

## Nau mai, haere mai,

Happy New Year & welcome to the first issue of 'On Tap' for 2012. We hope you had a restful holiday season, and are enjoying the challenges and opportunities a new year brings.

We would again like to thank those who provided feedback and suggestions on our newsletter and would love to hear more from you on what is helpful & you would like to know more about.

Our year has started off well with the completion of a baseline evaluation for our service. The evaluation report 'The knowledge, attitude and confidence of health officials in communicating fluoridation information' discusses the results of a survey and interviews with those in District Health Boards and Public Health Units who have worked on and/or have responsibility for water fluoridation in their district. The baseline data will be used as a guide for the development of resources and information relevant for those we work with.

You can read the complete evaluation at [www.nfis.org.nz](http://www.nfis.org.nz). A summary of the evaluation is included in this newsletter.



**NFIS**  
National Fluoridation  
Information Service

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## BASELINE EVALUATION FOR NFIS

### Summary of findings of "The knowledge, attitude and confidence of health officials in communication fluoridation information – baseline research for the National Fluoridation Information Service evaluation"

The report makes for interesting reading with implications and challenges not only for NFIS but for all of us involved in community water fluoridation.

#### Involvement/respondents

The total number and role of health officials in Public Health Units and DHBs in New Zealand involved in community water fluoridation is unknown, as a result a sample of 62 people from varying DHB roles were surveyed. Most of the survey respondents worked in Public Health Units with over half being Medical Officers of Health or Public Health Physicians, the remainder of the sample included dental clinicians, service managers, public health promoters and strategists.

#### Analysis

Many of the respondents agreed that increasing their knowledge about fluoridation research would be helpful and that having current research material improved their ability to provide information to others.

Respondents identified several types of information that would be useful such as:

- ◆ expert review of key fluoridation issues
- ◆ authoritative critique of current and often quoted studies
- ◆ recent data showing the impact of stopping community water fluoridation
- ◆ summaries of other community water fluoridation campaigns
- ◆ support with communications

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For more information visit [www.healthysmiles.org.nz](http://www.healthysmiles.org.nz)

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- ◆ New Zealand specific data.

Responses to the survey questions also suggested that the three most important factors influencing the community water fluoridation decision making processes were:

- ◆ the political will of the local authority
- ◆ support of community groups
- ◆ the local authority's understanding of fluoridation outcomes.

**Limitations**

The survey sample may not represent the population of health officials that have, or are likely to have, involvement with fluoridation issues. However as the 42 respondents represent all off the Public Health Units, across a range of roles, some conditional conclusions about the knowledge, views and confidence of health officials in providing information about community water fluoridation can be drawn.

**Key Findings**

- 1 Local authorities were the most commonly mentioned recipients of information, with only 10% of respondents providing information to community groups (including iwi). Interview data suggested more scope for involvement of community groups.
- 2 NFIS and the Ministry of Health were the sources of information most frequently mentioned. The comparative lack of New Zealand specific material was noted by respondents to the survey as well as interviewees.
- 3 93% of survey respondents agreed that having current research material improved their ability to provide information about fluoridation to others.
- 4 79% agreed they needed support to use research evidence in providing information to others.
- 5 Almost all respondents who had contact with local authorities felt some degree of confidence about providing information, respondents with more experience tending to be more confident.
- 6 NZ specific resources were identified as the key type of support and information wanted - including local dental data comparing fluoridated and non-fluoridated communities and a health impact assessment of community water fluoridation by a mandated and respected NZ body.

**Implications**

**For the Ministry of Health**

Respondents suggested political changes including making community water fluoridation a national issue, with decisions to fluoridate or not to fluoridate made by central government.

**For NFIS**

Interviewees underlined the importance of providing credible information to councillors and understanding the motivations councillors have, including presenting information that focussed on:

- ◆ comparative data between areas with and without community water fluoridation
- ◆ comparisons of the implications of community water fluoridation and implications of the removal of community water fluoridation
- ◆ the ethics of community water fluoridation
- ◆ the effect removal of community water fluoridation may have on eligibility for community dental services.

**DHBs**

Survey respondents noted that working with fluoridation related matters was a team effort, not everyone involved would necessarily provide information to other organisations and that involvement was generally driven by community events (not health policy). In interviews it was noted well established teams managing community water fluoridation issues required less support.

*"[Support] is more of an issue for newer teams or roles around the country and support in these areas is not currently strong."*

Interview data suggested there was also more scope for involvement of community groups with only 10% of respondents providing information to community groups and a few respondents noted that they only provided information if it was requested.

At NFIS we found this research most interesting and valuable and look forward to hearing reader's feedback.

# FAST FLUORIDE FACTS

**2009 NEW ZEALAND ORAL HEALTH SURVEY**

4906 New Zealanders participated in the New Zealand Oral Health Survey, including 1961 Maori, 622 Pacific and 755 Asian respondents.

The survey showed large improvements in oral health have occurred for children, with the proportion of 12-13 year olds surveyed who were decay-free almost doubling since the last oral health survey in 1988.

Adolescents aged 12-17 years had worse oral health than the younger age groups surveyed.

Children and adults living in areas with community water fluoridation had significantly lower lifetime experience of dental decay than those living in non-fluoridated areas.

The majority of adults (18 and over) surveyed had some natural teeth, with 88.6% having 21 or more natural teeth.

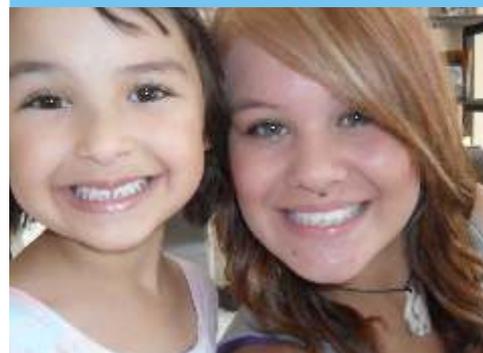
Two in three (65%) adults surveyed brushed their teeth with fluoride toothpaste at least twice a day.

Only 43% of 2-17 year olds brushed their teeth twice daily with fluoride toothpaste.

The survey found no significant difference in the prevalence of fluorosis<sup>1</sup> between people living in fluoridated and non-fluoridated areas.

Reference: Ministry of Health (2010) Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey. Wellington: Ministry of Health

1. Fluorosis: a condition of altered enamel formation caused by elevated intakes of fluoride during tooth formation



# Update from USA

## 139th Meeting and Exposition of the American Public Health Association in Washington DC

 WRITTEN BY DR STEPHEN PALMER, MEDICAL OFFICER OF HEALTH, REGIONAL PUBLIC HEALTH

Last month I attended the 139th Meeting and Exposition of the American Public Health Association in Washington DC. I am told that this the largest and longest running medical conference in the world. There were just over 12,500 attendees and just over 1,000 scientific sessions, roundtable workshops, poster sessions and panel discussions. One of the scientific sessions was on Healthy Fluoridated Communities. The session was organised by Professor Howard Pollick, from the School of Dentistry at the University of California San Francisco. He is a long time advocate of community water fluoridation. The session covered two topics: the background reasoning behind the recommendation to fluoridate community water supplies at 0.7mg/L; and on a new campaign to promote community water fluoridation. Professor Pollick referred to the Friday in January this year when the EPA risk assessment and the new recommended levels were announced as "Fluoride Friday". It was considered by many at the conference that the news media spin on the announcement severely undermined public confidence in the safety of community water fluoridation.

Dr Eugenio Beltrán from the Centre for Disease Control Atlanta outlined how the Department of Health and Human Services convened a panel of scientists to review the best available scientific evidence relating to the USA. The panel found that there is no scientific evidence to support varying the fluoride concentration according to ambient temperature. The panel also considered information on:

-  the prevalence and trends in dental caries
-  changes in the percentage of U.S. children and adults with dental fluorosis
-  the U.S. Environmental Protection Agency's (EPA) new assessments of cumulative sources of fluoride exposure and risks of children developing severe dental fluorosis.

The panel recommended replacing the previous advice (developed in 1962), of a range from 0.7 to 1.2mg/L according to average ambient air temperature to a single level of 0.7mg/L.

Dr Joyce Donohue provided an update on behalf of the EPA Office of Water activities relating to community water fluoridation. Based on a recommendation in the 2006 NRC report the EPA Office of Water conducted a dose-response analysis for severe dental fluorosis and a study of current population exposures to fluoride from drinking water, diet, toothpaste and other sources. The dose-response analysis utilised the study by Dean (1942) to identify the concentration in drinking water associated with a 0.5% prevalence of severe dental fluorosis among children. After adjusting for drinking water intakes, dietary fluoride, and body weights, a reference dose for community water fluoridation of 0.08mg/kg/day was derived. The reference dose is expected to be protective for severe dental fluorosis.

The last presentation in the session was by Matt Jacob, Project Manager, Communications, Pew Center on the States. The Pew Center is a philanthropic organisation that is undertaking independent research and advancing nonpartisan, pragmatic solutions for pressing problems affecting Americans. As part of the Pew Children's Dental Campaign research showed that the momentum behind community water fluoridation has stalled, largely because supporters are:

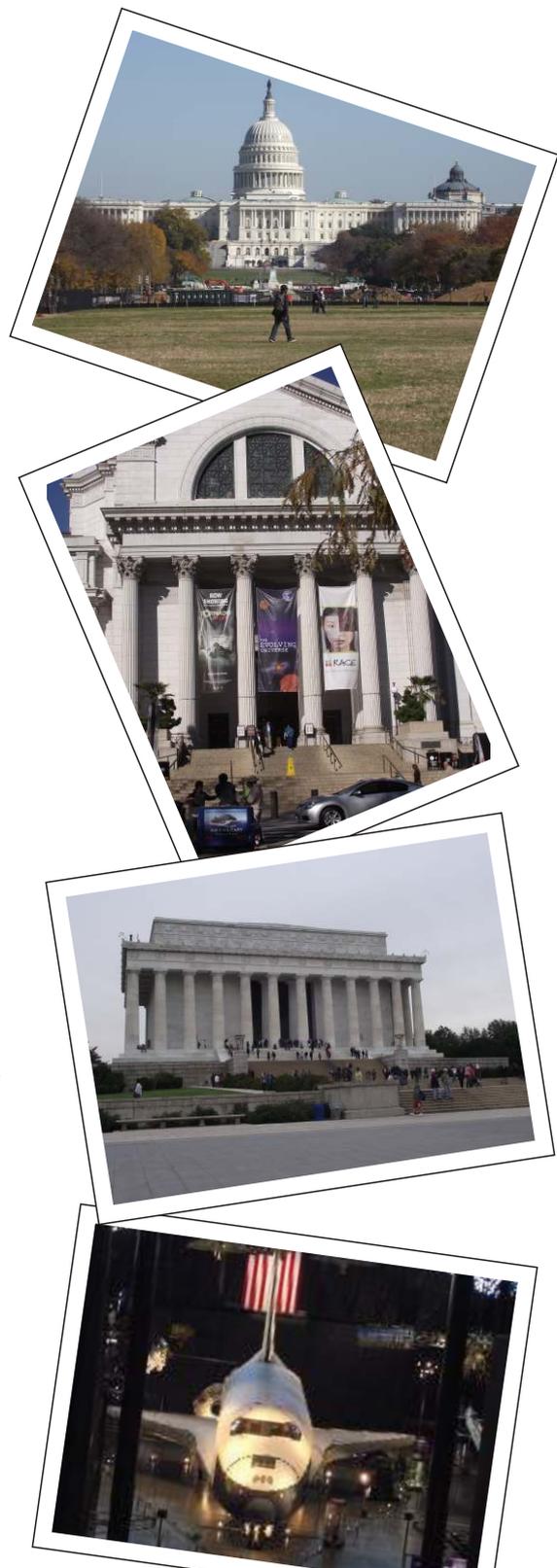
-  not effectively networked
-  lack a strong presence on the internet
-  are not using the language most likely to resonate with the public.

In response to these findings PEW is launching a national campaign to support community water fluoridation.

### The campaign will have four solid messages supporting community water fluoridation:

-  **it protects teeth**
-  **it benefits people of all ages**
-  **it saves families and taxpayers money**
-  **it helps children to smile, eat, learn and grow.**

This month the PEW campaign established a web portal called [www.ilikeMyTeeth.org](http://www.ilikeMyTeeth.org), which will provide facts sheets and other materials to help local advocates separate the facts from fiction surrounding community water fluoridation. On Tap readers may find this to be a useful resource.





**Four solid pro-CWF messages**

-  **It protects teeth.** Studies prove that CWF reduces decay by 18 to 40 percent.
-  **It benefits people of all ages and income groups.** It even benefits the 45 million people who lack dental insurance. And people get the protection of CWF without having to spend extra money or change their daily routine.
-  **It saves families and taxpayers money.** For most cities, every dollar invested in CWF saves \$36 in unnecessary treatment costs. A Texas study showed that CWF saved \$24 per child, per year in Medicaid costs.
-  **It helps children smile, eat, learn and grow** into adults with dignity and confidence — and without pain or shame.



# What do we mean by evidence?

There are many published works and written reports which wade into the complex detail of this enormous topic. In its broadest sense, according to the Oxford English Dictionary (OUP 2012), the word means 'the available body of facts or information indicating whether a belief or proposition is true or valid'. The challenge comes when examining the 'body of facts' and in the modern day we look to science to help us do that in an organised and systematic way.

The process used to gather information to be used as evidence is commonly known as the scientific method (or process). Modern ideas about the scientific method have evolved over the past 2000 years from thinkers of those past eras developing ideas (or theories) about the nature of some part of the world, and testing out their ideas, such as those of Galileo, Francis Bacon, Karl Popper, Albert Einstein and Ignaz Semmelweis.

Many of these fathers of modern science were challenged and even distrusted in their time. However scientific inquiry is a process which can be repeated by others and over time others have demonstrated the value in their initial observations by coming to similar conclusions or taking the 'experiment' further to deepen our understanding of the issue under examination.

Understanding the meaning of evidence in an everyday situation is very different to understanding what evidence used in science is. We see our steaming cup of tea which is 'evidence' that we need to wait for it to cool down to avoid burning our tongue. We buy a late model car, but struggle to pay our utility bills which is 'evidence' that we need budgeting advice. We use our learnt logic or past experience to help us make sense of, or draw conclusions about, hundreds of small things that happen in our daily lives.

Sometimes these conclusions are likely to be correct and some may reflect our perception or opinion rather than being based on fact. Our colleague doesn't return our morning greeting and we see this as 'evidence' that we have upset them in some way. In reality they received news of a relative's death and are preoccupied with this and didn't hear our greeting. The community hall is being pulled down which is 'evidence' that the Council has stopped caring about the community. In reality, it is an earthquake risk and Council plans to replace it with a purpose built community space. Evidence in these everyday examples can appear very elastic and may include some factual information and often will include our subjective views and theories about what is causing something to happen which may be biased and quite far from the facts.

In scientific inquiry the process of determining what is evidence is much more complex as there are far reaching implications in determining a relationship between variables (a factor, trait, or condition that can be measured) such as in evidence based medicine. The aim of scientific inquiry is to eliminate as much bias as possible using robust processes that have been developed, refined, and practiced by trained researchers over many years.

Different scientific disciplines focus on differing subject matter and this determines how they approach gathering evidence, for example research on how people think and behave uses very different methods to those used in research on force fields and complex molecules. Research design needs to be relevant to the purpose of a study. If the methods used do not have enough checks and balances built into the study, or the study conditions result in less control over outside influences on the subject matter under inquiry, then bias is introduced and the researchers will be unable to draw cause and effect conclusions.

For instance a group of people who are being studied for the effects of stopping drinking coffee on their general sense of wellbeing may attribute their improved sense of health to stopping drinking coffee. However there could be any number of other influences in their lives that are contributing to their improved health, such as other diet changes, exercise, what is happening at work, their personal relationships, and their general perception and approach to life (what scientists call confounders). A robust scientific study needs to be designed to control for all the other influences as much as possible, to improve the ability to draw conclusions about the effect of eliminating coffee from a person's diet.

Because the study design and methods used have such a huge effect on the conclusions drawn and the use of those conclusions for decisions that effect us, guidelines have been developed to help researchers and those who critically review research to determine how

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## Waimarama

BY EMMELINE HAYMES

### LONG TERM PLANS 2012-2022

Fluoride has been in the media in several areas in the past few months including Whakatane, Lower Hutt, Waikato and Rotorua. It is not clear yet what activity this may translate to in Council Long Term Plans (LTPs), but a glance at council websites shows councils are at various stages in the LTP process, we feel that it is timely to be thinking about oral health inequities and the usefulness of community water fluoridation in your area for 2012-22 LTPs.

The New Zealand Society of Local Government Mangers (SOLGM) have put together a useful doc 'Living Through (Another) Long-Term Plan – Managing A Long Term Planning Process Under the Local Government Act 2002' [http://www.solgm.org.nz/site/Resources/2012\\_and\\_Beyond.aspx](http://www.solgm.org.nz/site/Resources/2012_and_Beyond.aspx). District Health Boards (DHBs) and Public Health Units (PHUs) may find this document useful in informing your thinking about how and when to engage in the process.

### Points to consider in DHB & TLA engagement:

-  What is the current status of oral health in your community?
-  What local information and data do you have?
-  What is the level of inequity between different communities in your city or district?
-  How could or does community water fluoridation fit into the picture?
-  Who in the DHB and council have been talking to each other?
-  Who could be talking to each other?
-  What were the most recent considerations or decisions about community water fluoridation in your area?
-  If you already have community water fluoridation what else can be done? Where can more gains be made?

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robust the study design is likely to be and how much weight can be put on the conclusions of a particular study. In addition, conclusions from one study need to be examined in the light of conclusions from other similar studies to increase the pool of evidence. It's the weight of the pool of evidence that is needed to make policy or clinical decisions in the area of human health. If similar conclusions are reached by different studies this adds to the weight of evidence. However if one study draws a conclusion that is not able to be replicated by subsequent studies then that study on its own can not be relied upon to make decisions because it may be due to chance, bias, or confounding.

To assist those who use research for important decisions that affect us, a pyramid or hierarchy of evidence for the quality of research design has been developed whereby the most weight can be put on the evidence at the top of the pyramid (systematic reviews and meta analyses) with more caution being used in study designs further down the pyramid (e.g. experimental studies and observational studies).

A further consideration is to how applicable the results of a study are to a group of people. For example caution needs to be used with the results of animal studies when applied to humans. Similarly, results of a study conducted on a rural population in an impoverished country may not be able to be applied to a wealthy, urbanised population because there are too many additional variables – diet, sanitation, housing, environmental exposures, health care, education, occupation, income etc – that come into play.

Our everyday idea of evidence may look plausible on the surface either because contextual factors have not been considered or because they fit into our pre-determined world view. However modern methods of inquiry and understanding about what constitutes scientific evidence have been developed over hundreds of years built on the backs of pioneers of science from different disciplines. Scientific inquiry and evidence is a complex detailed process that requires continual contextualisation and repetition to sharpen our understanding of how our world works.

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# COMMUNITY WATER FLUORIDATION IN THE NEWS

NORTH AND SOUTH MAGAZINE - DECEMBER 2011

The December 2011 issue of North and South magazine included a 12 page feature article on the roll out of mobile dental clinics across the country.

The article focussed on the pros and cons around changing the free child dental service from static clinics to a mobile service. It also briefly discussed community water fluoridation - excerpts summarised below.

.... Anderton argues for a parliamentary inquiry into water fluoridation. He says New Zealand needs a consistent nationwide policy on fluoridation, instead of simply leaving it in the hands of local authorities that can readily be pressured by the electorate: "We have to have a policy that makes dental care easier for future generations, and fluoridation is part of that."

The article says Associate Health Minister Peter Dunne is also pro-fluoridation: "Maintaining the current levels of water fluoridation and increasing its use by local authorities remains a key initiative for the Ministry," he says.

Community water fluoridation remained the focus of ongoing responses to the article in the North and South letter to the editor column in the January and February editions.



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