

## Promoting Health Literacy for Children and Adolescents

Tyler N.A. Winkelman, MD, MSc,<sup>a,b</sup> Martina T. Caldwell, MD, MSc,<sup>a,b</sup> Brandon Bertram, MS,<sup>c</sup> Matthew M. Davis, MD, MAPP<sup>d</sup>

Only 12% of American adults have proficient health literacy, defined as a set of skills needed to effectively function in the health care system.<sup>1</sup> This is troubling given that health literacy is a stronger predictor of health than age, income, employment status, educational level, or race.<sup>2</sup> A growing body of research also shows that low health literacy is associated with worse child health outcomes,<sup>3</sup> higher health care costs, and elevated mortality rates.<sup>1</sup>

Although Americans are increasingly expected to be knowledgeable consumers of health care, it is clear that many individuals lack the core health literacy skills needed to understand their health insurance.<sup>4</sup> This inadequate understanding of health care information creates challenges beyond the selection of a health insurance plan or payment calculations. Poor health literacy, including health numeracy, extends into one's ability to seek care at an appropriate time, navigate through the health system, and share in important medical decisions.

In this Perspective, we describe national efforts to combat low health literacy rates and argue that they fail to adequately prepare children and adolescents to be health-literate adults. We then propose several steps for educators, health care providers, and policymakers to improve health literacy among children and adolescents in the United States.

### IMPROVING HEALTH LITERACY: CURRENT STRATEGIES AND WHY THEY FALL SHORT

The US Department of Health and Human Services, the National Academy of Medicine (NAM), and state consortiums have developed sweeping proposals to improve health literacy.<sup>1</sup> These proposals provide an evidence-based framework for policymakers, organizations, and individuals who are interested in improving health literacy in their communities. Nevertheless, it remains unclear whether these recommendations have changed practice in educational, health care, or community settings or have led to improved health literacy.

The National Action Plan to Improve Health Literacy, developed by the Department of Health and Human Services, and recommendations from the NAM encourage diverse sectors to play a role in improving

<sup>a</sup>Robert Wood Johnson Foundation Clinical Scholars Program, University of Michigan, Ann Arbor, Michigan; <sup>b</sup>Veteran's Affairs Ann Arbor Healthcare System, Ann Arbor, Michigan; <sup>c</sup>Hood River County School District, Hood River, Oregon; and <sup>d</sup>Division of Academic General Pediatrics, Ann and Robert H. Lurie Children's Hospital, Northwestern Feinberg School of Medicine, Chicago, Illinois

Dr Winkelman conceptualized the study and drafted the initial manuscript; Drs Caldwell and Davis, and Mr Bertram contributed original ideas to the initial conceptualization and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

**DOI:** 10.1542/peds.2016-1937

Accepted for publication Sep 8, 2016

Address correspondence to Tyler N.A. Winkelman, MD, MSc, University of Michigan, Robert Wood Johnson Foundation Clinical Scholars Program, North Campus Research Center, 2800 Plymouth Rd, Building 14, Room G100-20, Ann Arbor, MI 48109-2800. E-mail: tywink@med.umich.edu

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2016 by the American Academy of Pediatrics

**FINANCIAL DISCLOSURE:** The authors indicated they have no financial relationships relevant to this article to disclose.

**FUNDING:** Funding for research time (Drs Winkelman and Caldwell) was provided by the Robert Wood Johnson Foundation Clinical Scholars Program. No specific funding was received for this project.

**POTENTIAL CONFLICT OF INTEREST:** The authors have indicated they have no potential conflicts of interest to disclose.

**To cite:** Winkelman TN, Caldwell MT, Bertram B, et al. Promoting Health Literacy for Children and Adolescents. *Pediatrics*. 2016;138(6):e20161937

**TABLE 1** Current and Proposed Health Literacy Topics in Public K–12 Education

Current Health Education Topics	Proposed Additional Content
Injury and violence	Health systems
Sexual behaviors	Health disparities
Alcohol and drug use	Scientific rationale for public health interventions
Tobacco use	Health insurance benefit selection
Nutrition	Deductibles and cost-sharing
Physical activity	International health

Adapted from the Centers for Disease Control and Prevention's 6 priority adolescent risk behaviors, which are monitored through the Youth Risk Behavior Surveillance System.

health literacy in the United States. However, most programs designed to improve health literacy are isolated within health care settings and narrowly focus on individuals who are already enrolled in a health insurance plan or who have already developed at least 1 chronic condition.<sup>5</sup> Furthermore, interventions targeted at adults who are actively trying to navigate the health care system and may already have chronic illness may be timed too late for optimal impact.

The NAM suggests that initiatives to improve health literacy through primary and secondary education could lead to better health and decrease the cost of health care in the United States. Unfortunately, many states have removed health education requirements or reduced the requirement to  $\leq 1$  credit in high school. If states do require health curricula in public schools, a health literacy component is not typically mandated. This weakening of health education has occurred despite the near certainty that future generations will experience a complex and increasingly expensive health care system.

### STEPS TO IMPROVE HEALTH LITERACY THROUGH PUBLIC EDUCATION

Efforts to improve health literacy will have a greater national impact if they start before adult-onset chronic diseases are established, ideally while children and adolescents are developing their health behaviors. Such efforts must include the public education system, with particular

attention paid to curricula, funding, partnerships, and measurement.

### Curricula

Although health education has been cut markedly in many states, the National Health Education Standards (NHES) provide a potential path forward.<sup>6</sup> The NHES is a framework that aims to improve students' comprehension of health promotion and disease prevention and to enhance their ability to access health services and information and advocate for community health. However, most schools have not rigorously enforced the NHES because they are neither mandated nor explicitly funded. If the NHES were mandated, it would ensure that students are exposed to essential health education topics and prepared to make informed health care decisions in the future.

The NHES could also be updated to reflect the complexities of navigating health insurance and health care in the Affordable Care Act era. Such an update could offer a novel opportunity for interdisciplinary education. For instance, economics courses could include lessons on financial risk, in which students weigh the risks and benefits of high-deductible plans versus traditional health insurance plans. Students could learn how to calculate out-of-pocket expenses from co-pays and co-insurance in math class. Science teachers could discuss the evidence base for immunization and other public health measures. Social studies classes could include topics on the social determinants of health and

associated health disparities. These topics would broaden the current content typically covered in health education courses (Table 1).

### Funding

Funding for such programs should be provided, in part, by health care institutions that are highly motivated to have patients use health care services in ways that best align with their health conditions and acuity. Government health programs, in particular, have a strong incentive to partner with state and local education systems to develop programs that improve health literacy. We acknowledge that this funding recommendation is a departure from how such programs currently function and fund initiatives, but we believe it would be possible to finance educational opportunities in a manner similar to how some states fund early childhood home-visiting programs (eg, benefits would not be mandatory but could be bundled into Medicaid managed care plans).

### Partnerships

Opportunities for partnership already exist between health care and education sectors. For example, school-based health centers, which have medically trained professionals, are located in 49 out of the 50 states and are increasingly prevalent in public schools. Supplementary funding for health literacy education could help school-based health centers expand their role and serve as a source of comprehensive health literacy education for students and families.

In addition, many health insurance companies now provide families with an incentive when they visit a gym 3 times per week. Similar partnerships could be developed with school systems, so that families receive a discount or incentive when they attend health literacy programs and skill-building sessions. Health care systems and providers could also

help school systems develop a health curriculum that presents complicated health policy as more approachable content for young learners.

### Measurement

Finally, as efforts to improve health literacy are amplified, successes and failures must be measured. Although public and private stakeholders have invested considerable resources to improve health literacy, rates of health literacy among adolescents have never been measured at the national level. We agree with previous authors who have recommended the incorporation of existing health literacy screens (eg, Newest Vital Sign or REALM-Teen) into national surveys such as the Youth Risk Behavior Surveillance System or the National Survey of Drug Use and Health.<sup>7</sup> These surveys, in particular, would allow for both national- and state-level estimates of health literacy.

### CONCLUSIONS

Educational investments earlier in the life span can improve health

literacy in the United States. Critical steps toward improving health literacy include mandated and updated health curricula, sustainable funding sources, cross-sector partnerships, and measurement of health literacy among the adolescent population. Encouraging partnerships between health care and education is a novel, yet practical approach to fund and disseminate these efforts. Enhancing health literacy offers great potential to improve the health of children and to provide them with tools to be more informed and capable consumers of expensive and limited medical resources in adulthood.

### ABBREVIATIONS

NAM: National Academy of Medicine

NHES: National Health Education Standards

### REFERENCES

1. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy

and health outcomes: an updated systematic review. *Ann Intern Med.* 2011;155(2):97–107

2. American Medical Association Ad Hoc Committee on Health Literacy for the Council on Scientific Affairs. Health literacy: report of the council on scientific affairs. *JAMA.* 1999;281(6):552–557
3. DeWalt DA, Hink A. Health literacy and child health outcomes: a systematic review of the literature. *Pediatrics.* 2009;124(suppl 3):S265–S274
4. Levitt L. Why health insurance literacy matters. *JAMA.* 2015;313(6):555–556
5. Taggart J, Williams A, Dennis S, et al. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. *BMC Fam Pract.* 2012;13:49
6. Joint Committee on National Health Education Standards. National Health Education Standards. 2007. Available at: [www.cdc.gov/healthyschools/sher/standards/index.htm](http://www.cdc.gov/healthyschools/sher/standards/index.htm). Accessed September 5, 2016
7. Sanders LM, Shaw JS, Guez G, Baur C, Rudd R. Health literacy and child health promotion: implications for research, clinical care, and public policy. *Pediatrics.* 2009;124(suppl 3):S306–S314

## Promoting Health Literacy for Children and Adolescents

Tyler N.A. Winkelman, Martina T. Caldwell, Brandon Bertram and Matthew M. Davis

*Pediatrics* 2016;138;

DOI: 10.1542/peds.2016-1937 originally published online November 10, 2016;

### Updated Information & Services

including high resolution figures, can be found at:  
<http://pediatrics.aappublications.org/content/138/6/e20161937>

### References

This article cites 6 articles, 2 of which you can access for free at:  
<http://pediatrics.aappublications.org/content/138/6/e20161937#BIBL>

### Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):  
**Hospital Medicine**  
[http://www.aappublications.org/cgi/collection/hospital\\_medicine\\_sub](http://www.aappublications.org/cgi/collection/hospital_medicine_sub)  
**Patient Education/Patient Safety/Public Education**  
[http://www.aappublications.org/cgi/collection/patient\\_education:patient\\_safety:public\\_education\\_sub](http://www.aappublications.org/cgi/collection/patient_education:patient_safety:public_education_sub)  
**Advocacy**  
[http://www.aappublications.org/cgi/collection/advocacy\\_sub](http://www.aappublications.org/cgi/collection/advocacy_sub)

### Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:  
<http://www.aappublications.org/site/misc/Permissions.xhtml>

### Reprints

Information about ordering reprints can be found online:  
<http://www.aappublications.org/site/misc/reprints.xhtml>

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## **Promoting Health Literacy for Children and Adolescents**

Tyler N.A. Winkelman, Martina T. Caldwell, Brandon Bertram and Matthew M. Davis

*Pediatrics* 2016;138;

DOI: 10.1542/peds.2016-1937 originally published online November 10, 2016;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/138/6/e20161937>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2016 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

