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Evaluation of the Dental Health Aide Therapist Workforce Model in Alaska

Final Report

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EXECUTIVE SUMMARY

ES.1 Introduction

A majority of Alaska's Native population lives in remote villages, accessible only by airplane, boat, four-wheeler, or snow mobile. Because of this, devising effective strategies to meet their oral health needs has posed daunting, nearly insurmountable, challenges for over a century. Since the 1960s, dental care for rural Alaska Natives has been provided primarily by itinerant dentists employed by (or under contract to) the Indian Health Service (IHS) or tribal organizations. With limited access to preventive and restorative care, disparities in oral health continue to grow: 62% of children ages 2 to 5 have untreated caries, a sizably higher proportion than among comparable groups from the lower 48 states.

To address these needs, in 2003 the Alaska Native Tribal Health Consortium (ANTHC), in collaboration with tribal health organizations, began the Alaska Dental Health Aide Initiative to provide dental health aide therapists (hereafter called therapists) to rural villages. Modeled after a program that began in New Zealand in 1921 and that has now been successfully emulated in many other countries worldwide, the Initiative is part of the Community Health Aide Program. There are currently 10 therapists who were trained in New Zealand and who work in a variety of practice settings, including subregional clinics and remote villages. Working under the general supervision of dentists at regional offices, therapists may perform cleanings, restorations, and uncomplicated extractions.

In January 2008, the W.K. Kellogg Foundation, in collaboration with ANTHC, the Rasmuson Foundation, and the Bethel Community Services Foundation, requested that an experienced organization provide an independent, detailed, and objective evaluation of the initial implementation of the Dental Health Aide Therapist (DHAT) program. In this evaluation, we focused on the following five areas:

- patient satisfaction, oral health–related quality of life, and perceived access to care;
- oral health status;
- clinical technical performance and performance measures;
- record-based process measures and evaluation of clinical facilities; and
- implementation of community-based preventive plans and programs.

ES.2 Methods

In the ensuing 2.5 years, we undertook an extremely detailed examination of the implementation of the DHAT program in Alaska. Originally, we intended to conduct a comparative study using villages served by therapists vs. those that were not. However, for many reasons, not the least of which was that it was impossible to find comparable villages, we abandoned the comparative approach and instead conducted a case study of five unique villages. Villages were selected to allow us to take full advantage of the natural variability in practice circumstances to assess issues related to the DHAT program implementation under a variety of conditions. Our National Advisory Committee, in recognition of the fact that any long-term evaluation of the DHAT program will require a carefully designed and executed baseline assessment, recommended that this evaluation provide such a rigorous and foundational perspective for future use, and our revised approach was designed to help provide this information. Further, the Alaska Tribal Coordinating Committee requested that we provide data pertinent to their continuing quality improvement information needs. Our clinical and facility assessments were expanded to address this request as well.

We employed a variety of quantitative and qualitative measures to provide legitimate and robust answers to the focus areas we were asked to address. We consciously undertook this evaluation with a narrow scope in mind: to evaluate—using transparent quantitative and qualitative methods—the implementation of the DHAT program in five practice sites in Alaska. We undertook this challenging effort knowing that there are few, if any, widely accepted, evidence-based standards for assessing dental practice performance. Further, for the logical comparison group—that is, dentists in private practice—there are virtually no data for any of the outcomes that we undertook to observe and measure.

The quantitative measures that we used relied on methods that were previously published in the peer-reviewed literature, were developed by national or international organizations, were derived from examination standards used for assessing clinical competency for board certification of U.S. dental school graduates, and were informed by expert opinion of practicing professors from academic dentistry. The qualitative measures that we used were foundational ones commonly used in social sciences and health services research.

We conducted multi-day visits to sites where therapists were currently operating, as well as the regional hubs, relatively larger communities where their supervisory dentists worked. During site visits where therapists were working, we used trained and calibrated project dentists to directly observe the work of the therapists (performing restorations and other patient-specific

care). We also had the opportunity to assess, in a blinded fashion, the characteristics of prior restorations (amalgams and composites) that had been performed by both dentists and therapists. Dental records were assessed using explicit published criteria to assess measures of practice effectiveness and site and individual therapist performance. Qualitative data were derived from scores of interviews that were conducted during our multiple site visits to Alaska, as well as numerous phone conversations. On site visits and in phone interviews, we conducted semi-structured interviews using interview guides. These interviews were recorded, transcribed, coded, and analyzed using qualitative analysis software.

ES.3 Results

With regard to restorations, using well-accepted criteria for selected clinical procedures, the therapists were directly observed performing sealant placement, composite and amalgam preparations, stainless steel crown placement, and oral health instruction. The sample sizes for each of these procedures were small, as was the proportion of observed procedures with deficiencies. Prior restorations were assessed by a trained observer who was "blinded," or unaware whether a therapist or dentist had been the provider. In this convenience sample, few deficiencies were observed, and rates and types of deficiencies were similar for the two provider groups. With regard to prevention, performance measures indicate that assessment of patients' risk of dental disease is well integrated into some but not all practice sites. This is not an unexpected finding; a formal risk assessment is currently being promoted in dental schools but has not yet become universally accepted in dental practices.

The level of patient satisfaction derived from surveys was generally high and did not vary across sites or by age. Therapists were rated as explaining things clearly, listening carefully, and treating patients with courtesy and respect. As a system characteristic, therapists and other dental providers were rated as making patients feel comfortable and generally not keeping their patients waiting for more than 15 minutes. Qualitative results indicated that many persons from the villages reported that they felt access to care had improved. Many village residents reported that they appreciated being able to have dental problems addressed more quickly rather than waiting months for appointments in larger hub communities or having to wait with a toothache until a dentist might come out to the village. Many of the village residents expressed pride that an Alaska Native had been trained to provide these dental services, with the therapists serving as positive role models for the children of the village, particularly in the two village sites where the therapists reside permanently.

A fundamental factor influencing the success of implementing prevention programs appeared to be whether the therapist was living permanently in the particular village. The itinerant therapists did not have the time to divert from addressing backlogged dental needs; in addition, because of the short duration of their visits, they had fewer opportunities to develop relationships, particularly with key school personnel who often may need to be educated about the importance of oral health.

In four of the five sites, the therapist operates within a modern medical clinic constructed during the past 20 years. The number of chairs ranged from one (Site C) to eight (Site A). The fifth clinic at Site E has two chairs; it is located in a portion of a doublewide trailer that also provides temporary quarters for itinerant staff. Four of the five therapists' supervising dentists were dental directors, and the fifth was a clinic dental director. All were full-time employees of their area's tribal health organization.

The evaluation of clinic facilities, policies, and personnel assessed 91 specific items across eight dimensions, and most of these were satisfactory across all sites. A small number of items that did not meet evaluation criteria at some of the sites were noted in facilities, equipment, written descriptions of policies, and sterilization dimensions. There are no published data on how private practices or clinics in the United States would compare with the results on these 91 specific items.

ES.4 Conclusions

The various indicators that were applied in these case studies to evaluate implementation of this program demonstrate that the five therapists who were included in this study are performing well and operating safely and appropriately within their defined scope of practice. The data indicate that the therapists who were observed are technically competent to perform these procedures within their scope of practice. The patients who were surveyed were generally very satisfied with the care they received from the therapists.

Those who initially conceived of implementing a dental therapist program in Alaska recognized the magnitude of the unmet need. They planned to strategically deploy the therapists to the larger villages (those with populations of 800 or more) to address the considerable unmet need for restorative care. It was expected that the therapists, when first deployed to a village, would place their major emphasis on relieving pain from dental caries as a first line approach. All of the patient care data indicate that the therapists are practicing in this manner under the general supervision of the dentists to whom they are assigned and with standing orders defined by the supervising dentist in accordance with a scope of practice outlined through the federal

certification standards. The therapists we observed are well accepted in the villages, and serve as role models. As the burden of acute oral disease is brought under control, the second prong of this approach was to begin implementing preventive measures—including education—through the school system by village-based therapists. There are early indications that this model—implemented by resident therapists who have a well-respected role in the community—can begin to permit therapists to focus part of their efforts on preventive services. Such measures are needed as there continues to be substantial dental disease, and especially troublesome is the fact that many of the younger individuals are moving in the same trajectory as the adults seen in this study. Effecting change will take significant alterations in the oral health attitudes and behavior of Alaska Natives, and this will likely take years to accomplish. The therapists' cultural awareness and credibility in the villages can help shape changes in behaviors.