Bringing CAMBRA Into Federally Qualified Health Centers

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ABSTRACT  Federally qualified health centers serve a high volume of patients vulnerable to caries. This article examines how caries management by risk assessment, an evidence-based risk assessment tool and caries disease intervention approach, can be incorporated into federally qualified health center dental delivery systems, the potential obstacles to doing so, and the rationale for overcoming those obstacles.

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Caries management by risk assessment (CAMBRA), an evidence-based risk assessment and caries disease intervention approach, is supported in clinical practice by Western, Central, and Eastern CAMBRA Coalition dental schools, the American Dental Education Association Cariology Special Interest Group, World Congress of Minimally Invasive Dentistry, the California Society of Pediatric Dentistry, and the American Dental Association, among other organizations. Clinical use of CAMBRA also aligns with a chronic disease focus of federally qualified health centers (FQHCs). They are engaged in preventing, delaying, detecting, and controlling chronic disease. Nationally, chronic disease is among the most common, costly, and preventable health problems. In 2009, it was reported that almost 133 million — one out of every two adults had at least one chronic medical disease and their management accounted for 75 percent of all health care costs.

Dental caries is even more prevalent than the most common chronic medical diseases. Moreover, in the past decade, dental caries has increased in children aged 2 through 5. Nationally, it affects one-fourth of children in this age range. Half of the children in the United States aged 12 through 15 have caries. By age 19, more than two-thirds of U.S. residents have dental caries. Sixteen percent report untreated caries, according to data collected 2005-2008. Black and Hispanic (or Latino) persons have a disproportionately high incidence of caries and untreated caries compared to their non-black and non-Hispanic counterparts. Low-income individuals below 200 percent of the federal poverty level also have a disproportionately high incidence of caries compared to individuals at 200 percent or more of the federal poverty level.

FQHC’s Role in Chronic Disease Management

The demographics cited above by the National Center for Health Statistics align with the demographics of the patients served by FQHCs. In 2009, approximately 92 percent of FQHC patients lived below 200 percent of the federal poverty level.
and more than half of the FQHC patients were black or Hispanic. All but 15 percent were uninsured or had public insurance. As safety-net providers, FQHCs serve the most vulnerable populations — individuals who are isolated from traditional health settings because of where they live, personal factors, the languages they speak, their income levels, the public insurance they possess, or their lack of insurance.

FQHCs are structured to deliver affordable, coordinated, family centered, culturally competent, and effective care aimed at reducing health disparities and improving outcomes. As mandated by federal law, and despite increasing resource constraints, FQHCs offer an “open door” to children and adults by accepting public insurance and providing a sliding-fee scale for the uninsured.

FQHCs are health care organizations receiving grants under the Public Health Service Act (PHSA) Section 330. They include consolidated health centers, migrant health centers, health care programs for the homeless, and health centers for residents of public housing. Additionally, they include Healthy Communities/Schools, the Office of Tribal Programs and urban Indian organizations. Non-PHSA Section 330 grantees, identified by the U.S. Health Resources and Services Administration (HRSA) and certified by the Centers for Medicare and Medicaid Services (CMS) as operating in compliance with the FQHC program requirements are also eligible to participate in the FQHC program. This category of health centers is commonly referred to as “FQHC look-alikes.”

**FQHC’s Role in Oral Disease Prevention**

CAMBRA does not align so neatly with the oral disease prevention model of the largest FQHC payer, Medicaid. The Medicaid rules and regulations for reimbursement to providers do not reward an evidence-based approach to prevent or halt the progression of the underlying caries disease. Although the Medicaid scope of dental services includes preventive services, it fosters a “surgical” or “reparative” model for the delivery of care, rather than a prevention-oriented “health” model.

The Medicaid scope of preventive dental services — oral examinations, radiographs, fluoride applications, oral prophylaxes, and sealants — at the allowable Medicaid frequency help to prevent dental caries up to a point. If there are repeated acid attacks and the acidogenic bacterial challenge is sufficiently high, the beneficial effects of fluoride can be overcome. Then antibacterial therapy becomes necessary. Caries progression or reversal is an ongoing and changing balance between pathological factors, risk factors, and protective factors.

Evidence suggests that providing therapeutic and preventive services to patients according to their caries risk levels yield better oral health outcomes and greater cost-effectiveness than performing the same services to all patients equally, independent of caries risk.

**FQHCs Offer an “Open Door” to Children and Adults by Accepting Public Insurance and Providing a Sliding-Fee Scale for the Uninsured.**

**Bringing CAMBRA Into FQHCs — the Reimbursement**

Medicaid FQHC reimbursement is key to the FQHCs ability to serve low-income, uninsured individuals as the provider of last resort. In 2008, 36 percent of FQHC visits were made by Medicaid beneficiaries. Thirty-six percent of Medicaid reimbursement can equal as much as 60 percent of a dental program’s revenues. Medicaid revenues help cover the cost of providing care to the uninsured.
As a result, FQHCs are attentive to following Medicaid rules and regulations for reimbursement. A FQHC visit must be a face-to-face encounter between a Medicaid patient and any health professional whose services are reimbursed under Medicaid for the purpose of diagnosis or treatment. In addition to cost-based reimbursement for dentist encounters, California FQHCs may seek Medicaid independent reimbursement for dental hygienist services through an alternative payment methodology (APM). The California Department of Health Care Services finalized the APM this year.

The oral examination by the dentist and the anticipatory guidance by the dentist or dental hygienist with patients at the initial visit are critical. Some aspects of caries activity monitoring and most aspects of self-management support can be performed by dental assistants. However, at a minimum, the dentist or dental hygienist should reinforce the importance of caries protective factors at every visit, thereby making each and every visit a “prevention” visit.

**Bringing CAMBRA Into FQHCs — the Dental Delivery System**

Nationally, in 2008, 74 percent of the 8,000 delivery sites at 1,200 FQHCs delivered preventive dental care. (A single FQHC may deliver dental services at multiple sites.) FQHCs can and should utilize CAMBRA in all levels of prevention: primary, secondary, and tertiary.

**Primary** prevention focuses on measures that prevent the actual occurrence of caries such as breaking the chain of infection from mother to child. It is well-known that dental caries is an infectious and transmissible disease.

**Secondary** prevention focuses on early detection and management of noncavitated lesions by reversing caries lesions or halting their progression.

**Tertiary** prevention takes the minimally invasive restorative dentistry approach to cavitated lesions at the same time as measures are taken to reduce the cariogenic bacterial loading in the remainder of the mouth.

**Primary Prevention With CAMBRA**

Mutans streptococci (MS) transmission from mother to child is the primary route of MS inoculation in early infancy. Studies have shown that MS in early childhood is a major risk factor for caries during early childhood and later in life. Caries in the primary dentition is a strong predictor of caries in the permanent dentition. However, many parents remain unaware that they can transmit caries-causing bacteria to their newborns. Therefore, it is critical that the CAMBRA strategy during pregnancy continue postnatally in infancy with the newborn.

Instituting CAMBRA protocols for the benefit of our prenatal patients will not only improve the mothers’-to-be own oral health but also greatly impact their babies’ dental health outcomes. Because the incidence of early childhood caries (ECC) has increased significantly in recent years, it is crucial that dental delivery sites, including FQHCs, adopt caries primary prevention protocols because they offer real opportunities to improve oral health outcomes. Protocols include fluoride varnish applications, anticipatory guidance, and parental counseling. Dental personnel would have the opportunity to collaborate with parents concurrently about primary caregiver's and the child's caries prevention even as a dual mother/child visit.

In California, FQHCs receive Medicaid reimbursement for up to five topical fluoride applications per year for children under the age of 6, which is beneficial for children at high or extreme risk for caries. Cavitated lesions in the 0-5-year old patient population are the most challenging at FQHCs. It is very difficult to find pediatric dental specialists who are willing to work at FQHCs with this patient population. Moreover, there is very limited hospital operating room time available at which to provide treatment.

In addition to dental personnel, FQHC and community pediatricians can play a key role in primary prevention during well-child visits by screening for visible signs of caries, providing anticipatory guidance, applying fluoride varnish applications, making referrals to dental homes, and advising parents. Research has shown that physician advice is an effective driver in persuading patients to change high-risk behaviors. According to the National Academy for State Health Policy, 34 states have mechanisms in their state Medicaid dental programs to reimburse primary care physicians for providing early oral care. In California, physicians are legally permitted to apply fluoride varnish up to three times in a 12-month period to children under the age of 6. If they establish protocols, physicians may delegate fluoride varnish applications to nurses and other medical personnel.
Secondary Prevention With CAMBRA
As noted, a high proportion of FQHC patients exhibit multiple caries risk factors and early lesions at their first dental visit. Caries lesions are reversible if detected early enough. It is clinically demonstrated that the noncavitated caries lesions can be arrested if the caries challenge is reduced sufficiently or eliminated, or if the protective factors are increased. Depending upon the severity and activity status (progressing or reversing) of caries lesions, a preventive intervention or a combination preventive/minimally invasive dentistry intervention may be sufficient. Both types of interventions are options if CAMBRA protocols are followed.

Failure to use preventive measures defaults to combating caries in later-stage treatment when caries lesions are more advanced, which then results in a more time-consuming and costly treatment. In comparison, early receipt of dental care is more cost-effective. A 2004 study that examined the effects of prevention on subsequent utilization found that average dental-related costs for low-income preschool children who received their first preventive dental visit by age 1 were less than one-half ($262 compared to $546) of the average cost for children who received their first preventive visit at age 4 through 5.

Tertiary Prevention With CAMBRA
FQHCs exist to reduce barriers to access to care. Yet, a significant number of patients present for initial FQHC visits with substantial treatment needs, characterized by high caries activity and rampant cavitated lesions. They will have acute care needs that must be addressed before the comprehensive oral exam and treatment plan. Patients with frank, moderate-severe symptomatic caries lesions require palliative care such as removal of tooth decay and the placement of adhesive transitional fluoride-releasing restorative material. The return appointments for oral examinations are an optimal time to perform the caries risk assessment, teach self-management skills, and perform the caries bacterial tests. The caries risk category should be factored into treatment planning caries lesions. For the high- and extreme-risk patient requiring restorative treatment, it is recommended that periodontal care, fluoride varnish applications, preventive dental services, oral hygiene instruction and chemotherapeutic agents be administered before restorative treatment with the placement of final restorations as rapidly as possible. With CAMBRA, the use of cariostatic modalities becomes part of the evidence-based treatment for non-cavitated lesions, as opposed to “watching” them or treating them surgically.

Monitoring Caries Activity
Regular monitoring to assess positive or negative changes in the caries activity status is the most important aspect of caries management. For moderate-, high-, and extreme-risk patients age 6 years through adult, recall exams are

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Bringing CAMBRA Into FQHCs — the Support
Organizational support at each level is key to the successful clinical use of CAMBRA. Staff roles may change, tasks may increase, and some visits may take longer affecting productivity. Scheduling adjustments may need to be made. CAMBRA’s viability in FQHC settings requires staff commitment to learning the CAMBRA approach, endorsing the principles, and applying them in their patient encounters. Motivational interviewing techniques move patients beyond ambivalence to making changes. Self-management support helps patients to sustain changes. Both motivational interviewing techniques and self-management support are behaviors that can be learned and improved with practice. Staff training is necessary although it requires time away from patient care. And, of course, CAMBRA needs a champion, whether it is the dental director or another staff member who is willing to take the initiative to keep the dental clinic staff motivated and contemporary with CAMBRA because CAMBRA is an evolving strategy.

A main principle for CAMBRA implementation is informed patient participation. And it is a necessary prerequisite to obtaining patients’ commitment to follow-through. CAMBRA requires commitment by patients to: 1) attend to dental visits for monitoring the changes in their caries disease activity status; 2) develop self-management behaviors to reverse or halt caries; and 3) understand that daily behaviors determine the course of their caries disease. Sustaining a patient’s commitment to manage their risk factors at home requires the support of all members of the dental team; regular follow-up to check plaque removal effectiveness; chemotherapeutic product adherence; and maintenance of a low frequency of fermentable carbohydrate snacking.
recommended every three months. However, this frequency poses logistical challenges for the FQHC dental program receptionist/scheduler. Even if monitoring visits are incorporated into restorative and preventive visits, the wait for an appointment often exceeds three months in some dental clinics. FQHC patients are often unaccustomed to frequent dental visits and may defer a dental visit in the absence of symptoms. After FQHC patients with acute care needs receive treatment and symptomatic relief, they are less likely than patients who present initially with nonacute needs to return for follow-up care.

Even when patients intend to return for follow-up appointments, difficulties in taking time off from work, arranging transportation, and finding child-care may preclude keeping the appointments. Those factors inform the urgency for all dental staff to be supportive in the patients’ education and self-management.

Designated access scheduling, called “scheduling by design” can help dental programs by apportioning appointment slots more equitably based upon caries risk category. For example, scheduling by design could be used to reserve quarterly return restorative/monitoring appointment slots for high-risk patients with high-caries rates. Combined restorative/caries activity monitoring visits would likely appeal to patients because clinicians who follow the chronic care model report that patients do not prefer separate, planned visits for chronic disease management. As patients are reassessed to a low-risk category and their restorative treatment is completed, research shows that a single dental visit annually is sufficient to maintain their optimum oral health.

Of course, having a good scheduling system does not mean all patients will keep the appointments for some of the reasons noted above. In addition, the medical literature suggests that low health literacy levels lead to poor compliance with routine medical visits. It is likely that low health literacy levels also lead to poor compliance with dental visits. CAMBRA gains are threatened when patients drop out of care or experience significant gaps in visits. Patients with low knowledge and low literacy levels may drop out of care because they do not understand what it means to have a high caries risk level. Low literacy levels are known to impede patients’ ability to process, understand, and make appropriate health care decisions. It has been shown that dental programs that hold patients accountable for remembering appointments are more efficient and have low no-show rates.

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Supporting Self-Management

Low oral health literacy levels also affect patients’ self-management success. The Institute of Medicine defines self-management support as “the systematic provision of education and supportive interventions to increase patients’ skills and confidence in managing their health problems, including regular assessment of progress and problems, goal-setting, and problem-solving support.” Self-management support is designed to engage patients and dental team members in a partnership to agree on specific self-management goals and steps.

Self-management support is integral to treatment plans designed by using CAMBRA. For some patients, it is a matter of coaching patients to develop the habit of taking the therapeutics as directed. For others, it is coaxing them to seek refills as needed. The cost of therapeutics may be a positive or negative factor. For some patients, if they have to pay a share of cost for therapeutics, they may be more likely to use them. For other patients, paying for them may be a barrier to acquiring them. Understandable verbal and written instructions aid adherence. These factors need to be considered when engaging patients around self-management.

Supporting the Team

Caries activity monitoring and self-management support are key to achieving successful health outcomes for patients. They require that dental staff work together as a team. Teams perform well when there is good leadership, a clear division of labor, and staff training both in their individual role and in team functioning. Adopting evidence-based CAMBRA treatment guidelines as standard clinical protocols ensures that each patient in the same caries risk category receives the same evidence-based management. CAMBRA protocols guide the delivery of the appropriate comprehensive sessions including the: parent/caregiver and/or patient interview; oral examination; caries risk level assignment; bacterial testing; oral health education; motivational interviewing if indicated;
and age-specific anticipatory guidance. When these sessions are standardized according to dental program protocols, the added time component to oral examinations and other types of visits becomes predictable, inconsistencies are eliminated, and productivity guidelines can be adjusted to maximize visit productivity.

Dental programs that develop templates for progress notes facilitate efficient and complete documentation in conformity with the billing rules for Medicaid FQHC reimbursement. Well-organized and user-friendly CAMBRA treatment guideline tables in journals can be copied and laminated for easy reference. The American Dental Association, the American Academy of Pediatric Dentistry, and the California Dental Association, among other organizations, have posted noncopyrighted downloadable and reproducible caries risk assessment tools (CAT) on their websites that can be adapted to FQHC use.

CAMBRA protocols also function to define aspects of care that can be managed by nondentist team members. With training, and given sufficient time, dental assistants can maximally conduct portions of caries monitoring and self-management sessions within the scope of authorized duties in the state Dental Practice Act. In medicine, it is acknowledged that some aspects of chronic disease management may be performed better by nonphysician staff members if they possess special skills such as linguistic competency, cultural competency, teaching, and motivational interviewing techniques. These skills can also be taught and with practice, they improve. Like the medical field, some aspects of caries chronic disease management may be better performed by dental assistants. The extent to which dental team members’ cultural competence and sensitivity builds patient trust and rapport enhances favorable long-term outcomes.

**Oral Health Initiative**

Fiscal year (FY) 2009-10 marks the fifth year for the oral health initiative (OHI) of First 5 Commission of San Diego County. OHI addresses the oral health needs of young children 1-5 years and of pregnant women in San Diego County. FY 2009-10 is also the second year in which OHI has implemented the care coordination process — the caries risk assessment (CRA) — a national best practice. This method is administered to patients during oral health screenings or exams to assess their risk level for dental disease and other oral health problems. Those patients diagnosed as high risk with the CRA are coordinated to receive careful follow-up by care coordinators to guarantee thorough and seamless treatment.

In May 2010, the dental staff from OHI-funded clinics involved in the care coordination process were sur-

**FIGURE 1.** Perceptions of the caries risk assessment.*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The CRA has helped our clinic identify high-risk clients (n=15)</td>
<td></td>
<td></td>
<td></td>
<td>6.7%</td>
</tr>
<tr>
<td>The CRA tool has improved our clinic’s ability to properly treat clients (n=14)</td>
<td>7.1%</td>
<td>21.4%</td>
<td>57.1%</td>
<td>14.3%</td>
</tr>
<tr>
<td>The CRA tool has all the appropriate indicators to assess a client’s risk level (n=15)</td>
<td></td>
<td></td>
<td></td>
<td>6.7%</td>
</tr>
<tr>
<td>It was easy to integrate the CRA into our clinic flow (n=14)</td>
<td>7.1%</td>
<td>21.4%</td>
<td>50%</td>
<td>35.7%</td>
</tr>
<tr>
<td>The care coordination process makes it easier to better provide services to clients in need (n=14)</td>
<td></td>
<td></td>
<td></td>
<td>6.7%</td>
</tr>
</tbody>
</table>

veyed to assess their opinions on the CRA’s impact. A total of 15 dental staff consisting primarily of care coordinators, dental managers and administrative staff completed a survey.

Overall, respondents felt the use of the CRA brought positive changes to their clinics as shown in Figure 1. Results indicate that the CRA assists their clinics to identify and treat clients, contains all the appropriate domains to assess a client’s risk level, and serves as a useful tool in the care coordination process by providing the appropriate services to meet patient needs. The single exception was when dental staff were asked whether they agreed that integrating the CRA into their clinic was an easy process; 28.5 percent stated they disagreed with that statement. Preliminary findings suggest that reasons for this dissonance may be a result of the additional paperwork and the need to remind dental staff to complete the CRA, as noted by several respondents.

Summary

There are many examples of how care plans incorporating CAMBRA result in positive benefits to patients as well as satisfaction to dental personnel. The hope for managing the burgeoning, vulnerable FQHC population with caries disease and containing the treatment costs is through a shift to effective prevention. FQHCs have varying organizational capacities. Each FQHC is encouraged to examine its unique workflow, resources and constraints to determine the most efficient way to integrate the CAMBRA approach into patient care. Despite the cost that is associated with all prevention, including CAMBRA, the long-term positive benefits make this a practice decision that needs to be adopted by all FQHCs with dental programs.

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