THE IMPORTANCE OF ORAL HEALTH

SCHOOLCARE HEALTH BENEFIT PLANS: 2014 ANNUAL MEETING

NOVEMBER 5, 2014

Dr. Miles Hall, Chief Clinical Director – Cigna Dental
PERIODONTAL DISEASE
A focus on prevention and treatment.

**SYMPTOMS**
Signs and symptoms include, bleeding gums, or gums that are red and swollen. Even persistent bad breath or taste may be a sign. Sometimes one may not even know they have periodontitis. That is why regular visits to the dentist are so critical.

**TREATMENT**
The goal of periodontal treatment is to control the chronic infection, which means controlling the inflammatory process. An important tool in slowing down or controlling the disease process is excellent home care and oral hygiene.

**PREVENTION**
It is important to have regular examinations and cleanings. The dentist and hygienist will help the customer make sure their home care is working and keeping the periodontal problem under control.

### DENTAL PLANS CAN CURB MEDICAL COSTS

**Our most recent findings show:**

- Medical savings when periodontal conditions are treated
- Fewer complex dental procedures with appropriate preventive care

<table>
<thead>
<tr>
<th>Medical Condition</th>
<th>Population Savings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>$1,292 or 27.6%</td>
</tr>
<tr>
<td>Heart disease</td>
<td>$2,183 or 25.4%</td>
</tr>
<tr>
<td>Stroke</td>
<td>$2,831 or 34.7%</td>
</tr>
</tbody>
</table>

#### Average annual medical cost savings for all individuals in study, **with or without a medical condition**, and appropriate periodontal treatment.

- $1,020 or 27.5% savings
- > 67% lower hospital admission rate
- > 54% lower ER rate

#### Beyond gum disease

Customers receiving proper preventive dental care have, on average:

- > 12.5% fewer extractions
- > 5.4% fewer root canals

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*Not an underwriting decrement

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1. “Appropriate Periodontal Therapy Associated with Lower Medical Utilization and Costs” national Cigna study presented at the International Association for Dental Research Meeting, March 2013, Seattle. Includes data from other 2012 internal Cigna studies.
OUTCOMES CAN IMPROVE WHEN OUR PLANS WORK TOGETHER

Our 3-year match-case control study proves it:

- Maternity
- Diabetes
- Heart disease or stroke
- Head and neck cancer radiation
- Organ transplants
- Chronic kidney disease

Preventive dental treatment reduced medical costs:

3.4% reduction¹

$1,460 year 3 average medical spend (Study) VS. $1,512 year 3 average medical spend (Control)

¹ Cigna 2013 national internal study.
According to several studies, what proportion of the population does gum disease affect?

A. 25% of people over 50  
B. 50% of people over 55  
C. 75% of people over 35  
D. 90% of people over 30
That means three out of four adults aged 35 and older may be affected by gum disease and its complications.

“C” is Correct!

Source: American Dental Hygienists’ Association (ADHA)
Health advocates engage high-risk individuals in oral health improvement discussions during coaching calls:
- Perform oral health assessment
- Referrals to dental care
- Referrals to Cigna Dental Oral Health Integration Program
- Assessment count reportable to client
- Online oral health assessment tools

Conditions that prompt the advocate or coach to perform an oral health assessment include:
- Cardiovascular Disease
- Diabetes
- Pre-Diabetes
- Tobacco use (oral cancer)
- Anxiety/Bipolar
- Depression
- Metabolic syndrome
- Coronary artery disease
- Heart failure
- Peripheral artery disease
- COPD
- Asthma
- Osteoarthritis

Dental assessment is highly utilized by our Health Advocates.
HEALTHEVIEW INTEGRATION – DENTAL ASSESSMENT QUESTIONS

Q1 - Do you practice good dental hygiene by brushing and flossing your teeth on a regular basis?

Q2 - Did you know that the infection and inflammation caused by gum disease could negatively affect other medical conditions?

Q3 - Have you noticed any of the following: gums bleed when brushing, flossing, or chewing; teeth feel loose or you notice a change in your bite; you have persistent bad breath; your gums have receded or your teeth look longer?

Q4 - Are you actively or regularly seeing a dentist for care?

Q5 - Did you know that tobacco can increase your risk for oral cancer?

Q6 - Did you know that tobacco use is the number 1 risk factor for gum disease — even more than bacteria and plaque?

Q7 - Did you know that use of smokeless tobacco could increase your risk for cavities?

Q8 - Did you know that asthma sufferers’ breathing habits and asthma medications may cause dry mouth which potentially increases the risk for tooth decay?

Q9 - Do you experience any pain while chewing or other jaw pain?

Q10 - Did you know that studies are showing a possible connection between gum disease and certain medical conditions?

This is why it is so important that you see your dentist on a regular basis. I would encourage you to visit mycigna.com on the main Dental Page and take the Gum Disease Risk to find out more about the Cigna Dental Oral Health Integration Program.
**INNOVATIVE HEALTH IMPROVEMENT PROGRAMS AT NO ADDITIONAL COST**

Cigna Dental Oral Health Integration Program®
Proactive prevention for individuals with these medical conditions: maternity, diabetes, heart disease, stroke, head and neck cancer radiation, organ transplants and kidney disease. One of the most **comprehensive**¹ programs, including:

<table>
<thead>
<tr>
<th>Chronic conditions</th>
<th>100% out-of-pocket reimbursement</th>
<th>Dental wellness education</th>
<th>Discounts up to 50%</th>
<th>Improved medical cost savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention and periodontal²</td>
<td></td>
<td></td>
<td>Prescription dental products³</td>
<td></td>
</tr>
</tbody>
</table>

**Dental outreach program**⁴
Proactive prevention outreach to identified high-risk individuals who haven’t been to the dentist in at least 7 months.

<table>
<thead>
<tr>
<th>Missed prevention</th>
<th>Mail postcard</th>
<th>Follow-up phone call</th>
<th>About 50% of customers visit dentist after outreach⁵</th>
</tr>
</thead>
</table>

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1. Based on an internal market survey conducted from 2008 - 2012 including over ten leading dental carriers which indicates Cigna covers more conditions and reimburses for more procedures than any other carrier reviewed. Cigna also offers eligible program participants information on behavioral conditions that can affect oral health and pharmacy discounts on certain dental prescriptions — no other carrier reviewed offered these additional services.
2. Exclusions and limitations apply.
4. Program only available for pre-approved clients.
5. November 2013, Cigna internal Dental Outreach Program reporting.
DENTAL OUTREACH PROGRAM

Two step proactive prevention outreach to identified high-risk individuals who haven’t been to the dentist in at least 7 months. Postcard followed up with phone call.

1. Mail postcard
2. Follow-up phone call

Identify customers at risk + Contact customers = About 45-50% of customers visit dentist after outreach

1. Program only available for preapproved clients.
2. December 2013, Cigna internal Dental Outreach Program reporting.
Quiz Question #2

Multiple Choice

How many work hours per year are lost because of dental-related disease and treatment?

A. 87 million
B. 164 million
C. 26 million
D. 55 million
As the saying goes, “An ounce of prevention is worth a pound of cure.” Studies show that for every $1.00 spent on preventive oral care, $4.00 are saved in the long run.

For example, dental checkups can expose the early stages of gum disease. And the sooner it is detected, the easier and less expensive it is to treat.

CIGNA DENTAL ORAL HEALTH INTEGRATION PROGRAM®

More access.
Available to ALL Cigna Dental customers with qualifying condition(s)

More wellness
Articles on behavioral issues linked to oral health

More discounts
Up to 40% off average retail prices on certain prescription dental products¹

<table>
<thead>
<tr>
<th>Covered Dental Procedures and Medical Conditions</th>
<th>Maternity</th>
<th>Chronic kidney disease</th>
<th>Organ transplants</th>
<th>Head &amp; neck cancer radiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodontal treatment and maintenance²*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Periodontal evaluation</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral evaluation³</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning⁴</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency palliative treatment</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoride – topical application and varnish⁵</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sealants</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

*Periodontal treatment and maintenance are covered with Heart Disease, Stroke and Diabetes conditions.

One of the most comprehensive programs⁶ reimbursing individuals for enhanced preventive and periodontal services!

1. May 2014, Cigna Home Delivery Pharmacy Average Retail Price Surveys.
2. Four times per year.
3. One additional evaluation.
4. One additional cleaning.
5. Age limits removed; all other limitations apply.
6. Based on internal market survey conducted from 2008-2012 including over ten leading dental carriers which indicates Cigna cover more conditions and reimburses for more procedures than any other carrier reviewed. Cigna also offers eligible program participants information on behavioral conditions that can affect oral health and pharmacy discounts on certain dental prescriptions—no other carrier reviewed offered these additional services.

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CIGNA DENTAL ORAL HEALTH INTEGRATION PROGRAM

Using our expertise as a health service company to focus on total wellness

More Wellness
Articles on behavioral issues linked to oral health

Behavioral articles to educate
• Stress and the impact of oral health
• Fear of going to the dentist
• Tobacco cessation

More Access
Available to ALL Cigna Dental customers with qualifying condition(s)

Discounted non-prescription dental products
• Program participants will be eligible for free samples and discounted non-prescription dental products developed for patients with a higher risk for gum disease and cavities.

More discounts
Up to 40% off average retail prices on certain prescription dental products¹

Discounted prescription dental products through Cigna Home Delivery PharmacySM
• Chlorhexidene antibacterial rinse (e.g., Peridex, Perioguard)
• Fluoride prescription rinse (e.g., Colgate Prevident)
• Fluoride toothpaste (e.g., Colgate Prevident)
• Fluoride gel (e.g., Gel-Kam®)

¹. Cigna Pricing Analysis of National Average Wholesale Price and Customer Costs, June 2014
Quick and easy 3-minute quizzes test knowledge

Identifies potential oral health risks

Score indicates risk level

Printable results to share with dentist

Available in English/Spanish

On Cigna.com and myCigna.com
A Cigna customer, a family man in his early 40s, was at his company’s health fair and he decided to take our Oral Cancer Awareness Quiz. What he learned from the quiz prompted him to visit his dentist where he was diagnosed with early stage oral cancer. Due to his early diagnosis, his prognosis is excellent. With timely treatment, he managed to eliminate the cancer and went for follow ups thereafter. This man was very healthy and never smoked. He spoke with the Cigna account manager about how terrifying his diagnosis was and how it would have killed him had he not gone. He had never used tobacco and just never thought of this as an issue he would face.

– Customer of a large national client

This success story is based on real events and is used for illustrative purposes only.
THE PERSONALIZED myCigna.com
Designed to click with our customers.
Given that research suggests a relationship between gum disease and diabetes, which of these statements do you think is true?

A. Gum disease makes it more difficult for diabetics to control their blood sugar
B. Moderate or severe gum disease can increase a diabetic’s blood sugar
C. Controlling a diabetic’s gum disease may help in controlling his/her diabetes
D. All of the above
Research supports all of these statements about diabetes and gum disease.

“D” is Correct!

Sources: American Dental Association; American Association of Periodontology
VALUE OF PERIODONTAL CARE

A demonstration model
VALUE OF PERIODONTAL CARE

Objective
Assess the value of dental and health care integration on Total Medical Cost (TMC)

Strategy
Compare total medical cost for customers who receive periodontal care to those who don’t

Population
Cigna customers with periodontal disease

Plan Design
> The industry commonly evaluates the effectiveness of interventions and services by simply relying on pre- and post-data with no reference group. It is difficult to draw associations in these pre/post analyses without comparison groups.

> Cigna uses quality research standards,¹ a match-case control method that quantifies the difference in total medical cost before and after the periodontal screening.

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CONCLUSION

Periodontal treatment associated with reduced medical costs

<table>
<thead>
<tr>
<th>Customers receiving periodontal treatment</th>
<th>Savings per year/customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>All(^1)</td>
<td>$1,020</td>
</tr>
<tr>
<td>With cardiovascular disease(^2)</td>
<td>$1,183</td>
</tr>
<tr>
<td>With diabetes(^2)</td>
<td>$1,292</td>
</tr>
<tr>
<td>History of stroke(^2)</td>
<td>$2,831</td>
</tr>
</tbody>
</table>

1. “Appropriate Periodontal Therapy Associated with Lower Medical Utilization and Costs.” Alex Marano, Michael Hahn, Miles Hall, Clay Hedlund, Cary Sun, Robert Genco, presented at the International Association for Dental Research Meeting, March 2013, Seattle.
## ESTIMATED SAVINGS FOR CLIENT “ABC” (10,000 MEMBERS) EXAMPLE ONLY!

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Prevalence&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Number of employees with medical coverage</th>
<th>Number of employees with periodontal disease</th>
<th>% of employees without treatment&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Measured savings with treatment&lt;sup&gt;2,3&lt;/sup&gt;</th>
<th>% effectiveness of Cigna outreach&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Possible savings due to outreach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>11.3%</td>
<td>1,133</td>
<td>238</td>
<td>50%</td>
<td>$2,183</td>
<td>50%</td>
<td>$129,841</td>
</tr>
<tr>
<td>Chronic Kidney Disease</td>
<td>9.6%</td>
<td>957</td>
<td>201</td>
<td>50%</td>
<td>$1,020</td>
<td>50%</td>
<td>$51,262</td>
</tr>
<tr>
<td>Diabetes</td>
<td>7.3%</td>
<td>729</td>
<td>153</td>
<td>50%</td>
<td>$1,292</td>
<td>50%</td>
<td>$49,475</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>4.9%</td>
<td>487</td>
<td>102</td>
<td>50%</td>
<td>$1,020</td>
<td>50%</td>
<td>$26,100</td>
</tr>
<tr>
<td>Stroke</td>
<td>2.3%</td>
<td>231</td>
<td>48</td>
<td>50%</td>
<td>$2,831</td>
<td>50%</td>
<td>$34,275</td>
</tr>
<tr>
<td>Organ Transplants</td>
<td>0.03%</td>
<td>3</td>
<td>1</td>
<td>50%</td>
<td>$1,020</td>
<td>50%</td>
<td>$1,020</td>
</tr>
<tr>
<td>Head and Neck Cancer Radiation</td>
<td>0.02%</td>
<td>2</td>
<td>0</td>
<td>50%</td>
<td>$1,020</td>
<td>50%</td>
<td>$0</td>
</tr>
</tbody>
</table>

$\text{Total} = $291,973<sup>5</sup>

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1. Average Cigna prevalence for medical conditions.
2. "Appropriate Periodontal Therapy Associated with Lower Medical Utilization and Costs." Alex Marano, Michael Hahn, Miles Hall, Clay Hedlund, Cary Sun, Robert Genco, presented at the International Association for Dental Research Meeting, March 2013, Seattle.
4. Average 2013 result for the Cigna Dental, Dental Outreach Program.
5. Example of a client with 10,000 members.

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Multiple Choice

This year, approximately how many people in the U.S. will be newly diagnosed with oral cancer?
A. 40,000
B. 25,000
C. 20,000
D. 15,000
Approximately 40,000 Americans will be diagnosed with new cases of oral cancer this year. The majority of these cases will be discovered after the cancer has already spread to other areas of the body. Oral cancer causes approximately 8,000 deaths annually, or roughly 1 per hour, 24 hours a day.

Source: Oral Cancer Foundation (oralcancerfoundation.org) and Oral Cancer Institute (cancer.gov).
Which of the following are some of the signs and symptoms of oral cancer?

A. Red and/or white discolorations of the soft tissues in your mouth
B. A lump or thickening that develops in the mouth or in the neck
C. Difficulty swallowing
D. Numbness in or around the mouth
E. All of the above
These symptoms may or may not be signs of oral cancer. But if you experience any one or more of them for more than 14 days, you should visit your dentist for an oral cancer exam. When they last more than 14 days, these other, less common conditions may also be symptoms of oral cancer: hoarseness, the feeling that something is stuck in your throat, difficulty moving your jaw or tongue, ear pain that you feel only on one side, a sore under a denture that doesn’t heal (even after the denture is adjusted).

Source: Oral Cancer Foundation (oralcancerfoundation.org)
> According to Michael Roizen, M.D., a physician at the Cleveland Clinic and Chair of their Wellness Institute, and the author of *Real Age: Are You As Young As You Can Be?*, “flossing and brushing your teeth daily can make your RealAge as much as 6.4 years younger.”

“Change is inevitable – except from a vending machine”

---John A. Simone, Jr

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