Dental Therapists in New Zealand: What the Evidence Shows

Dental decay remains the most common chronic childhood disease in the United States. More than 14.5 million low-income children went without seeing a dentist in 2011, due in large part to a shortage of dentists in many places across the nation. With roughly 45 million Americans living in these areas, a number of states are considering expanding the dental workforce to reach underserved communities. These initiatives include proposals to train and license additional types of midlevel providers, such as dental therapists, or to train existing professionals, such as hygienists, to perform a broader range of procedures, and to deploy them in areas without sufficient numbers of dentists.

Using dental therapists—similar to nurse practitioners in the medical field—to increase access to care is hardly new. These providers offer preventive care and also perform a limited number of routine restorative treatments, such as filling cavities. Dental therapists are deployed in more than 50 countries and have worked for decades in Canada, Great Britain, Australia, and New Zealand. More recently, two initiatives to expand the dental workforce were implemented in the United States. Dental health aide therapists have operated in Alaska since 2005, and similar providers began practicing in Minnesota in 2011. Other states are considering authorizing their use.

In 2012, a review of more than 1,100 studies showed that dental therapists across the globe offer quality care. Further, nothing in the scientific literature notes any problems with the care these professionals provide.

New Zealand has employed dental therapists since 1921, longer than any other country. Working mainly in primary schools,
these providers contribute to its nearly universal access to care for children. By contrast, the latest data show that more than 40 percent of elementary school-age children in the United States went the previous year without dental care. Moreover, although the two countries have similar rates of tooth decay among young children, a significantly higher proportion of school-age children—and of lower-income school-age children—in New Zealand receive treatment.

This brief provides an overview of New Zealand’s program and offers insights for U.S. policymakers about how midlevel providers can expand children’s access to dental care, prevent and treat tooth decay, and improve public health.

History of New Zealand’s Dental Therapists

Public health officials in New Zealand first noted high levels of untreated tooth decay among children in the early 20th century. The poor oral health of World War I recruits convinced the government and the dental profession of the need for more effective dental care, particularly for children. These findings helped lead to the creation of the School Dental Service (now the Community Oral Health Service), a program that trained dental nurses to offer routine preventive and restorative services in schools for children up to age 13.

These dental nurses were first deployed in New Zealand in 1921 and initially worked exclusively within schools under the supervision of a dentist. These providers—known today as dental therapists—are authorized to perform a small set of procedures, particularly cleanings, fillings, and application of dental sealants, without a dentist being on-site or examining the patient first, but a dentist is on call to consult if needed. This system ensures that children receive care without the delays that can result from requiring that a dentist be present.

Today, dental therapists provide care for children from infancy through age 18; they must have a written agreement with a dentist that allows them to seek advice and refer patients with needs outside their scope of practice. They may practice in both public and private settings, but most continue to work in elementary schools.

Training Criteria

As the profession of dentistry has modernized, the training and education of dental therapists in New Zealand has evolved. Today’s curriculum is a three-year program combining dental hygiene and dental therapy, and graduates can register with the Dental Council of New Zealand as therapists, hygienists, or both. With this training, these providers can examine and clean teeth, diagnose common oral health problems, educate patients on decay prevention, drill and fill decayed teeth, and extract primary (baby) teeth.
Children’s Dental Access in New Zealand

All children, from birth through age 18, can receive publicly funded dental care from dental therapists. In 2011, 843 licensed therapists provided services. Between infancy and age 13, children receive care within the Community Oral Health Service. Adolescents are cared for mostly by private dentists, and no publicly funded universal dental coverage is offered for adults.

Dental therapists mainly work in elementary school-based clinics. According to 2009 data, 98 percent of elementary school-age children had a dental visit during the previous year. In contrast, using the most recent available data, published in 2004, only 59 percent of children in the United States had a dental visit during the previous year.

In addition, a majority of New Zealand’s preschool-age children see a dental provider.

FIGURE 1:
ACCESS TO DENTAL CARE: NEW ZEALAND AND THE UNITED STATES

<table>
<thead>
<tr>
<th></th>
<th>New Zealand</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal dental coverage for children</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Universal dental coverage for adults</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>School-based dental programs</td>
<td>Serving most elementary schools (preventive and restorative services)</td>
<td>Serving some schools (mostly limited to preventive services)</td>
</tr>
<tr>
<td>Percentage of children ages 2-4 who saw a dental provider in the past 12 months</td>
<td>60%(^i)</td>
<td>28%(^ii)</td>
</tr>
<tr>
<td>Percentage of elementary school-age children who received a dental visit in the past 12 months</td>
<td>98%(^iii)</td>
<td>59%(^iv)</td>
</tr>
</tbody>
</table>

\(^i\) New Zealand Ministry of Health, Our Oral Health–Key Findings of the 2009 New Zealand Oral Health Survey.
\(^ii\) NIDCR/CDC Oral Health Data Query System, Percent with at Least One Dental Visit During the Year 2007, Among Dentate Persons Only, by Selected Population Characteristics (Age 2-17).
\(^iii\) New Zealand Ministry of Health, Our Oral Health–Key Findings of the 2009 New Zealand Oral Health Survey.
\(^iv\) Medical Expenditure Panel Survey, Dental Use, Expenses, Dental Coverage, and Changes, 1996 and 2004.

In 2009, almost 60 percent of the nation’s 2- to 4-year-olds had a dental visit.18 The most recent data for the United States show that in 2007, 28 percent had seen a dentist.19

In order to improve access to care for preschool- and high school-age children, New Zealand recently relocated some clinics from elementary schools to community-based settings, such as health clinics, and transitioned others to mobile units. All children and adolescents can receive care in these settings regardless of age or socioeconomic status, or whether they attend a public or private school.

### Treating Tooth Decay

Data show that children in New Zealand ages 2 to 11 are more likely than their U.S. peers to receive treatment for tooth decay (see Figure 2). Among 5- to 11-year-olds, the treatment disparity is the most dramatic. In New Zealand, 3 percent of children in this age range have untreated tooth decay, compared with 20 percent of U.S. kids.20 This age group is the primary patient population for dental therapists in New Zealand, and it is reasonable to conclude that the greater access to care provided by therapists factors significantly in the low levels of untreated decay among these children.

### Treating Tooth Decay Among Poor Children

Although there are limitations in comparing data across nations, general observations can be made about income inequalities and untreated tooth decay in New Zealand and the United States. A comparison of the two lowest-income groups in both countries indicates that a higher share of children receive treatment for decay in New Zealand, and the gap

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Figures and Notes:


in treatment rates between poor and wealthier children is smaller. Of course, when decay is not treated, it can progress to more serious infections and force families to go to hospital emergency rooms, where care is more expensive and typically focuses on managing pain. In 2009, more than 49,000 U.S. children were treated in emergency rooms for preventable dental problems.21

Figure 3 compares the rates of untreated dental decay among low-income children in New Zealand with their peers in the United States. Despite the fact that Medicaid covers many low-income children in the United States, access to dental insurance does not necessarily equal access to care. For instance, in 2011, more than half (14.5 million) of the almost 28.5 million Medicaid-eligible children did not receive dental services.22 Although both countries continue to face oral health disparities across socioeconomic groups, data suggest that in New Zealand, dental therapists play a role in minimizing these gaps for low-income children.

Prevention

Prevention is a crucial component of New Zealand’s dental health programs. Its Ministry of Health has taken many steps to improve preventive services,
including encouraging medical providers to integrate oral health into routine care. For example, “well child” visits, which are free from birth through age 5, also include dental health assessments.\textsuperscript{23} The Community Oral Health Service provides additional preventive services, including fluoride varnish applications (a concentrated form of fluoride applied to a tooth’s surface) for children at higher risk for decay.\textsuperscript{24} Dental therapists also provide preventive care such as applying sealants on molars and offering oral health education for families and children. The relocation of some dental clinics from schools to community-based settings or mobile units is another part of this effort to increase access to preventive services, especially for preschool- and high school-age children.\textsuperscript{25}

The significant rates of tooth decay in the United States and New Zealand reveal that neither country’s system of care has effectively implemented all evidence-based prevention strategies. Factors such as living in areas without fluoridated water, having diets high in sugar, and not brushing twice daily with fluoride toothpaste all lead to poor oral health outcomes. But even treatment after tooth decay has developed, while usually thought of as restorative care, serves a preventive purpose. A toothache is different from a cold or flu that will go away with time and bed rest; once a cavity has developed, filling the tooth can stop the decay from becoming an abscess or a more serious, even life-threatening, problem.

Conclusion

The dental care systems in the United States and New Zealand could both do more to improve oral health services for children. New Zealand’s one clear advantage is providing preventive and restorative care for a much higher share of its children because of its more developed oral health infrastructure. That infrastructure includes a publicly funded system with near-universal, school-based health centers staffed by personnel to manage the facilities, as well as dental therapists collaborating with dentists on call to confer if the need arises.

Both this system and the dental therapists who are a core component of it have expanded access to oral health services for preschool and school-age children, as well as adolescents. A higher percentage of young children in New Zealand see a dental provider, and their rates of untreated decay are lower than those of young U.S. children. This system also appears to have helped decrease oral health disparities for children from different income households. Data suggest that the training and deployment of dental therapists in a strong delivery system have contributed to New Zealand’s progress in strengthening children’s oral health.
Initiatives to employ dental therapists and other midlevel providers present an opportunity to help people in U.S. communities where dentists are scarce or do not serve Medicaid-enrolled children. These practitioners could also improve the efficiency of the dental team, freeing dentists to perform the more advanced procedures for which only they are trained.\(^1\) State leaders seeking to improve the oral health of children can look to New Zealand’s experience as they consider policy improvements.

**Endnotes**


11 Coates, D., Kardos, T., Moffat, S., et al., *Dental Therapists and Dental Hygienists Educated for the New Zealand Environment*.

12 Coates, D., Kardos, T., Moffat, S., et al., *Dental Therapists and Dental Hygienists Educated for the New Zealand Environment*.

13 Modern dental therapists in New Zealand can be registered in both hygiene and dental therapy, which would allow them to provide care for adults and children. However, New Zealand does not have accredited programs for this scope of practice.


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