Dental Wellness: The Mouth Is Part of the Body, and the Body Is Part of the Mouth

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Preamble

The “dental wellness” plan described in this presentation has been in development for several years. It embraces the new understandings of dental diseases—their epidemiology, etiology, risk factors and preventive approaches. Its thrust is to contain the costs of dental benefits by getting high risk plan members more healthy.

The latest version of this dental wellness plan has these key features:

1. Dental coverage is “triaged” according to clinical need. The plan distinguishes low risk plan members from those who are high risk. This is in concert with medical disease management strategies.
2. It empowers the plan member to evaluate their own risk, in partnership with the dental team. Shared decision making is a proven method for improving patient compliance and patient advocacy.
3. For those with greatest need for dental services, the high risk plan member, more preventive services are offered if these services have evidence of being safe and effective. Plan members are informed of these new preventive treatments, and the plan incents the patient and the provider to jointly pursue them.
4. For low risk plan members, dental services are delivered at intervals justified by dental research studies.

This dental wellness plan is currently being tested in situ by a few Canadian employers. Its leading edge design has allowed the insurance provider to quote a significant reduction of dental costs starting in the first year.

These savings in the dental benefits are greatly appreciated by the plan sponsor and are allowing “space” in the overall benefit package for coverage of new drugs and other new initiatives.

Stay tuned!

Don McGowan, CEBS
Oakville, ON
Brushed Your Teeth This Morning?

5000x magnification of bacteria on a tooth brush bristle after use
Got That "Clean Teeth Feeling"?

5000x magnification of the tooth surface (yellow), bacterial film (blue) and red blood cells after brushing.
Flossed Lately?

5000x magnification of bacterial biofilm at the gum line—the origins of both dental decay and gum disease
Otherwise, the Drill Is Coming After You!

5000x magnification of the dental drill with bacteria on its surface.
Now That I Have Grabbed Your Attention, What’s Our Agenda?

1. The Nature of dental diseases
2. Do group dental benefits address this Nature?
3. The principles of wellness in dental care
4. What a dental wellness plan looks like
5. Some lessons so far...
6. Concluding remarks
1. The Nature of Dental Diseases

- They are chronic infections—an un-balanced biofilm called “dysbiosis”
- This imbalance results from external (behavioral) factors
  - Multiple medication use for other chronic disorders
  - Smoking
  - Prior infections which go untreated by drilling and filling
  - Snacking and sipping
- This dysbiosis is linked to systemic health problems
  - Certain dominant bacteria enter the bloodstream and thereby the arterial plaque
  - It triggers inflammation
What Do These Infections Look Like?

On the tooth surface (blue chains are S. mutans)

At the gum line (T. denticola, P. gingivalis)
Are There Parallels in Medicine?

- **Ulcers** are a treatable bacterial infection
- **Appendicitis** is an infection which can be treated more affordably with antibiotics than surgery
This Imbalance in the Oral Biofilm...

- Re-establishes itself quickly after oral hygiene, a dental cleaning or a dental scaling
- Is unaffected by drilling and filling
- May be encouraged by drilling and filling (iatrogenesis)
- Is clustered in the membership of the dental plan
  - 15% to 20% of plan membership
  - The cluster grows with age
    - In tandem with the increase of other chronic diseases (e.g. diabetes)
    - In response to more and more drill and fill
The Imbalance Causes This...

A middle aged high-risk plan member who regularly spends > $1000 per year

- An implant is the future of this tooth
- Fillings at the gum line fail after 2 to 3 years
- A new cavity at the gum line
- More dental decay is starting on the crown
Which, in turn, causes a growing affordability problem for the community... "During the past year, was there a time when you needed any of these services, but couldn't afford it?" American adults, 2014

- Mental health counselling: 6%
- Follow-up care: 8%
- See a specialist: 11%
- Prescription drugs: 13%
- See a doctor: 15%
- Dental care: 25%


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And Affordability Problems for the Plan Sponsor

The cost of fixing decayed teeth = the combined cost
- Of drugs + testing for diabetes +
- Of drugs for mood disorders +
- Of drugs to treat GERD +
- Statins

And yet our regular focus remains on every benefit but dental. . .
Affordability Problems Also Lead to Different Behavior in the Waiting Room

- 20% decline in adult attendance in the past 10 years
- A steady drop in dental incomes since 2006
- A more intense focus on patients with dental insurance and maximizing the use of dental coverage

In other words, the dental benefits system is increasingly prone to over-treatment given demographic factors, affordability problems, and the need for revenue by the dental practice.
2. Do Group Dental Plans Respond to This Nature?

Ask yourself:

• Are we finding those plan members with these infections?
• Are we treating these infections?
• Is our plan design based on the Nature of dental diseases?
• Do we tie preventive services to disease risk?
The Conventional (Surgical) Response to an Unbalanced Oral Biofilm...

Dental spending peaks past age 55

Because of recurrent drilling and filling

With no commensurate increase in prevention

Source: Del Aguila M et al, 2002
Which Has Very Limited Evidence of Efficacy

<table>
<thead>
<tr>
<th>Procedure</th>
<th>% of total plan spending</th>
<th>Evidence it works to manage oral infections?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling and filling</td>
<td>40%</td>
<td>No controlled studies, some evidence it promotes more infection by creating more vulnerable surfaces</td>
</tr>
<tr>
<td>In-office fluoride for adults, including fluoride varnish</td>
<td>5%</td>
<td>No well controlled studies</td>
</tr>
<tr>
<td>Regular hygiene cleaning</td>
<td>30%</td>
<td>No evidence, no well controlled studies</td>
</tr>
<tr>
<td>Chlorhexidine rinse</td>
<td>1%</td>
<td>No evidence in managing dental decay</td>
</tr>
</tbody>
</table>
3. The Principles of Dental Wellness

- Meet the plan members’ wants and needs—to engage the membership in change
- Address the cause of the disease, not the outcome
- Make sure there is good evidence for any change
- Address risk—one size doesn’t fit all
Why Do Your Plan Members Go to the Dentist?

Reasons given for visiting the dentist by Ontario adult dental patients, 2013
(7 practices, N = 130)

- I want a healthy mouth for a healthy body: 40%
- I want to prevent dental decay: 28%
- I want to minimize my costs of care: 12%
- I think I need a filling or a crown: 11%
- I want better looking teeth: 7%
- I have some dental pain: 2%

Source: CHX Technologies, 2013
What Kind of Dental Services Are Most Preferred by Your Plan Members?

% of adult patients wanting the dentist to speak to them about these services, Ontario, 2013

- digital x-rays: 20%
- Invisalign: 13%
- veneers: 13%
- dental implants: 13%
- new preventive coating: 29%
- risk assessment: 45%

Source: CHX Technologies, 2013
Why the Focus on Dental Prevention?

- A Type 2 diabetic has 2x the level of decay (Hintao J et al 2007)
- Those on cardiovascular drugs or anti-depressants have significantly more dental surgery (Maupome G et al 2006, Rindal B et al 2005)
- Those with Parkinson’s and certain forms of arthritis have more than 5x the level of decay (Connolly et al, 2012; Napenas et al 2014; Baron M 2014)
- Those taking a diuretic have 7x the risk of dry mouth (and associated dental decay) (Kakudate N et al 2014)
Those Who Spend on Drugs Also Spend on Dental...

Mean disbursements on drugs for those who go/don't go to the dentist, Canada, 2012 (n=640)

- Spending on drugs for those without dental spending: $381.51
- Spending on drugs for those with dental spending: $992.19

Source: McGowan Insurance Services
And Those who Spend BIG on Dental Benefits are a Small Minority

Dental disbursements by number of plan members, Canada, 2012 (n=640)

15% spend 60%
Who Can be Found by a Risk Assessment

Risk factor profile of Ontario adult dental patients, 2013
(n=133)

- You get scaling of your gums regularly: 27%
- You take 3+ medications daily: 27%
- You smoke: 17%
- You have a dry mouth: 10%
- You have mood disorders: 10%
- You have HBP with mood disorders: 5%
4. What a Dental Wellness Plan Looks Like

• It uses shared diagnosis...
  • To find those at high risk
  • To motivate high risk plan members to ask for more prevention when it is needed
• It offers evidence-based treatment of the cause of dental decay
• It differentiates levels of care by risk
• It educates beyond the benefits booklet
Shared Diagnosis

- The patient assesses his/her own risk in the waiting room
- The dental team confirms the risk and discusses options

Many studies of shared decision making show better management of chronic diseases
What Happens With Shared Diagnosis?

- 45% of adults will push for more preventive care if needed
- 50% remain largely disengaged from their care—will follow what the dentist suggests (for a while)
- 5% don’t care
- The dental team will comply if reimbursement is based on risk
Add an Evidence-based Treatment for the Unbalanced Biofilm Causing Decay

- A topical antibacterial coating called Prevora
- Unique evidence of safety and efficacy
- Approved by Health Canada & European authorities
- FDA approval scheduled for 2017
- CDA procedure codes 13601-13602

Prevora is painlessly applied by the hygienist in 5 visits in year 1, then 2 visits per year thereafter
## Differentiate Dental Benefits by Risk

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>% of plan members</th>
<th>Recall interval</th>
<th>Spending limit</th>
<th>Design changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk</td>
<td>70% to 80%</td>
<td>18 months*</td>
<td>$X</td>
<td></td>
</tr>
</tbody>
</table>
| High risk   | 20%               | 6 months        | $Y             | • Treat the dysbiosis  
• Incent prevention |

*Evidence from Chaffee BJ et al 2015 and NICE show that low risk adult plan members can be recalled up to 24 months without affecting oral health*
5. Some Lessons so far

- My clients universally like and understand the concept of wellness when applied to dental care.
- The key touch points are:
  - Treating the cause of the disease, not its outcome.
  - Delivering more preventive care to those in need.
  - Bending the cost curve in a significant way (10%+ in year 1).
- The hesitancies arise from:
  - Extended recalls for low risk.
  - A lower spending limit for low risk.
  - Will the dentist provide more preventive care?
  - Can we educate the plan membership quickly and adequately?
6. Concluding Remarks

- Your client likely spends more on fixing decayed teeth, than on any other chronic condition
- Your plan design is not evidence-based
- It does nothing about the cause of dental disease
- It is unsustainable as your plan membership ages
- And then there is the growing evidence that...

The mouth is part of the body
Poor Oral Health Contributes to Poor Overall Health

• Key pathogen for dental decay is the most common microorganism in the arterial plaque of end-stage coronary patients (Nakano K et al 2009)

• Dental decay at the gum line is a more important risk factor for a cardiac event than elevated cholesterol (Maurello 2006)

• Gum disease doubles the risk of age-related macular degeneration (Wagley S et al 2015), doubles the risk of a heart attack over 5 years (Noguchi S et al 2014), doubles the risk of ankylosing spondylitis (Ratz T et al 2015). . .
But What Will the Dentist Say?

Refer to this video by Dr. Ron Giedraitis on YouTube:

https://www.youtube.com/watch?v=t4NAOpXqud4

Many dentists need to offer new services which are more affordable and preferred by their aging community. Waiting rooms have never been emptier, dental incomes slow to grow.

Shifting from treatment to prevention (wellness) is a strategy now used by a growing number of Canadian dental teams to improve their business and clinical prospects.
Thank You!

Questions?