

Health Literacy Environmental Scans of Community-Based Dental Clinics in Maryland

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The first assessments of health literacy among US adults found that a majority of them have difficulty using health information with accuracy and consistency.^{1,2} These findings are especially relevant for chronic diseases such as oral disease, which require continual self-care and ongoing professional interactions. In the early stages of health literacy inquiry, health literacy was defined as “the degree to which individuals can obtain, process, and understand basic health information and services needed to make appropriate health decisions.”^{3(p21)} Although the initial focus was on the individual, health literacy has evolved to be understood as an outcome of the match or mismatch between health literacy skills of the public and both the skills of health professionals and the characteristics and expectations of the health systems.^{4,5}

Oral health literacy has embraced this expanded framework for understanding some of the barriers to optimal oral health. The report, “The Invisible Barrier: Literacy and Its Relationship With Oral Health,” addresses several barriers. This report acknowledges that many health care providers are not trained to assess and address the literacy needs of their patients. As a consequence, they may orally present information without ensuring that the patient understands what has been communicated. Next, many health care providers use educational materials that may not have been developed with plain language and are difficult to understand and use. In addition, patients are often reluctant to admit that they do not understand something a health care provider says or are reluctant to ask questions or do not know how to ask questions for more information. Furthermore, many low-literacy patients either do not perceive that they have a problem or do recognize that they have a problem and work to conceal it because of shame or embarrassment.⁶

Oral health literacy is of critical concern for the health of the nation because higher levels of oral health literacy have been shown to be

Objectives. We conducted health literacy environmental scans in 26 Maryland community-based dental clinics to identify institutional characteristics and provider practices that affect dental services access and dental caries education.

Methods. In 2011–2012 we assessed user friendliness of the clinics including accessibility, signage, facility navigation, educational materials, and patient forms. We interviewed patients and surveyed dental providers about their knowledge and use of communication techniques.

Results. Of 32 clinics, 26 participated. Implementation of the health literacy environmental scan tools was acceptable to the dental directors and provided clinic directors with information to enhance care and outreach. We found considerable variation among clinic facilities, operations, and content of educational materials. There was less variation in types of insurance accepted, no-show rates, methods of communicating with patients, and electronic health records use. Providers who had taken a communication skills course were more likely than those who had not to use recommended communication techniques.

Conclusions. Our findings provide insight into the use of health literacy environmental scan tools to identify clinic and provider characteristics and practices that can be used to make dental environments more user friendly and health literate. (*Am J Public Health.* 2014;104:e85–e93. doi:10.2105/AJPH.2014.302036)

associated with enhanced oral health knowledge, recency of dental care visits, lower levels of dental caries, lower no-show rates, and improved oral health–related quality of life.^{7–11} Furthermore, recent data indicate that adults with young children do not understand how to prevent dental caries. This finding is especially true for adults with lower levels of education or whose children are Medicaid recipients.¹² However, the health sector cannot improve the literacy skills of the public, nor can health professionals wait until the education sector improves. Instead, health professionals and health care institutions can work to remove literacy-related barriers to health information, to preventive services, and to care.^{13–16}

To deliver high-quality, patient-centered care, health care organizations must take steps to reduce the complexity of the health care system, which can help address the mismatch between the health literacy skills of the public and the demands of the health system.^{17,18} A “health literate organization” is one that

makes it easier for people to navigate, understand, and use information and services to ensure their health. For example, steps organizations can take to become more health literate include integrating health literacy into planning, providing staff with health literacy training, providing print materials that are easy to understand and act on, and using health literacy strategies in interpersonal communications with patients.^{19,20}

In this feasibility study, we focused on the use of a health literacy environmental scan (HLES) to identify institutional or agency characteristics that enhance or inhibit access to oral health information and preventive and treatment services. Environmental scans include reviewing accessibility, signage, navigation, written communications (print materials posted in the clinic, online, and distributed to clients), and spoken communication.¹⁹ This HLES included dental clinics in Maryland located in federally qualified health centers (FQHCs) and county and city health departments. These

clinics are essential safety nets that expand access to comprehensive primary and preventive health care, and provide quality, affordable health care to the underserved, underinsured, and uninsured.

This HLES is part of a statewide model of oral health literacy assessment. The Maryland health literacy model has focused on prevention of dental caries among parents of young children and for children younger than 6 years. The model includes assessments of health literacy skills and knowledge and practices of caries prevention among health care providers, the public, and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and Head Start staff.^{12,21-23}

METHODS

Descriptions of methods are grouped into 5 categories: process, assessment of clinic characteristics, selection and assessment of print materials, and assessment of provider and patient perspectives.

Process

In 2011, we invited all community-based dental clinics (n = 32) in Maryland to participate. To encourage participation and introduce

the study, the clinic director was sent a letter signed by the state dental director, a county dental director, and the executive director of the Mid-Atlantic Association of Community Health Centers explaining the project’s purpose and inviting the recipient to participate. Next, the principal investigator contacted the dental directors by phone to request their participation in the project.

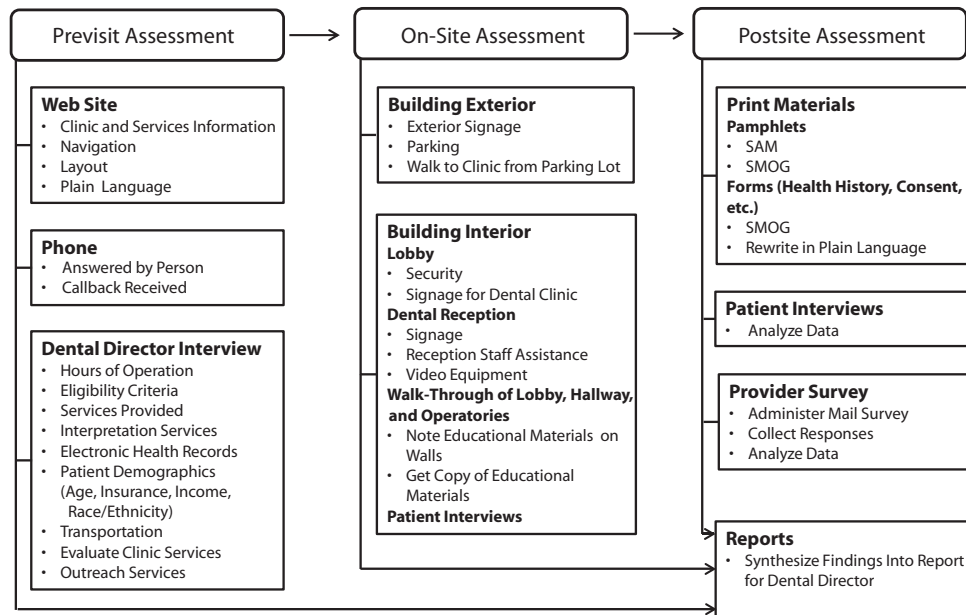
We conducted the assessments in 3 phases. The first phase, previsit assessment, included an interview with the dental director, and review of the Web site and phone system. The second phase, on-site assessment, included a walkthrough of the clinic lobby, hallway, and operatories, and patient interviews. In the third phase, post-site assessment, we reviewed oral health educational materials and clinic forms, analyzed data from the patient interviews, administered the provider survey and analyzed the results, and synthesized findings into a report for each dental director (Figure 1). We conducted assessments only with approval of the dental director and program manager.

Assessment of Clinic Characteristics

As part of the previsit assessment, the principal investigator interviewed the director by phone. Both the principal investigator and

a research assistant recorded information about the dental clinic(s) provided by the director (Figure 1 and Table 1). In addition, we navigated the clinic’s Web site to review content including information about hours of operation, available services, eligibility criteria, directions, use of plain language, and ease of navigation. We assessed the telephone system with a call to ask for directions to the clinic.

The on-site assessment included an examination of the building exterior to determine if there was a sign that could be read from the street that clearly indicated a dental clinic on site. We then conducted a walk-through of the lobby, reception area, hallways, and operatories. The site assessment protocol was based on work by Rudd and Anderson and the Agency for Healthcare Research and Quality (AHRQ).^{17,19} “The Health Literacy Environment of Hospitals and Health Centers”¹⁹ offers an approach for analyzing literacy-related barriers to health care access and navigation. “Health Literacy Universal Precautions Toolkit,” by AHRQ,¹⁷ is based on Rudd and Anderson’s guide.¹⁷ It offers step-by-step guidance and tools for primary care practices to assess their own services for health literacy considerations. The tools we developed for our HLES are available from the first author.



Note. SAM = Suitability Assessment of Materials; SMOG = Simple Measure of Gobbledygook.

FIGURE 1—Oral health literacy environmental scan in 26 Maryland community-based dental clinics, 2011–2012.

TABLE 1—Characteristics of 26 Federally Qualified Health Centers and Local Health Department Dental Clinics in Maryland, 2011–2012

Clinic Characteristics	Yes, No. of Clinics	No, No. of Clinics
Types of insurance accepted or sliding fee scale		
Medicaid	23	3
Private insurance	12	14
Uninsured	23	3
Sliding fee scale available	19	7
Clinic appointments		
Initial appointment available within 2 wk	14	12
Emergency appointment available within 48 hr	24	2
Clinic has late hours ≥ 1 d/wk	8	18
Clinic no-show rate < 20%	9	17
Clinic no-show rate 21%–30%	11	15
Clinic has a no-show or compliance policy	15	11
Clinic follows up with no-shows	15	11
Methods used to communicate with patients		
Phone	26	0
Phone system—option to speak to a live person	22	4
US Postal Service	18	8
Other (text, e-mail, Facebook)	8	18
Newsletter	3	23
Interpretation services available	26	0
Clinic Web site		
Clinic information (days, hours, phone, address)	20	6
Available services	19	7
Eligibility criteria	23	3
Oral health education information	6	20
Uses plain language	23	3
Information easy to find (1 or 2 clicks from home page)	21	5
Clinic signage		
Adequate signage on building exterior	10	16
Adequate signage in lobby (if not standalone clinic ^a)	15	6
Dental reception area clearly marked	20	6
Clinic operations		
Clinic uses EHR	18	8
Dental records are integrated with medical records	3	23
Clinic asks patients to evaluate services	21	5
Security present at clinic	8	18
Public transportation available	21	5
Medical transport service available	20	5
Clinic outreach		
Head Start—conduct screenings	17	9
Head Start—apply fluoride varnish	1	25
WIC—conduct screenings	1	25
WIC—apply fluoride varnish	0	26
School-based screening program	12	14
School-based sealant program	6	20
School-based fluoride rinse or varnish program	11	15
Conduct educational sessions in schools, community, etc.	23	3

Note. EHR = electronic health records; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

^aFive of the 26 sites visited were standalone dental clinics, which do not require signage in lobby.

Selection and Assessment of Oral Health Print Materials

As part of the on-site assessment, we walked through each clinic noting the number and content of posters and flyers displayed on the walls of the lobby, hallways, and operatories. We gathered single copies of all educational pamphlets made available to patients. Staff provided us with copies of forms used in their respective clinic including consent, health history, and postcare instructions.

During the postsite assessment, we assessed the educational pamphlets with Suitability Assessment of Materials (SAM) to determine if materials were suitable for low-literacy audiences.²⁴ The SAM scores materials in 6 categories: content, literacy demand, graphics, layout and typography, learning stimulation, and cultural appropriateness. It yields a score ranging from 0% to 100%, which falls into 1 of 3 categories—superior, adequate, or not suitable. The SAM is used to identify specific shortcomings that reduce the suitability of educational materials. Because of our focus on dental caries prevention, we assessed only those pamphlets related to this topic.

We used the Simple Measure of Gobbledygook (SMOG) readability formula to determine the reading grade level of 1 form from each clinic.²⁵ After that, we rewrote the form for the clinic director's perusal. The research team and 2 undergraduate students, all of whom were trained and standardized in the procedures, conducted the materials assessments.

Assessment of Provider and Patient Perspectives

We mailed a survey to 106 dentists and dental hygienists who provide care full- or part-time in the 26 community-based dental clinics we visited. We obtained the mailing list from the dental directors and dental clinic managers. We sent the self-administered survey directly to each provider with a cover letter explaining the survey and requesting that the recipient complete and return it. The survey was preaddressed and postage-paid. It consisted of 12 questions, was anonymous, and contained the same communication technique questions used in previous national and statewide surveys of dentists and dental hygienists.^{22,23,26} Two weeks after the only mailing, clinic directors were asked via e-mail

to urge their providers to respond to the survey.

A professional interviewer conducted brief patient interviews with 67 adults from 22 of the 26 participating clinics (patients were not available at all clinics). To recruit patients for interviews, before our on-site visit, we sent the dental director a patient recruitment poster for printing and posting to alert patients that we would be in the clinic on a certain day and time, that the interview was entirely voluntary, and that the interviewee would receive a cash incentive. The interviewer approached patients or parents of patients, explained the purpose of the 15-minute interview, and obtained consent before the interview. The interview guide was developed to provide insight into their perspectives about the clinic including their reason for being in the clinic, why they selected that particular clinic, mode of transportation and ease of finding the clinic, how they were treated, how long they waited, what kind of health information they received, whether they were involved in their care decisions, and if they were given enough attention.

RESULTS

Of the 32 community-based dental clinics invited to participate, 26 volunteered to do so. Implementing the environmental scan tools was acceptable to the dental directors and provided them with information to enhance care, education, and outreach.

Clinic Characteristics

Overall, we found considerable variation among the dental clinic facilities and operations related to clinic hours, availability of appointments, signage, Web site content, and outreach services (Table 1). For example, about one third of clinics offered late hours and patients could get an initial appointment within 2 weeks at 14 of the clinics. Twenty-four clinics could see a patient with a dental emergency within 48 hours. Another area of variation was clinic signage. Ten dental clinics had exterior signage indicating that there was a dental clinic on site. Of the 21 dental clinics colocated with medical offices, 15 had signage in the main lobby indicating where the dental clinic was located. Once one was inside the dental clinic,

the dental reception area was clearly marked in a majority of clinics ($n = 20$).

Overall, clinic Web sites were organized so that information was only 1 or 2 clicks away from the home page and online content was written in plain language. Twenty Web sites listed information about the clinic including days and hours of operation, phone number and address, available services, and eligibility criteria. Six Web sites had oral health education information or links to educational resources. Outreach services also varied although most clinics provided some form of community-based services. For example, almost all clinics conducted educational sessions in schools and the community. Many conducted screenings for children in Head Start programs ($n = 17$) and in schools ($n = 12$). Some conducted school-based fluoride rinse or varnish programs ($n = 11$) and sealant programs ($n = 6$). Only 1 clinic conducted screenings at WIC programs.

We found less variation among the clinics related to the types of insurance accepted, no-show rates, methods of communicating with patients, and use of electronic health records (EHRs) and DVD or video equipment. For example, 23 clinics accepted Medicaid and uninsured patients, less than half accepted private insurance, and 19 clinics had a sliding fee scale. Nine clinics had a no-show rate of 20% or less, and 11 clinics had a no-show rate between 21% and 30%. However, only 15 had a no-show or compliance policy to minimize the impact of missed appointments and increase utilization rates. Clinic strategies to increase utilization rates included staggering appointments, double- and triple-booking new patients and emergency appointments, and calling patients more than once before their appointment (data not shown).

Clinics were also similar in their methods used to communicate with patients in that all clinics used the phone; a majority ($n = 18$) also used the US mail because many clients did not have phones. Less than a third used other communication channels such as texting, e-mail, or Facebook, but many clinics were investigating these options. Interpretation services were available at all clinics; the majority used Language Line or bilingual employees who worked in the dental clinic or another clinic in the facility. Most clinics provided the

option to speak to a person when one was calling the clinic. That option, however, could result in a wait time greater than 10 minutes.

Two other areas of similarity included use of EHRs and DVD or video equipment in the clinics. To document patient care and communicate with health care providers, the majority of clinics ($n = 18$) used EHRs. Only one FQHC had dental records integrated with medical records. However, only 3 clinics had DVD or video equipment in the lobby or in the operatories. The patient education videos were from dental supply companies and professional organizations.

Oral Health Print Materials

All clinics used posted information, provided educational materials to patients, and used forms during appointments.

Posters. Table 2 lists the location and type of caries prevention materials. Overall, we found substantial variation in the content and numbers of posters displayed in the clinics. Most clinics ($n = 20$) had at least 1 oral health poster or flyer on the walls in the lobby, hallways, or operatories. Only 3 clinics had educational posters that mentioned fluorides. Few clinics had posters about dental sealants in either the lobby ($n = 5$) or operatories ($n = 4$). There were posters about brushing and flossing in a majority of clinics ($n = 16$), but using fluoride toothpaste when brushing was rarely mentioned (lobby: $n = 4$; operatories: $n = 4$). In 5 clinics there were bulletin boards with posters and flyers about ways to ensure good oral health, the amount of sugar in different snacks and beverages, and available community-based health services and programs such as WIC.

Pamphlets. We found a wide range of educational pamphlets available to patients on a case-by-case basis. A majority of clinics had pamphlets on the oral health of young children ($n = 22$), dental sealants ($n = 18$), and oral health during pregnancy ($n = 16$). Only 11 clinics had pamphlets on the preventive effects of fluoride and 12 clinics had information on brushing with fluoride toothpaste to prevent tooth decay. Many of the clinics ($n = 17$) also had a variety of general health pamphlets on topics such as diabetes, immunizations, women's health, and quitting smoking, but we did not assess these materials because of our focus on caries prevention materials.

TABLE 2—Educational Materials About Caries Prevention in 26 Maryland Community-Based Dental Clinics, 2011–2012

Type of Educational Materials	Yes, No. of Clinics	No, No. of Clinics
Posters		
Lobby		
Fluoride	1	25
Dental sealants	5	21
Brush and floss—fluoride mentioned	4	22
Brush and floss—fluoride not mentioned	12	14
Operatory		
Fluoride	2	24
Dental sealants	4	22
Brush and floss—fluoride mentioned	4	22
Brush and floss—fluoride not mentioned	13	13
Pamphlets		
Brush and floss—fluoride mentioned	12	14
Brush and floss—fluoride not mentioned	10	16
Fluoride	11	15
Dental sealants	18	8
Oral health during pregnancy	16	10
Oral health of young children	22	4

Results of assessing caries prevention educational materials with SAM found that nearly two thirds were rated “superior,” whereas one third were rated “adequate” or “not suitable” (Table 3). Materials considered “superior” had text written at a fifth-grade reading level or lower and used common words rather than technical terms, headings and captions to organize the material, and white space to reduce clutter. Materials considered “not suitable” were written at a ninth-grade reading level or higher, used technical terms, had information not related to the purpose of the pamphlet, had confusing illustrations, lacked white space, or did not use headers to organize the information. Of the 40 leaflets considered, only 3 specifically addressed fluorides; of these, 2 were considered “unsuitable.” The third one, “What You Need to Know About Fluoride Varnish,” was rated “superior.” Similarly, of the 5 leaflets addressing dental sealants, only 2 were considered “adequate,” and the others were “unsuitable.”

Forms for patients to complete and posttreatment instructions. We used the SMOG readability formula to rate 1 form from each clinic. The forms were consent, health intake, or posttreatment instructions. Collectively, the

patient consent forms were rated between 9th- and 16th-grade reading level, falling far above the general recommendation that reading material for the general public be at or below the 8th-grade level. The forms tended to use complex dental and legal terminology instead of common words. Also, the forms were difficult to read because of small font (8-point or less), little white space on the page, or both.

Providers' Perspective

Of the 106 surveys sent, 60 were returned for a response rate of 57%. Respondents included 57% dentists and 43% dental hygienists. Eighty-one percent were female. Race/ethnicity included 69% White, 24% African American, 2% Hispanic, and 5% Asian/Pacific Islander (data not shown).

Dentists were significantly more likely than dental hygienists to have taken a course on communication skills other than that taught in dental or dental hygiene school. Dentists also were more likely than dental hygienists to assess the level of health literacy of patients but it was of borderline significance ($P=.08$; data not shown).

Overall, respondents who had taken a course in communication skills were more likely than

those who had not taken a course to use recommended communication techniques, but it was not statistically significant. Table 4 shows the techniques reportedly used “most of the time” or “always” including “Limit number of concepts presented at a time to 2–3” (87%), “Use models or x-rays to explain” (87%), “speak slowly” (80%), “use of simple language” (99%), and “use a translator or interpreter when needed” (75%). Half of the respondents indicated that they never or rarely referred patients to the Internet and 13% indicated they refer patients to the Internet or other sources of information “most of the time” or “always.” Despite rarely referring patients to the Internet, 21% believe it is effective.

Use of the “teach-back” method (a highly recommended technique to test the clarity of information provided) was low. For the technique “asking patients to repeat back information or instructions as recommended,” only 7% indicated that they “always” use this technique; 22% indicated that they use it “most of the time”; and 33% indicated they use it “occasionally.” A related question, “ask patients to tell you what they will do at home to follow instructions,” 45% indicated they use it “most of the time” or “always.”

Patients' Perspectives

Sixty-seven patients were interviewed, including 50 women, 14 Whites, 27 African Americans, and 12 Hispanics. Of those interviewed, 8 had private insurance, 17 had Medicaid, and 21 were uninsured. Thirty respondents were in the clinic because they or their children or grandchildren required restorations or extractions. However, 22 interviewees reported being there on routine recall appointments, and the remainder were at the clinic for either our interview or other business.

All patients indicated that their dental clinic was easy to find and get to. Five patients reported it was very difficult to get an appointment in less than a month, but said that one could get an appointment more quickly if it was an emergency such as a broken tooth or abscess. All patients appeared to be very satisfied with their treatment, although some felt they had to wait a long time when they arrived at the clinic, especially for emergency care. All patients reported that they were grateful to be getting dental care at their respective clinics.

TABLE 3—Rating of Educational Pamphlets in 26 Maryland Community-Based Dental Clinics With Suitability Assessment of Materials Scoring Method, 2011–2012

Publication Title	Date Published	Publisher	SAM Score	Rating ^a (%)
Fluoride				
<i>Fluoride</i>	NA	Patterson	12/36	Not suitable (33)
<i>Maryland Community Water Fluoridation</i>	Jan 2011	DHMH	16/42	Not suitable (38)
<i>What You Need to Know About . . . Fluoride Varnish</i>	Mar 2009	DHMH	34/42	Superior (81)
Sealants				
<i>Dental Sealants</i>	NA	Patterson	20/36	Adequate (56)
<i>Dental Sealants</i>	2008	ADA	27/42	Adequate (64)
<i>Sealants</i>	2002	Krames	27/38	Superior (71)
<i>Seal Out Tooth Decay</i>	Sept 2009	NIDCR	37/42	Superior (88)
<i>Seal Out Dental Decay</i>	1996	NIDCR	37/42	Superior (88)
Children's Oral Health				
<i>A Healthy Mouth for Your Baby</i>	2011	NIDCR	40/44	Superior (91)
<i>A Healthy Smile for Your Baby</i>	2009	OHRC	33/40	Superior (83)
<i>A Healthy Smile for Your Child</i>	NA	OHRC	34/40	Superior (85)
<i>Baby Bottle Tooth Decay</i>	NA	Health Edco	35/42	Superior (83)
<i>Brush Up on Healthy Teeth</i>	NA	CDC	30/38	Superior (79)
<i>How to Help Your Child Get and Keep a Healthy Grin</i>	NA	DHMH	25/40	Adequate (63)
<i>Lift the Lip</i>	Sept 2008	DHMH	33/36	Superior (92)
<i>Oral Health and Your Young Child</i>	Jan 2011	DHMH	35/44	Superior (80)
<i>Oral Health Tips for Your Child</i>	NA	DHMH	33/42	Superior (79)
<i>Tips for Healthy Teeth</i>	NA	WIC	34/40	Superior (83)
<i>Training Cups: Choose Carefully, Use Temporarily</i>	2010	ADA	30/42	Superior (71)
<i>What's Hiding in Your Baby's Mouth?</i>	NA	CROC	20/40	Adequate (50)
<i>Why Baby Teeth Are Important</i>	1996	ADA	25/40	Adequate (63)
<i>Your Child's Teeth</i>	2002	Krames	38/42	Superior (90)
Prenatal				
<i>Dental Health During Pregnancy</i>	NA	Patterson	23/40	Adequate (59)
<i>Dental Health Tips for Pregnant Women</i>	Aug 2005	DHMH	30/36	Superior (83)
<i>Expecting? Mom's Healthy Mouth Can Mean a Healthier Baby</i>	NA	CROC	21/38	Adequate (55)
<i>For Pregnant Women—6 Ways to a Healthy Mouth</i>	2001	Colgate	35/40	Superior (90)
<i>Oral Health Tips for Pregnant Women</i>		WIC	30/36	Superior (83)
<i>Two Healthy Smiles</i>	2009	OHRC	31/40	Superior (78)
Other—oral health				
<i>How Can I Prevent Tooth Decay?</i>	2002	Crest	16/40	Adequate (40)
<i>Brushing and Flossing</i>	2003	Krames	40/44	Superior (91)
<i>Brushing and Flossing Basics</i>	NA	Patterson	28/40	Superior (70)
<i>Brushing and Flossing Your Teeth</i>	Apr 2009	DHMH	28/42	Adequate (67)
<i>Brushing Quick Reference</i>	2009	ADA	32/40	Superior (80)
<i>Foods for Healthy Teeth</i>	May 2009	DHMH	30/42	Superior (71)
<i>Fun Foods for Your Teeth</i>	NA	DHMH	25/40	Adequate (63)
<i>How to Have a Healthy Mouth</i>	Jan 2012	DHMH	32/40	Superior (80)
<i>Keeping Your Smile Healthy</i>	May 2011	DHMH	33/42	Superior (79)
<i>Plaque—What Is It and How to Get Rid of It</i>	1999	NIDCR	33/38	Superior (87)
<i>Sipping, Snacking and Oral Health</i>	2007	ADA	29/42	Adequate (69)
<i>Snack and Sip All Day? Risk Decay</i>	2008	ADA	29/42	Adequate (69)

Notes. ADA = American Dental Association; CROC = Children's Regional Oral Health Consortium; DHMH = Department of Health and Mental Hygiene; NA = not applicable; NIDCR = National Institute of Dental and Craniofacial Research; OHRC = National Maternal and Child Oral Health Resource Center; SAM = Suitability Assessment of Materials; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

^aSuitability Assessment of Materials.

DISCUSSION

The dental clinics were similar in some respects in that most clinics had a high no-show rate, dental EHRs were not integrated with medical EHRs, patient consent forms were written at a ninth-grade reading level or higher, few caries preventive posters were displayed on the clinic walls, and educational videos were rarely used. The clinics differed in their strategies to deal with high no-show rates, days and hours of clinic operation, kinds of educational pamphlets available to patients, and community outreach efforts. Each of these characteristics could either facilitate or serve as barriers to patient's access to and use of services and understanding about and compliance with recommended self-care. For example, no-show rates are high among these dental clinics; as a result, all clinics double- or triple-book patients. Thus patients often have long waits before being seen, which is frustrating for them and the staff. Yet only about half the clinics have a no-show policy in place, which tends to reduce failed appointments. This is an area that is ripe for study because missed appointments have health and economic consequences.²⁷

Although 18 of the dental clinics visited used EHRs, only 1 FQHC had EHRs that were compatible with the medical records. This compatibility of records will be especially important with regard to caries prevention in states where physicians and their staff provide counseling and applications of fluoride varnish to prevent caries in very young children. Relatively few clinics had DVD equipment or educational DVDs to educate their patients. Likewise, only a few clinics offered educational information on their Web sites. The lack of educational information via both channels constitutes lost opportunities to educate patients during their dental visit.

Many clinics provided an array of outreach services to their communities that included health education in schools, and oral screenings in Head Start and elementary schools (Table 1). Few clinics, however, were opportunistic in their efforts to provide screenings at WIC facilities. Given the oral health needs of WIC applicants, and the need of clinics to be busy, all parties may benefit by collaborating with WIC to gain access to pregnant women and their children to provide them with care and preventive education and services.

TABLE 4—Percentage Distribution of Communication Techniques Used Routinely by Dentists and Dental Hygienists and Their Perceptions of Effectiveness of the Communication Techniques: 26 Maryland Community-Based Dental Clinics, 2011–2012.

Domain and Item	No.	How Often Used?					Mean	Is it effective?			
		Never, %	Rarely, %	Occasionally, %	Most of the Time, %	Always, %		No., %	Yes, %	No, %	Do Not Know, %
Interpersonal communication											
Limit number of concepts presented at a time to 2 or 3	59	0.0	7.0	7.0	51.0	36.0	1.8	50	68.0	0.0	32.0
Ask patients whether they would like a family member or friend to accompany them in the discussion	60	13.3	23.3	38.3	17.0	8.3	3.2	49	49.0	6.0	45.0
Draw pictures or use printed illustrations	58	9.0	14.0	43.1	22.4	12.1	2.8	49	53.0	2.0	45.0
Speak slowly	58	0.0	5.2	16.0	40.0	40.0	1.9	50	68.0	2.0	30.0
Use simple language	60	0.0	0.0	2.0	32.0	67.0	1.4	52	81.0	2.0	17.0
Teach-back method											
Ask patients to repeat back information or instructions	60	18.3	20.0	33.3	22.0	7.0	3.2	48	50.0	4.0	46.0
Ask patients to tell you what they will do at home to follow instructions	60	13.3	15.0	27.0	28.3	17.0	2.8	49	47.0	6.0	47.0
Patient-friendly materials and aids											
Use video or DVD	59	49.2	25.4	15.3	9.0	2.0	4.1	44	32.0	14.0	55.0
Hand out printed materials	58	2.0	0.0	24.1	29.3	45.0	1.9	40	60.0	4.0	36.0
Use models or x-rays to explain Assistance	59	2.0	3.4	9.0	51.0	36.0	1.8	52	77.0	2.0	21.0
Assistance											
Underline key points on print materials	60	15.0	35.0	18.3	17.0	15.0	3.2	50	38.0	10.0	52.0
Follow-up with patients by telephone to check understanding and adherence	59	27.1	27.4	24.0	3.4	9.0	3.7	46	43.0	2.0	54.0
Read instructions out loud	60	5.0	23.3	18.3	25.0	28.3	2.5	50	52.0	4.0	44.0
Ask other office staff to follow-up with patients for postcare instructions	60	12.0	23.3	28.3	18.3	18.3	2.9	48	52.0	4.0	44.0
Write or print out instructions	59	7.0	15.3	29.0	25.4	24.0	2.6	50	52.0	8.0	40.0
Patient-friendly practice											
Refer patients to the Internet or other sources of information	60	25.0	25.0	37.0	8.3	5.0	3.6	47	21.0	9.0	70.0
Use a translator or interpreter when needed	60	7.0	3.3	15.0	17.0	58.3	1.8	50	76.0	0.0	24.0
Ask patients how they learn best	59	42.0	36.0	14.0	7.0	2.0	4.1	45	22.0	0.0	78.0

The review of the educational materials revealed that many of the pamphlets in use are at reading levels that exceed the reading skills of average high-school graduates. Furthermore, the scope of the content of materials was limited. For example, there were few pamphlets on the use of fluorides and dental sealants to prevent cavities. Few posters or pamphlets mentioned the 2 best caries prevention methods: appropriate use of fluorides and dental sealants. Rather, the focus was on brushing, flossing, and visiting the dentist. With dental caries being rampant among the majority of children who seek dental care at these clinics, this is a missed opportunity to educate patients and parents.

Consent forms, long noted as problematic, continue to place a high demand on patients' literacy skills.²⁸ A less arduous burden may lend greater support to patients' rights and autonomy. As a consequence, this is an area that needs further study and resolution. It is noteworthy that this aspect of our assessment was one that directors were very interested in and appreciative of the revised copy of the form we provided. Our environmental scans provide insights for dental directors and facility management related to operations and education materials. Furthermore, the survey of dentists and dental hygienists regarding their use of communication techniques suggests strongly that clinic directors should provide health literacy training for staff members.¹⁶

Like all studies, this one has limitations. First, it was a convenience sample among clinics that were more open to having the assessment conducted than others. Next, we did not include a direct assessment of spoken communication. Assessment of spoken communication between patient and providers should be included in future research.

To our knowledge this feasibility study is the first to conduct HLESs of community-based dental clinics. Although this assessment focused on safety net clinics, the response of the clinic directors to the process and findings reveal that this type of assessment could also be of benefit to other dental clinical settings as well. These findings provide insight into clinic and provider characteristics, and current practices related to oral health literacy that can be used to modify the dental environment to make it more health literate. This study confirmed the

feasibility of conducting an HLES in community-based dental clinics. It also adds an essential element to the overall Maryland oral health literacy model development and provides guidance for extending the Rudd and Anderson and AHRQ guidelines into the dental environment. Our findings can help administrators and practitioners identify and possibly modify inadvertent barriers and enhance positive practices that support access to information, and to preventive services and care. Including attention to health literacy may improve oral health services and oral health status, and contribute to decreased disparities. ■

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Contributors

A. M. Horowitz conceptualized and designed the study, directed the research, and drafted and revised the article. C. Maybury assisted with drafting and revising the article. D. V. Kleinman collaborated on the design and contributed to the refinement of the article. W. Child prepared the interview questions, conducted the individual interviews, and prepared the summary results. S. D. Radice contributed to revisions of the article. M. Q. Wang analyzed data from the dental provider's survey. R. E. Rudd made significant contributions to the refinement of the article and the study is based on her previous work. All authors approved the final version and accept responsibility for its contents.

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Human Participant Protection

The institutional review boards at both the University of Maryland, College Park, and the Maryland Department of Health and Mental Hygiene approved this study.

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