

1. [SLIDE] TITLE \*\*MEDIA HANDOUTS

***Rampant and neglected: malignant mouth cancer and dental disease:  
their burdens and ultralow cost solutions for PNG***

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2. [SLIDE]

Good afternoon distinguished guests, colleagues, ladies and gentlemen.

**What is the world' most common childhood disease?**

**It will affect over 90% of the world's children.**

What is the world's most common chronic disease, the world's most neglected disease and most common cause of pain in the world?

Over **80% of children** will suffer pain from it. It can be the **worst pain** you will ever feel in your life.

3. [SLIDE]

**This disease is dental disease, usually from tooth decay.**

**The relief of dental pain by the control of dental disease is a growing problem to solve for many Asia Pacific nations, and not Papua New Guinea alone.**

PNG dentists are overwhelmed by rampant dental disease with only one dentist per 90,000 people.

**Adding to this burden, the population may double within the next two decades.**

4. [SLIDE] dmft surveys

For decades, dental disease has been widespread throughout PNG with surveys from 1985 showing up to six decayed teeth per person.

For children, Dr Bandara found treatment was needed in over half the children surveyed in 1997.

In remote Western villages in 2013, there were three untreated decayed teeth per person on average.

During my Kokoda Track survey, 37% of adults with decayed teeth complained of current dental pain.

**Strong pain can disable people.**

**In children, chronic dental pain and suffering can prevent the chewing of normal foods.**

**The child can then become malnourished and then do not reach their normal growth potential.**

5. [SLIDE]

To give a human face to these grim statistics, here is a typical story of a child's long suffering from toothache.

Her mother told me her child, only four years old, was in pain most days for the last two years, half her life so far.

There was no dental worker in their region.

Due to pain, she could only eat bananas, so her general health was affected.

To stop her pain I had to remove twelve infected and decayed teeth.

6. [SLIDE]

***These great unmet burdens of current disease and pain, and a doubling of the future burden, means there is a crushing need for prevention that is effective and permanent.***

***Prevention represents the single best investment in health.***

Australia provides substantial investment in health and education in PNG.

***Australia's educational development impact is reduced because children miss school due to their dental pain and their education suffers.***

Adults with strong pain cannot work or are less productive at work due to pain.

This results in an ongoing loss to the economy as well as extra costs to the health system for pain relief.

***So prevention will increase productivity at work places, improve school attendance, and children's health and so will enhance aid impact.***

7. [SLIDE] prevention of disease by fluoridated water, toothpaste, salt pictures

While dental disease is the fourth most expensive disease to treat, its prevention can be by far the cheapest of all the world's major diseases.

There are three preventive methods that dramatically reduce dental disease worldwide.

They all involve the key agent: fluoride.

The two best known methods are: fluoride toothpaste and fluoride added to the town water supply called water fluoridation.

Fluoride is a natural mineral that is found in varying amounts in all water.

Fluoride not only makes teeth stronger and resistant to decay, it actually remineralises decayed teeth, that is, fluoride can reverse early decay.

8. [SLIDE] YWAM ship and fluoride SAMPLING results

So is there any decay protection in drinking water in PNG from the natural level of fluoride present?

From my research sampling so far, the natural levels of fluoride in the drinking water sources of villages, towns and cities including Port Moresby, Alotau, Kokopo, and Popondetta are extremely low.

((They ranged from 0.012 to 0.105 parts per million fluoride)).

The minimum water fluoride level needed to protect teeth from decay is 0.5 parts per million.

This means there is no tooth decay protective effect from these very low natural fluoride levels in the water surveyed.

It needs to be remembered that 87% of the population is rural, so most of the population lacks central water supplies.

This means water fluoridation is not a universal solution as it could not cover 87% of the population.

Fluoride toothpaste is not a universal solution either as its regular purchase is beyond the financial means of disadvantaged rural villagers.

***This leaves one proven preventive solution for PNG.***

**9. [SLIDE]**

This solution has been effective for three hundred million people in thirty nations of Europe and America over the last thirty years.

***It can benefit all people, city and rural, young and old.***

With this method, reduction in decay is rapid, down 10% each year, reaching a massive permanent reduction of 50 to 65% in just five years.

**10. [SLIDE]**

International studies show that it is an ultralow cost solution.

Cost benefit ratio is from one in 40 up to one in 240.

That means that for every single dollar or kina invested in prevention, up to 240 dollars or kinas can be saved in future fillings and tooth extractions and an immeasurable amount of suffering prevented.

Cost can be less than ten cents per person per year.

By comparison, water fluoridation costs around ninety cents per person per year.

For Bolivia with 7 million people, the cost for the first five years since 1994 was US\$ 785,000 to prevent 10 million decayed teeth which saved US\$ 32 million.

**11. [SLIDE]**

***This fantastic public health achievement is by the simple addition of fluoride to common table salt used in the diet, or salt fluoridation.***

***The W.H.O. has credited salt fluoridation as the single most effective, equitable and practical strategy for the mass reduction of tooth decay in the world's population.***

***It gives automatic protection.***

***Prevention by fluoridated salt is an innovative approach that will transform PNG dental health within five years.***

***Just last year, Professor Siddiqi, Head of the PNG Dental School, and his coauthors strongly advocated for salt fluoridation in their landmark publication "Oral health in Papua New Guinea".***

Only the usual amount of dietary salt is consumed, no more.

We are certainly not advocating the increased use of salt.

Fluoride does not alter the taste of salt. Its safety has been proven by international research.

## 12. [SLIDE] EFFECTIVENESS OF SALT FLUORIDATION tables

These examples from America and Europe demonstrate the dramatic reductions in tooth decay of over 50% from salt fluoridation.

Look at the outstanding reduction for Jamaica.

## 13. [SLIDE] STORY OF DOCTOR SISTER ROSALIE WARPEHA AND JAMAICA

Staying with Jamaica, there is a great story about salt fluoridation that might warm your hearts.

In 1971, a young 30 year old dentist aid volunteer, from the United States, who was also a Marist missionary sister, was on the world's very first medical aid ship, the SS HOPE, visiting Jamaica, an island nation of three million people.

She despaired over the hundreds of painful and rotting teeth she had to remove.

Dr. Rosalie Warpeha then moved to Jamaica and spent the next ten years relieving pain and suffering in children.

Rosalie became affectionately known in Jamaica as "Doctor Sister".

Rosalie then went back to the United States to research the best way to reduce dental disease in her adopted country.

Although it had never been tried in a developing country, Rosalie decided that salt fluoridation would be an ideal solution for an island nation like Jamaica.

With charm and persistence, she persuaded the Jamaican government to fortify salt with fluoride in 1987.

Her groundbreaking salt fluoridation program led to an amazing 83% reduction in tooth decay in children in just five years.

In an interview about these great results, Rosalie was asked whether she would describe this 83% reduction as 'striking,' 'dramatic' or 'highly significant.'

Rosalie replied with a smile that she personally felt it best for this result to be described as 'miraculous.'

Doctor Sister Rosalie, the salt fluoridation champion of Jamaica, passed away in 2006 at the age of 64.

## 14. [SLIDE] iodine to imported PNG table SALTS

Unlike the Jamaican government, fortifying table salt as a vehicle for preventive health delivery is not a new idea for the Papua New Guinea Government.

In 1995, the PNG Government made iodide addition to imported salt compulsory to reduce cretinism and thyroid disease by a simple amendment to the Pure Food Act.

The industrial process of mixing fluoride into already iodised salt before importation to PNG, is simple and very low cost for the Asian and Australian salt industries.

Adding fluoride does not change the effect of the iodide.

**15. [SLIDE]**

**In 2007, the W.H.O World Health Assembly recognized that universal access to fluoride for dental health is a part of the basic human right to health.**

**In 2005, The W. H.O. published a practical guide for governments and health professionals for introducing national salt fluoridation programs.**

**The WHO Oral Health Program also provides technical support for new programs.**

**16. [SLIDE]**

***So what's our pitch? We make three recommendations for salt fluoridation to work.***

***Our first is to appeal for a small amount of aid for a national fluoride mapping study of drinking water sources by the PNG dental school.***

**This research on a national scale would verify my initial research that showed natural fluoride levels in drinking water is very low across PNG.**

**If we know definitively that natural water fluoride levels are low across the nation, we know that salt fluoridation is suitable for the whole country.**

***Our second recommendation is to provide aid for the PNG dental school to educate the people and Government in the effectiveness and safety of fluoridated salt, gain their approval and promote the need for action now.***

***This is key, as everyone needs to be on board for this to work.***

***Our third pitch is that dental disease takes away the enjoyment of life.***

***Its pain is stealing away the smiles of children.***

***Action now to fund and legislate for salt fluoridation will bring these smiles back.***

***Action and aid now will enhance the health and impact the lives and well-being of PNG children within five years.***

***Without fluoridated salt, there is no solution for the suffering children of PNG.***

17. [SLIDE]

**Let's now turn our focus to a second mouth disease that is also a rampant and neglected scourge: malignant mouth cancer.**

**Mouth cancer is often deadly.**

**PNG has the world's highest rate of malignant mouth cancer.**

Mouth cancer comprises 25% of all cancers in PNG, compared to 2% in Australia.

**A disturbing trend is that it is now becoming a disease of young people in PNG.**

**As well, PNG has the highest incidence of mouth cancer in women in the world.**

18. [SLIDE]

Untreated it quickly leads to death, with much pain, suffering, social isolation, loss of function and facial deformity along the way.

It's the number one cancer killer in males, and the third highest killer among females.

**This is often because of delays in diagnosis, leading to delays in treatment.**

**Sadly, very recent research by Dr Maga has found early diagnosis is very uncommon and delayed detection is the norm.**

Because of this, patient long term survival rates can be as low as 20%.

**If these delays can be reduced, it means the growth may be removed while still small, and the long term survival rate could increase to 80%.**

A landmark study in India proved early detection made a significant improvement in long term survival rates.

19. [SLIDE]

**Four types of delays** result in late diagnosis and treatment.

First is the delay in the patient seeking care due to **their lack of knowledge of mouth cancer symptoms.**

The second delay is from **the health worker not recognising early signs of mouth cancer** thus delaying their diagnosis of cancer.

The third delay is the time it takes **to arrange a biopsy**, so treatment can start.

The final delay is in getting **treatment.**

Together these delays can average **six to eight months.**

For one patient with a large cancer, an operation can take all day, so waiting lists can become long.

In contrast, by being diagnosed early, while the cancers are small, operations are shorter, **meaning up to five times as many operations in a single day. Even more importantly, early operations mean survival rates go up towards 80%.**

20. **[SLIDE]**

Funding our three pitches will enhance well the impact of Australian health aid spending with many more young cancer victims surviving.

The aid spending needed for our three pitches *is tiny* compared to two heartbreaking predictions made by Dr Chris Acott, at the PNG national medical conference last year.

Dr Acott predicted that ***mouth cancer cases will double in twelve years' time and its treatment could consume most of the health budget within a few years.***

21. **[SLIDE]**

Our first pitch is for long term aid to increase early diagnosis ***by education of health workers and the public about the signs of early mouth cancer*** and to seek help early.

Health workers should routinely examine the mouth as many people first come to seek advice from dental workers, community health workers or doctors, so everyone becomes "mouth aware for cancer".

All three groups need to be ***upskilled in detecting early cancer quickly.***

They then need to swiftly refer on to a surgeon or dentist able to do a biopsy.

To further reduce delays, our ***second pitch is that more dentists need upskilling in biopsy techniques.***

I started training dental students in 2017 as a self-funded volunteer.

As well, oral pathologists need to be trained and their positions funded to examine biopsies.

22. **[SLIDE]**

Our third pitch is to reduce ***the three most important causes of mouth cancer in PNG - betel nut chewing, tobacco smoking and heavy alcohol consumption.***

Each risk factor alone can multiply the risk of cancer by ten times compared to non-drinkers and non-smokers and with combined risk factors, it multiplies to around forty times.

50 to 80% of people smoke tobacco.

Once reserved for sacred events, up to 80% now chew betel nut, including pregnant women.

A growing tragedy is that it is common for children as young as eight years to chew betel nut regularly.

A local ENT surgeon ((Dr Molumi)) said these children would be likely to get cancer before the age of 30.

23. **[SLIDE]**

24. **[SLIDE]**

25. [SLIDE]

With our third pitch, there needs to be **permanent public campaigns for prevention; to warn about the most common causes of cancer, together with national educational websites perhaps using Facebook.**

**I have published a simple Facebook page called “Do you have mouth cancer” using photos and descriptions in Tok Pisin to educate people about the signs of early mouth cancer. (“Sapos yu igat maus kensa?”)**

**Using Facebook for public health education has the advantage that there is no cost to people for access and access is easy from their mobile phones.**

**At schools, a permanent prevention campaign about the dangers of betel nut chewing and smoking is a must.**

26. [SLIDE]

To sum up, our three recommendations aim for **long term dental school funding both for training of health workers to speed up diagnosis; and to design public education strategies for both early detection and cancer prevention.**

**The health impacts will be more young people having an 80% chance of a long productive life rather than a 20% chance; and much less mouth cancer in PNG.**

**The vision of the Government to make PNG a healthier and happier society will need funded solutions for two great health burdens in PNG: malignant mouth cancer and painful dental disease.**

**The solutions we suggest are proven, innovative and ultralow cost.**

**Thank you very much for your time.**