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Shining a Light on Noma: A Cruel and Disfiguring Disease of Poverty

In 1986, shortly after I graduated as a dentist, I left Canada to embark on an adventure that I had been planning since childhood — to work as a dentist in Africa. I had previously worked in Africa, but my stay was cut short for political reasons, and now I was determined to return for a lengthier time.

The country that I went to live in was Mozambique, in the southeast part of the continent, where a civil war was being fought. As a dentist, I encountered many situations that I would never see in Canada. The entire experience shaped me as a person and as a dentist for the remainder of my career.

It was during my time working there that I came across my first patient with noma. This is a particularly horrible affliction, also known as cancrum oris, or gangrenous stomatitis. It is often fatal; if the patients, usually young children aged one to four, survive, they are left in such a disfiguring and debilitating state that pain, stigma, and difficulty eating and speaking will forever mark their lives.

I remember vividly when the Mozambican nurse in the Hospital Central de Maputo presented this young child, approximately three years old, to me. He had an enormous bandage around his face, akin to wrapping a towel around it. The nurse slowly unwound the bandage to expose and irrigate the wound. The child's eyes could not hide the terror that he was experiencing. He did not cry. At that moment, I learned the definition of stoicism.

When the bandage was fully removed, I saw a wound similar to ones that I had previously seen in other patients, but the difference was that a bullet did not cause this, poverty did. Mozambique was in the midst of a war and, in war, anything goes. As a health-care worker, you see the worst of what humans are capable of doing to each other.

The wound caused by noma essentially amounted to the mid third of the child's face being eaten away to expose a window into his oral cavity; displaced teeth, severed tongue, and anything else that got in the way of this terrible disease. It was like a bulldozer of germs was

Maryam, 4, plays in the courtyard of the hospital. Over a period of eight months she has undergone four reconstructive operations, including a skin graft taken from her chest to replace tissue destroyed by noma.

Sakina, also 4, has had many visits to the noma hospital since 2013. She has already been through two stages of surgery.

Sufyanu, 2, is fed at the hospital 10 days after he was admitted. Malnutrition is an important risk factor that leads to noma; the disease then worsens the situation by making it hard to eat.

intent on plowing its way from the inside of the mouth through the cheek to reach its goal, the outside world.

The child started to cry only when his wound was fully exposed, perhaps because my eyes gave me away as I examined the horrific condition, even though I harnessed all of my professional composure not to flinch, difficult as it was. I don't know if the child survived, but it's more than likely he did not, given the circumstances.

Noma is a severe oral infection caused by a mixture of bacteria that leads to necrosis of tissue. The term noma originates from the Greek work "nomein," which means to devour. A triad of conditions contributes to noma: poor oral hygiene, malnourishment and an immunocompromised state, usually a result of malaria, measles and/or HIV. All come together like a perfect storm, followed by quick and rapid destruction of tissues. Many young children die, with mortality rates of approximately 90 per cent. The WHO estimates that 500,000 people are affected, and there are 140,000 new cases each year.

If we look at the causes of noma, poverty underlies each of the risk factors: lack of food, inadequate protection from malaria, measles, dysentery etc. due to lack of bed nets, vaccinations and clean water, and poor oral hygiene and access to dental care.

Noma is one of the most destructive and disfiguring diseases of poverty that I have ever come across. The look in the child's eyes, said it all: "Why me, what did I do to deserve this?" I remember leaving this clinical interaction feeling angry, and ever more determined to use my dental degree to address poverty in any manner possible. During my three-year stay in Mozambique, I unfortunately saw other cases of noma, each time inciting a deep feeling of injustice and anger inside me.

Fast forward 30 years. One would think that development and advancement in Africa and many other countries steeped in poverty would eradicate this condition,

When Sufyanu, arrived at the hospital, he was acutely sick and the disfigurement process had started. He was given antibiotics, his wounds were cleaned and dressed and when he regained strength, he was discharged. He has to wait until he is older before he can have reconstructive surgery because the facial wounds caused by noma are complex and continue to change during a child's growth.

Adamu, 14, during a screening session at the hospital. Adamu and his two brothers got measles. His brothers recovered, but Adamu developed noma. His father has made it a personal battle to get surgery for him. Six months after this photo was taken, Adamu's nose was reconstructed from a piece of his rib and a skin graft from his scalp (see following photo.)

Umar, 8, and Adamu, now 15, stand at the entrance of the post-operative ward. The two boys are looking forward to going outside. They recently underwent surgery and are confined to that ward for four to six weeks to avoid infections.

but no. While working in Ethiopia a few years ago, I saw another case of noma; same scenario, different patient. This child survived after many surgeries, but was grossly disfigured. Once again, the same question arose in my mind; how could we stand by and allow this condition to continue?

I have no answer. My anger has abated somewhat, possibly filtered through a more mature and less impulsive mind, but more likely it's because I have seen much more to be upset and shocked by at this point in my career. My determination to work towards social justice in dentistry, however, has not changed; only my approaches have.

As I reach the twilight of my dental career, I reflect on the path I have taken and find that I have channelled my anger into productive approaches to address poverty. These include working on anti-poverty initiatives at a dental school, where I teach, and dedicating myself to providing dental care for some of the highest-need individuals in the city where I live; people who suffer from addictions, mental illness, poverty and homelessness.

What pearls of wisdom can I pass on to the next generation of dentists? I am unsure what to say; perhaps to remember that we have a social obligation to use our highly trained skills to reach those who, often times, do not show up at our offices. OD

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All photos on these pages are of patients at Sokoto Noma Hospital, Nigeria, taken throughout 2016 and 2017. Founded in 1999, it is one of the few hospitals in the world that is dedicated to treating children and adults who have noma, including reconstructive surgery.