WATER WORKS



A Guide to Improving Water Access and Consumption in Schools to Improve Health and Support Learning

Authors

Anna Grummon, BA, Karla Hampton, JD, Ariana Oliva, BA, Claire Brindis, DrPH, and Anisha Patel, MD, MSPH, MSHS.

Cite As

Grummon, A., Hampton, K.E., Oliva, A., Brindis, C.D., Patel A.I. Water Works: A Guide to Improving Access to and Consumption of Water in Schools to Improve Health and Support Learning. (2014). Retrieved from http://waterinschools.org/pdfs/WaterWorksGuide2014.pdf

Funding

Development of this guide was supported by a grant from the San Francisco Foundation and grant #70410 from the Robert Wood Johnson Foundation through its Healthy Eating Research program.

Acknowledgments

The authors gratefully acknowledge the numerous individuals who reviewed and provided input on this guide.

Note

While we have attempted to provide the most up-to-date information and website URLs at the time of publication, some information may have changed.

TABLE OF CONTENTS

Τιτιε	Page	Τιτιε	PAGE
INTRODUCTION AND BACKGROUND	5	ACTION 3 - ENHANCE AND SUSTAIN YOUR WATER PROGRAM	20
The Importance of Improving Access to and Consumption of Water in Schools	5	Encourage Water Consumption Through Promotion and Education	20
About This Implementation Guide	6		20
ACTION I - GATHER SUPPORT AND BUILD YOUR TEAM	7	Key Messages About Water Promotional and Educational Methods	20
Gather Support From Key Stakeholders	7	Develop and Implement Model School Wellness	
Identify Key Stakeholders	7	Policy Language for Drinking Water Access and Consumption	
Meet with Key Stakeholders	8	The Importance of School Wellness Policies	24
Form Your Team	9	Key Content Areas of Water-Related Language for School Wellness Policies	24
ACTION 2 - SERVE SAFE AND APPEALING WATER	10		26
Decide Where to Serve Water	10	ACTION 4 - MONITOR PROGRESS AND MAKE	26
Conduct a Needs Assessment and Talk to Key Stakeholders	11	Components of Evaluation	26
Test Water Quality and Remediate Water Quality	13	Importance of Evaluation	26
Problems		Conduct Your Evaluation	27
Determine the Source of Your School's Drinking Water	13	Form Your Evaluation Team	27
Determine What Contaminants to Examine	13	Process Evaluation: Document What Was Done	28
Determine Which Water Sources You Will Examine	14	Outcome Evaluation: Document Program Effects	29
Select a Laboratory	14	Report Results and Make Improvements	30
Remediate Water Quality Problems	15	ACTION 5 - FUND YOUR WATER PROGRAM	31
Report Results	16	Identify Potential Partners And Funding Sources	31
Select A Water Delivery Option	16	District and School Funding Sources	31
Tap Water Dispensers	17	Parents and Parent Groups	32
Point of Use Water Machines	17	Governmental Organizations	32
Traditional Water Fountains, Fountains with Bottle Fillers and Stand Alone Bottle Fillers	18	Businesses and Corporations	33
Choose Vessels to Serve Water	19	Foundations	33
Reusable Water Bottles and Reusable Cups	19	Non-Profit and Community-Based Organizations	33
Single-Use Cups	19	Student Groups	34

L

TABLE OF CONTENTS (CONTINUED)

Тітle	PAGE
Approach Funders for Short-Term Funding	34
Determine What You Will Ask For	34
Understand the Funder's Interests	34
Anticipate Common Concerns	34
Tips for Approaching Funders	35
Secure Long-Term Funding	35
CONCLUSIONS	36
CHECKLIST FOR TAKING ACTION TO IMPROVE WATER ACCESS AND INTAKE IN SCHOOLS	37
SUPPLEMENTAL MATERIALS	40
Ensure the Quality of Drinking Water in Schools: Initial Steps	40
Test for and Remediate Lead in School Drinking Water	41
Bay Area Environmental Protection Agency (EPA) Certified Water Quality Testing Labs	42
Overview of Drinking Water Delivery Options	44
Tap Water Dispensers	45
Point of Use Machines	47
Traditional Water Fountains, Water Fountains with Bottle Fillers, and Stand Alone Bottle Fillers	49
Reusable Water Bottles	51
Single-Use Cups	55
Activities, Lesson Plans, and Curricula to Encourage Water Intake in Schools	58
Videos and Songs to Encourage Water Intake in Schools	60
Posters to Encourage Water Intake in Schools	61
Model School Wellness Policy Language for Drinking Water Access and Consumption	62
Evaluate Your Water Program: Overview	66
Observation Tool: Examine the Number of Students Who Access a Water Source	68
Resources	69

INTRODUCTION AND BACKGROUND

The *Water Works* Implementation Guide can help you develop a comprehensive program to increase access to safe, appealing, low-cost drinking water sources in your school. It also provides ideas, materials, and resources to help you increase water consumption among the school community. Finally, the guide provides resources to help you evaluate the impact of your water program.

THE IMPORTANCE OF IMPROVING ACCESS TO AND CONSUMPTION OF WATER IN SCHOOLS

Water Access is Important for Students' Health and Cognition

When schools provide drinking water as an alternative to sugar-sweetened beverages (SSBs) such as soda, fruit drinks, and sports drinks, schools promote children's overall health and development. Encouraging consumption of water, especially in place of SSBs, can help limit excess weight gain¹⁻⁸ and prevent dental cavities.⁹⁻¹⁰ And of special importance to educators, drinking water helps students stay hydrated, focused, and ready to learn.¹¹⁻¹³

Health benefits of drinking water include:

↑ hydration

- ↓ risk for dental cavities
- \downarrow risk for obesity
- \downarrow risk for diabetes



Water Access is Required by Law

The Healthy, Hunger-Free Kids Act of 2010 requires schools to make free drinking water available to students during mealtimes in areas where meals are served.¹⁴ Recently, the United States Department of Agriculture (USDA) also released a proposed rule that school wellness policies include language about provision of free drinking water as well as maintenance of drinking water sources.¹⁵ Some states also have legislation requiring schools to offer water at mealtimes. For example, California Senate Bill 1413 requires school districts to provide free, fresh drinking water wherever meals are served or eaten.¹⁶

(1) Wang YC, Bleich SN, Gortmaker SL. Increasing caloric contribution from sugar- sweetened beverages and 100% fruit juices among US children and adolescents, 1988-2004. *Pediatrics*. 2008;121(6): e1604-1614.

(2) Malik VS, Schulze MB and Hu FB. Intake of sugar-sweetened beverages and weight gain: a systematic review. *Am J Clinical Nutr.* 2006;84(2): 274-288.
(3) Malik VS, Popkin BM, Bray GA, et al. Sugar-sweetened beverages, obesity, type 2 diabetes mellitus, and cardiovascular disease risk. *Circulation*. 2010;121(11): 1356-1364.

(4) Wang YC, Ludwig DS, Sonneville K and Gortmaker SL. Impact of change in sweetened caloric beverage consumption on energy intake among children and adolescents. Arch Pediatr Adolesc Med. 2009; 63(4): 336-343.

(5) Daniels MC, Popkin BM. (2010). Impact of water intake on energy intake and weight status: a systematic review. Nutr Rev, 68(9): 505-21.

(6) Stookey, JD, Constant, F, Gardner, CD, Popkin, BM. Replacing sweetened caloric beverages with drinking water is associated with lower energy intake. Obesity (Silver Spring). 2007;15(12): 3013-3022.

(7) Ebbeling CB, Feldman HA, Osganian SK, Chomitz VR, Ellenbogen SJ, Ludwig DS. Effects of decreasing sugar-sweetened beverage consumption on body weight in adolescents: a randomized, controlled pilot study. *Pediatrics*. 2006;117(3): 673-680.

(8) Muckelbauer R, Libuda L, Clausen K, Toschke AM, Reinehr T, Kersting M. Promotion and provision of drinking water in schools for overweight prevention: randomized, controlled cluster trial. *Pediatrics*. 2009;123(4): e661-e667.

(9) McDonagh MS, Whiting PF, Wilson PM, et al. Systematic review of water fluoridation. BMJ. 2000;321(7265): 855-859.

(10) Ismail AI, Sohn W, Lim S, Willem JM. Predictors of dental caries progression in primary teeth. J Dent Res. 2009;88(3): 270-275.

(11) Edmonds CJ, Jeffes B. Does having a drink help you think? 6-7-Year-old children show improvements in cognitive performance from baseline to test after having a drink of water. Appetite. 2009;53(3): 469-472.

(12) D'Anci KE, Constant F, Rosenberg IH. Hydration and cognitive function in children. Nutr Rev. 2006;64(10 Pt 1): 457-464.

(13) Benton D, Burgess N. The effect of the consumption of water on the memory and attention of children. Appetite. 2009;53(1): 143-6.

(14) Healthy, Hunger-Free Kids Act of 2010, Pub. L. No. 111-296, 124 Stat 3183 (2010). http://www.fns.usda.gov/cnd/Governance/Legislation/CNR_2010.htm. (15) Local School Wellness Policy Implementation under the Healthy, Hunger-Free Kids Act of 2010. RIN 0584-AE25. https://s3.amazonaws.com/public-inspection. federalregister.gov/2014-04100.pdf. Accessed March 3, 2014.

(16) CA SB1413 | 2009-2010 | Regular Session. (2010, September 30). LegiScan. http://legiscan.com/CA/bill/SB1413/2009. Accessed January 24, 2014.

ABOUT THIS IMPLEMENTATION GUIDE

How to Use This Implementation Guide

This implementation guide presents actions you can take to improve water access and consumption in schools (see the *Checklist for Taking Action to Improve Water Access and Intake in Schools* at the end of this guide). Some of these steps may not apply to your school, and you may prefer to complete the steps in a different order than presented here.

Target Audience

This toolkit is a great resource for anyone interested in increasing water intake among students and staff in school settings, including school administrators, parents, teachers, nutrition services staff, health and wellness coordinators, school nurses, and school community partners.

What You Will Find in This Implementation Guide:

We provice a comprehensive description of how to start a water program at your school, including information on how you can:

- Build Your Team and Gather Support: this section discusses how to identify and build relationships with key stakeholders, and provides suggestions for how to assemble a team.
- Serve Safe and Appealing Water: this section provides details on different types of water sources, and explains how to choose a location for new water sources, test water outlets for contaminants, and remediate any water quality problems.
- Enhance and Sustain Your Water Program: this section describes ways to conduct promotional and educational activities to encourage students to drink water, and provides an overview of key components of model wellness policy language to promote increased water intake.
- Monitor Progress and Make Improvements: this section describes how to evaluate your school water program.

- Fund Your Water Program: this section provides guidance on how to identify and approach funders to secure both short- and long-term funding.
- **Supplemental Materials:** the *Water Works* guide also comes with supplemental materials including:
 - Flowchart of water quality testing procedures for testing and remediating lead in drinking water
 - Descriptions of different types of water delivery options, reusable bottles, and cups
 - Links to sample promotional and educational activities
 - Model school wellness policy language for improving drinking water access and consumption
 - Overview and examples of methods to evaluate your water program



Learning Objectives:

After using the *Water Works* guide, you will be able to:

1) compare different water sources and vessels for serving water

2) test your school's water outlets for contaminants and remediate any water quality problems

3) develop methods for encouraging water consumption at your school

4) develop and implement a wellness policy that ensures water access and intake at your school

5) conduct a formal evaluation of your water program

ACTION I - GATHER SUPPORT AND BUILD YOUR TEAM

Implementing and sustaining a successful water program requires the help of many stakeholders. For example, facilities staff may help install and maintain a water source, teachers can role model healthy beverage consumption, and cafeteria staff can help serve water during mealtimes. As you develop your water program, you will need to identify and meet with these key stakeholders. Engaging with stakeholders will help you build a team that is committed to making sure your school water program is successful. This section describes:

- how you can identify and gather support from key stakeholders
- how you can form and meet with your water team

GATHER SUPPORT FROM KEY STAKEHOLDERS

Identify Key Stakeholders

Your first step in building your team is to identify individuals who will be directly involved in implementing the water program, such as cafeteria staff, custodial and facilities staff, and district or school administrators. You will also want to seek out individuals or groups from your school, district, and community who are interested in promoting water consumption a way to support students' health and well-being.

Potential Stakeholders for School Water Programs

Stakeholders at the District Level

Stakeholders at the School Site

- Superintendent
- Food services or nutrition director
- Facilities or maintenance
 administrators
- School board
- District wellness
 coordinator

- Students
- Cafeteria manager and staff
- Custodial and facilities staff
- Principal
- Teachers
- School nurse
- School wellness coordinator
- Parent Teacher Association
- Parents

Stakeholders from the Community

- Public health professionals (e.g., community health workers at your local health department)
- Researchers
- Community-based organizations focused on health promotion
- Municipal water supplier



Meet with Key Stakeholders

After you identify key stakeholders for your water program, meet with them to discuss your plans and solicit their feedback. Below are suggested items for your discussion.

Discussion Items for Meeting with Key Stakeholders

In the table below are some of the key individuals and groups you might enlist for support of your water program (left column), along with issues you might want to discuss with each of the stakeholders (right column). In addition to these specific questions, it might be helpful to get a general idea of any concerns stakeholders have about starting a new water program.

Stakeholder Group	Key Questions to Discuss
School Administrators (e.g., superintendent, principals)	 Are there any preferences or restrictions about where water can be served or consumed at school? Does the district or school have any resources available to facilitate the program (e.g., general funds that could be used for the water program)? Does the school or district have plans to remodel or build new facilities? Can these plans include efforts to improve water access?
Food Service Staff (e.g., director of food/nutrition services department, cafeteria staff)	 What water sources are currently available during school meals (e.g., fountains available in cafeteria, bottled water served with meals)? How do the food service staff determine whether the school is in compliance with federal and state laws requiring free water access during meals in areas where meals are served and eaten? What resources does the food service staff have, if any, to facilitate the program? For example, are there monies to purchase cups or reusable bottles, or to put toward purchasing new water sources? Are the food service staff aware that "reasonable costs" associated with providing free water access are an allowable expense to the school's non-profit food service account?¹ Are cafeteria staff willing and able to assist in implementing the water program? What constraints do cafeteria staff face in assisting with the water program?
Maintenance Personnel (e.g., custodians, facilities staff)	 Are maintenance personnel willing and able to assist with any cleaning or maintenance of school water sources (including new units added as part of the water program)? For example, ask maintenance staff if they can help with the following: Picking up cups students use to access the water sources Cleaning the water source regularly What resources do maintenance staff have available to assist with the installation of new units (e.g., does the district have plumbers who can help install units)?
Students	 Do students have preferences about where water is served? Do students have preferences about what types of water delivery options should be installed? What would motivate students to drink more water?

(1) Long, C. U.S. Department of Agriculture. Child Nutrition Reauthorization 2010: Water Availability During National School Lunch Program Meal Service. http://www.fns.usda.gov/cnd/governance/Policy-Memos/2011/SP28-2011_osr.pdf. Published July 12, 2011. Accessed February 24, 2014.

FORM YOUR TEAM

In addition to engaging key stakeholders at the onset of a new water program, you may also want to form a "water team," that is, a formal team that meets regularly to work on the water program. In addition to cafeteria managers, the principal or vice principal, students, and facilities staff, you might also invite parents, teachers, and other relevant parties to join your team.

Tips for Managing Your Team

- Select a team leader who can schedule and facilitate meetings and manage group dynamics
- Choose a regular meeting time and place that works for most members. Try meeting once every 4 to 6 weeks; more or less frequent meetings may be needed depending on your team's activities, goals, etc.
- Consider dividing up work so individual members can work on the actions that are most interesting to them
- Make sure members feel included in decision-making and recognized for their accomplishments

Resource Spotlight

The State of Washington Office of Superintendent of Public Instruction has created a toolkit called School Wellness Policy Best Practices for Development, Implementation and Evaluation. The toolkit and its associated website feature sample letters to parents, community members, and staff inviting them to join the school's wellness committee. These letters can be adapted to work for water programs. Refer to the Resources supplementary material for a detailed list of resources, including weblinks.