



LIBERIA  
**DENTAL THERAPY**  
SCHOOL

## **A 10 year Oral Health Strategy for Liberia**

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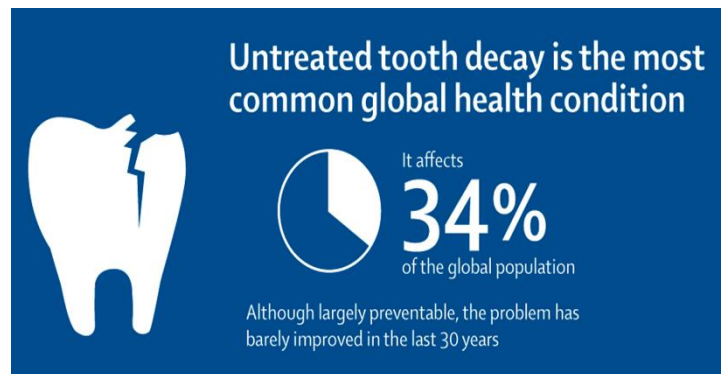
Liberia Dental Therapy School Students<sup>1</sup>

as part of an associate degree course as Dental Therapy Practitioners.

## Introduction.

Untreated tooth decay can result in acute dental infection that can cause severe pain and even death.

In addition, chronic dental infection can cause debilitating bone damage.



### National Health Survey 2021 Sierra Leone

- ▶ Survey of 6, 12 & 15yr old students from all 4 regions.
- ▶ A total of 1174 children examined.
- ▶ Over 84% of children had some dental decay.
- ▶ 25% had extensive decay needing tooth extraction.

A recent dental survey of children in neighbouring Sierra Leone showed widespread disease amongst children.<sup>2</sup>

## How severe is the problem in Liberia?

Liberia, with a population of over 5.6 million people, has suffered the effects of a civil war and more recently Ebola and Covid-19. Provision of dental care is very limited. Little dental education is available in the country at large.

There is currently no published research regarding the state of dental health in Liberia.

However, a survey of school children was conducted at the ELWA Academy<sup>3</sup> in May 2023 (to be published later in 2024).

A total of 195 children (aged 6, 12, & 15 yrs) were examined. The data showed 45-50% of these children had dental decay.

Of the 6yr olds, close to 49% had at least one cavity, of the 12yr olds 50%, and of the 15yr olds 39%.

4-5% of these reported dental pain, 1 in 5 of those in dental pain needed tooth extraction.

### ELWA Academy, Monrovia, Liberia May 2023

- ▶ Baseline survey of 6, 12 & 15yr old students.
- ▶ 159 children examined.
- ▶ Around 50% of children had least one decayed tooth.



## Trinity Dental Clinic, Monrovia, Liberia September 2022 - August 2023

- ▶ Total number of patients seen = 6355
- ▶ Diagnosed with dental decay = 2484
- ▶ Diagnosed with conditions related to trauma = 513  
(Fractured teeth related to chewing bone = 335, other trauma = 178)

Data from Trinity Dental clinic, (established at ELWA by SIM in 2008 to help meet the dental needs of the Liberian people) reveals that in the period September 2022 - August 2023 a total of 6,355 patients were seen.

Of these, 2,484 were diagnosed with decay and a further 513 had suffered from trauma (335 had broken teeth as a result of chewing on bone, while 178 had damage from other forms of trauma, including broken jaws. Over 2,500 teeth were extracted.

These limited findings point to a vast unmet oral health need in Liberia as a whole and provides valuable insight to the pattern of oral conditions. It indicates to health service providers that urgent action is required to address this silent epidemic which is a significant problem for all Liberians.

## **Oral Health Promotion and Disease Prevention**

Oral health promotion refers to the efforts and activities aimed at improving and maintaining good oral health among individuals and communities. It involves raising awareness, providing education and facilitating access to dental care services. Oral health promotion activities may also include proper dental hygiene practices such as regular brushing twice a day with fluoride toothpaste.



Oral Health Promotion and Disease Prevention are hampered by the very limited number of dentists, and dental practitioners, around the country. Generally, there is a lack of education about oral conditions. Many people refer or describe dental issues as witchcraft activities just because most of the health-related awareness in the country is about medical conditions.

Oral disease prevention is crucial in the maintenance of a healthy mouth. There are several significant oral conditions, including tooth decay, gum disease, oral cancer, noma, cleft lip, cleft palate and oral trauma.

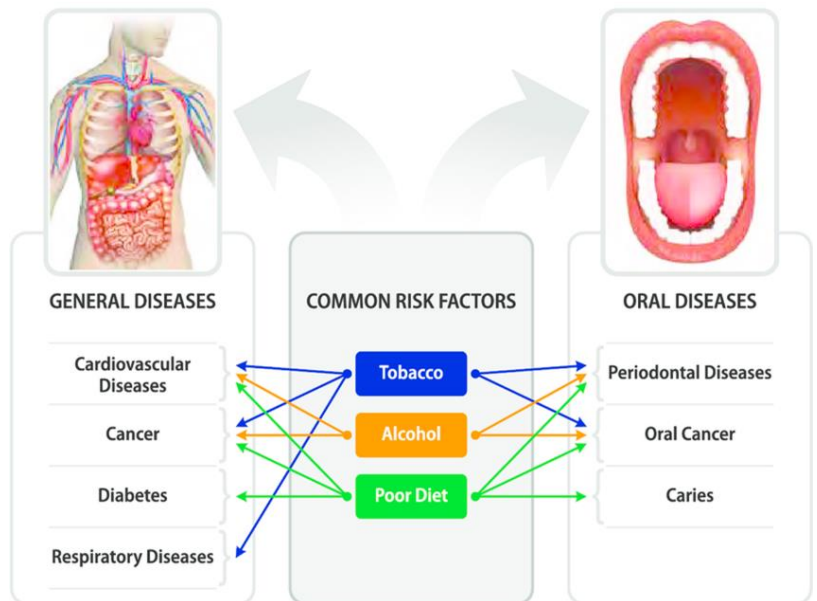
From these conditions we have focused on three oral conditions, namely, tooth decay, oral trauma, and oral cancer.

## Tooth decay

Tooth decay is due to a combination of oral bacteria and sugar on the teeth over a period of time.

Promoting healthy diet: consuming a well-balanced diet rich in fruit, limiting sugar and acidic foods as they contribute to tooth decay.

Discouraging the intake of alcohol and tobacco. Alcohol and tobacco contribute immensely to oral conditions such as gum disease, loose teeth, oral cancer in addition to other health problems, diabetes, heart problems, etc. Eliminating these habits can improve better oral health.



Prevention of tooth decay: tooth decay is a major need to be addressed in Liberia. Tips for preventing tooth decay include:

- the use of fluoride of toothpaste with a soft toothbrush.
- introducing the swish and spit method of rinsing following brushing.



- increasing awareness of oral hygiene and diet advice promoted in the schools through ministry of education. Consider using teachers to instruct and supervise daily tooth brushing.

- Avoid using the hard wisdom toothbrush, it may lead to another dental problem called abrasion.



- Promote awareness and education through community engagement, radio programmes, social media, and newspaper articles.

## Oral trauma

Oral Trauma refers to injury or damage to any part of the mouth through road traffic accidents, particularly motor bike accidents, sports injuries, falls and domestic and social violence.

Prevent oral trauma by:



- a. Providing education to stop people using their teeth as a tool to open bottles, this breaks teeth.
- b. Avoid chewing on bones to prevent irreversible fractures to back teeth.
- c. With the help of the government and ministry of health to promote driving tests for car drivers and motorbike riders to ensure drivers are trained and qualified; because we observed that most of our dental trauma cases that come to the ELWA dental clinic are caused by car accidents, motorbike, or tricycle car users.



- d. Enforcing laws that will allow both motorbike riders and passengers to use helmets.
- e. Enforce the use of seat belts.

### **Oral cancer**

Oral cancer- refers to the overgrowth of abnormal cells within once particular part of the body.

Preventive measures include limiting alcohol and tobacco intake through banning advertising and increasing taxation and early intervention when unusual lesions are noticed in the mouth.

### **Developing a workforce Strategy for the next 10 years**

Liberia has over 5 million people and is among one of the few countries in the world that has no formal dental training programme. Meanwhile, oral diseases pose a major health burden for many Liberians, the impact of poor oral health is far reaching across the population and has severe consequences for general health, also affecting the economic and social development of the country.

The acute shortage of dentists and dental practitioners in the health system has posed a serious public health problem. It is estimated that currently Liberia has (8) eight dentists and (17) seventeen dental therapists that are providing dental services for the entire population. The majority are in the capital city, Monrovia.

In this article we recommend that the government of Liberia and other international supportive partners see the need to help support our proposed workforce strategy to promote oral health and disease prevention for the next 10 years. We would like to begin with:

#### **An Advanced Professional Education and Training Programme.**

The workforce strategy will focus on creating or expanding the educational opportunities for oral health professionals. Incorporating oral health promotion and disease prevention into the curriculum of schools, and other health professions, will empower future professionals with skills necessary for preventive care. Additionally, continuing education and professional development programmes should be offered to existing practitioners to update their knowledge and skills in oral health promotion.

#### **What has been done so far?**

Trinity Dental Clinic was established in 2008 at ELWA hospital in Monrovia to help meet the dental needs of the Liberian people. The clinic has a facility of 8 clinical rooms<sup>4</sup> and currently has 20 staff employed.



These include a Liberian team of a dentist, dental practitioner, 3 senior dental assistants who extract teeth, 2 hygienists, 2 denturists, along with 4 expatriate missionary dentists.

The clinic currently has three Liberian members of staff training abroad to become fully qualified dentists, in Kenya, Philippines and Rwanda respectively. They are due to qualify in 2025, 2028 and 2029. But this is clearly still not enough to deal with the majority of the population that reside in Montserrado county and the rest of the counties.

### **The Liberia Dental Therapy School (LDTS)**

Trinity Dental Clinic established the LDTS in October 2022, in partnership with Cuttington University. The Liberia Dental Therapy School (LDTS) provides a two (2) year associate degree programme for dental therapy practitioners (DTPs).



The goal is to qualify seventy (70) students within the next 10 years. The graduate DTPs will be spread throughout the 14 counties, excluding Montserrado, to serve accordingly. It plans on achieving this by training at least five students from each county.

Upon graduation, the graduates will be registered to practice with the Liberia Medical and Dental Council (LMDC) and work in existing clinics and hospitals using equipment purchased from the UK charity, Dentaid<sup>5</sup>.



We believe that in creating a strong workforce. The LDTS strategy is unique and will help Liberia as a country improve her oral health.

In conclusion, three qualified Liberian dentists coming from abroad adding to the current fifteen dental therapy practitioners that are training at the Liberia Dental Therapy School will make a good initial start from a private institution.

We therefore encourage the Liberian government to support this great initiative. The goal to qualify seventy students to work in the fourteen counties within Liberia over the next ten years is commendable and is worthy of all support.

### **Location, Funding, and Supplies/Maintenance**

There are three main factors involved in maintaining these dental therapy practitioners: their location, funding, and support.

a. Location. Finding key locations for dental personnel to work.

It is vital to gather information: firstly, regarding existing facilities that have a dental clinic, but with no one there to work in it; be it government or private. And secondly, other clinics, whether government or privately owned, that would be able to provide a room for a DTP to work.

This requires engagement from both government and private companies to get involved; be it companies like Firestone, LAC, Bea Mountain and mining companies and NGOs so that this plan can work.

b. Funding. Who is going to support the DTP graduates? Who is going to pay them, are they going to be paid from the money that they will charge the patient (self-employed) or from whom they are working (employed)?

c. Supplies. We are thankful to Dentaaid that there is a source of equipment (this has to be funded). However, supplies of dental materials could be an issue. Some of the dental materials can be sourced locally e.g. masks, gloves but many of them are not in Liberia. A suitable supply source will need to be established to ensure lack of supplies is not a limiting factor.

### Lobby for Support

With all that has been said, we know to achieve all of these things requires the backing, support and finances of everyone.

The Trinity Dental Clinic has been started in partnership with other Christian organizations to help fund the project (the Liberia Dental Therapy School), however there is still more finance required to achieve these modest goals.

We seek support from the government of Liberia and other local companies. We are confident that with an agreed strategy along with adequate funds the project goal can be realized.

### Conclusion

- ▶ Let us work together to improve the oral health of this nation, Liberia.



### Notes

1. Presentation prepared and delivered orally by Dental Therapy School students 2022-24 as part of their training. Report edited for publication by Dr Simon Stretton-Downes OBE BDS Principal Dentist Trinity Dental Clinic and course tutor.
2. Published: 14 June 2022 in eBDJ. "Unmet need in Sierra Leone: a national oral health survey of schoolchildren." S. G. Ghotane, S. J. Challacombe, P. Don-Davis, D. Kamara & J. E. Gallagher. See <https://www.nature.com/articles/s41405-022-00107-7>.
3. As yet unpublished data, gathered in May 2023 by Dr Charlotte Curl, Consultant in Special Care Dentistry, Kings College, London.
4. As of February 2024, expanded to 12 clinical areas.
5. Dentaaid – see <https://www.dentaaid.org>