAME PLAN for Preventing Type 2 diabetes toolkit. Accessed November 1, 2006 at http://www.ndep.nih.gov/diabetes/pubs/GP_Toolkit.pdf.
15. National Diabetes Education Program (2005). Be Smart about Your Heart: Controlling the ABCs of Diabetes Care. Accessed November 1, 2006 at http://ndep.nih.gov/diabetes/pubs/ BeSmart_brochEng.pdf.

Acknowledgments

IN STRIDE was designed and implemented under the guidance of the Department of Family Medicine at Georgetown University Medical Center: Jay Siwek, MD, Chair, Kim Bullock, MD, Director of the Division of Community Health, Asha Subramanian, MD, MPH, former Director of the Community Health Center Director Development Fellowship, Patricia Evans, MD, Director of the Family Medicine Residency Program, and Steven Schwartz, MD, Director of Predoctoral Education. Special thanks to Kathie Westpheling, MPH, Lois Wessel, RN, FNP, and Sharon Barrett, MS of the Association of Clinicians for the Underserved, and to Tawara Goode and Wendy Jones of the National Center for Cultural Competence. IN STRIDE is funded by an intramural grant provided by the Georgetown University School of Medicine.