



**It's all
connected**

**Better health outcomes for members,
lower costs for employers**
Aetna Dental/Medical IntegrationSM program

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Making the connection

Dental benefits and dental insurance plans are offered and/or underwritten by Aetna Health Inc., Aetna Dental Inc., Aetna Dental of California Inc. and/or Aetna Life Insurance Company (Aetna). Each insurer has sole financial responsibility for its own products.

Increasingly, medical researchers are finding that dental health is tied closely to overall health. Academics, dentists and clinicians from Columbia University and Aetna have confirmed this belief through groundbreaking and ongoing research. Integrating dental and medical data not only identifies potentially chronic and expensive health conditions, but also **improves employee health and helps lower benefits costs.**

The relationship between dental and overall health is not new. Back in 2000, the Surgeon General issued his first-ever report on the nation's oral health, making the connection even then. Former U.S. Department of Health and Human Services (HHS) secretary Donna E. Shalala, who commissioned the report, said the mouth was a "mirror for general health and well-being and the association between oral health problems and other health problems."¹

Even 18 years ago, this report pointed to "possible associations between chronic oral infections and diabetes, heart and lung disease, stroke and low-birth-weight premature births."¹ Little new information followed on this possible link and the related costs until Aetna and Columbia University conducted a joint study.

In the first study coauthored by Columbia and Aetna, published in 2006,^{2,3} researchers identified an association between dental health and three conditions: diabetes mellitus, coronary artery disease and cerebrovascular disease. They concluded that periodontal treatment contributed to lower overall risk and medical expenditures.

The second study, published in 2011, linked improved dental care while pregnant with lower preterm delivery rates and incidences of low birth weight. Both studies took advantage of Aetna's extensive dental insurance and medical plan databases.

¹U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. 2000. Available at: profiles.nlm.nih.gov/ps/access/NNBBJT.pdf. Accessed May 31, 2017.

²Albert DA, Sadowsky D, Papapanou P, Conicella ML, Ward A. An examination of periodontal treatment and per member per month (PMPM) medical costs in an insured population. BMC Health Services Research. 2006; 6: 103. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1574303/>. Accessed May 31, 2017.

³Continued analysis of retrospective study proves sustained results. Aetna® Health Analytics, August 2008.

⁴Ongoing statistically valid analysis of Aetna Dental/Medical Integration program customers. Aetna Informatics, 2010 – 2017.

⁵Centers for Disease Control and Prevention. Heart disease facts. Available at: cdc.gov/heartdisease/facts.htm. Accessed May 31, 2017.

⁶Heidenreich PA, Trogon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. Circulation. 2011; 123: 933 – 944. Available at: circ.ahajournals.org/content/123/8/933. Accessed May 31, 2017.

The Aetna Dental/Medical Integration program (DMI) was launched in 2007, turning research into real-world results. As of December 2017, we have identified 2.7 million at-risk members, providing outreach and improving the health of up to one out of every five members.⁴

Certainly, chronic diseases have become epidemic. One out of every four deaths in the United States is caused by heart disease, with coronary heart disease contributing to just under 400,000 deaths per year.⁵ The direct medical costs of cardiovascular disease are projected to triple by 2030 to more than three-quarters of a trillion dollars.⁶

Finding solutions on the horizon

However, health care practitioners and insurance carriers like Aetna are working to slow this epidemic of chronic disease. Integrating dental and medical care is a good start. Dentists are working with physicians for the benefit of the whole patient, where treatment previously was disconnected. Researchers are examining other chronic conditions to see if dental health can play a role in helping to reduce medical costs, while boosting overall health.

Early results culled from Aetna and Columbia's first coauthored research show great promise, manifested in lower medical costs and risk scores. And dentists, physicians, insurance carriers and employers are communicating more with each other to learn new ways to take advantage of these findings.

Employers, in fact, are among the most important contributors to continued collaboration leading to improved health. By working with insurance carriers, these sponsors of dental and health insurance plans have access to a no-cost solution that can help them recoup lost productivity and lower insurance premium expenses.

As David A. Albert, DDS, MPH, associate professor of clinical dentistry at Columbia University College of Dental Medicine and coauthor of the two studies cited previously, concludes, "The medical profession is working toward treating whole patients and not dividing them into sections."

Aetna's groundbreaking integration of dental and medical care is an important component of this whole-patient treatment. Dentists, physicians, other medical practitioners, insurance carriers and employees will all have their roles to play in increasing the effectiveness of this integration.

Researchers recommended that examination of the oral cavity be included in guidelines for care of patients with diabetes mellitus, coronary artery disease and cerebrovascular disease. They also suggested that public health programs and insurers work together to raise awareness of the need for periodic dental visits for those members of the population who have diabetes and cardiovascular diseases. (The American Diabetes Association followed up with a recommendation that diabetes patients have at least one dental exam annually.)

Subsequent research added credence to the original, groundbreaking study, although none has proven poor oral health causes other diseases. "There is a difference between causality and an association with oral health and these chronic diseases," says Mary Lee Conicella, DMD, Aetna's chief dental officer. "But causality is not paramount, because the associations are clear and taking action produces better outcomes."

Good dental health creates lower costs and lower risk



²Albert DA, Sadowsky D, Papapanou P, Conicella ML, Ward A. An examination of periodontal treatment and per member per month (PMPM) medical costs in an insured population. BMC Health Services Research. 2006; 6: 103. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1574303/>. Accessed May 31, 2017.

Chronic disease is widespread

Any relationship between better oral health and improved overall health merits attention, given the huge numbers of Americans at risk. According to a report published by the Centers for Disease Control and Prevention (CDC), 11 percent of American adults have heart disease, 24 percent were told they have hypertension and 9 percent have diabetes.⁷

The number of people affected by cardiovascular disease and its costs is staggering. According to the CDC:

- Heart disease is the leading cause of death for both men and women. More than half of the deaths due to heart disease in 2009 were in men.⁸
- About 600,000 people die of heart disease in the United States every year — that's one of every four deaths.⁸
- Cerebrovascular diseases are the fourth leading cause of death, killing more than 128,000 people annually.⁸
- Between 2010 and 2030, real total direct medical costs of cardiovascular disease are projected to triple from \$273 billion to \$818 billion.⁵

Diabetes costs skyrocket

Cardiovascular disease is only one contributor, albeit a big one, to higher medical costs.

Diabetes is epidemic in society. According to the American Diabetes Association, over 30 million children and adults in the United States have diabetes.⁹ Additionally, the association says that diabetes is the leading cause of new cases of blindness among adults ages 20 to 74 years and of kidney failure.

Again, the disease's economic costs are staggering. The estimated costs of diagnosed diabetes increased 41 percent, to \$245 billion in 2012 from \$174 billion in 2007.¹⁰

As the cost of these chronic illnesses increases, some people may wonder what the cause is and what the effect is. Does good dental health create people who are healthier overall? Or do naturally health-conscious people take better care of their dental health? Either way, there is a connection between the two.

The idea of medical professionals and academics working together with insurance providers and employers sponsoring dental and health insurance seems natural, but the most basic connection between health care providers has developed slowly. It has, however, taken root.

For example, the HHS's Healthy People 2020 initiative includes a recommendation that people with diabetes receive an annual dental exam.¹¹ HHS states that periodontal disease and diabetes are linked, and annual exams can help control the complications of diabetes.

⁵Heidenreich PA, Trogon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation*. 2011; 123: 933 – 944. Available at: circ.ahajournals.org/content/123/8/933. Accessed May 31, 2017.

⁷Schiller JS, Lucas JW, Peregoy JA. Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2011. *Vital and Health Statistics*. December 2012; 10 (256). Available at: cdc.gov/nchs/data/series/sr_10/sr10_256.pdf. Accessed May 31, 2017.

⁸Kochanek KD, Xu J, Murphy SL, et al. Deaths: Final Data for 2009. *National Vital Statistics Reports*. December 29, 2011; 60 (3). Available at: cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_03.pdf. Accessed May 31, 2017.

⁹American Diabetes Association. Data from the 2015 National Diabetes Fact Sheet. Available at: diabetes.org/diabetes-basics/diabetes-statistics/. Accessed May 31, 2017.

¹⁰American Diabetes Association. Economic costs of diabetes in the U.S. in 2012. Available at: care.diabetesjournals.org/content/early/2013/03/05/dc12-2625.full.pdf+html. Accessed May 31, 2017

¹¹Healthy People 2020. Available at: healthypeople.gov/2020/topics-objectives/topic/diabetes/objectives. Accessed May 31, 2017.

Ties between dental health and medical conditions

The Journal of the American Dental Association (JADA) strongly endorsed the link between dental health and some medical conditions in a July 2013 editorial. It cited a meeting of the European Federation of Periodontology and the American Academy of Periodontology's review of existing evidence — 17 studies in all.¹² JADA's editorial concluded that this review provided the strongest evidence yet for a link between periodontal disease and three conditions:

- Diabetes (diabetes mellitus)
- Cardiovascular disease (atherosclerotic cerebro-cardiovascular disease)
- Adverse pregnancy outcomes¹²

The authors concluded, "There is ample evidence that treatment of periodontal disease is safe and effective in managing periodontal infection and inflammation — and that good oral health is an essential, integral part of overall health."

Aetna works with the medical community to make dental and medical integration more prevalent. For example, the Aetna Foundation® gives funds to local National Dental Association chapters, which organize programs that include local dentists, physicians, medical and dental residents, nurses and other health practitioners learning to work together for the benefit of their patients.

¹²Borgnakke WS, Glick M, Genco RJ. Periodontitis: The canary in the coal mine. JADA. July 2013; 144 (7): 764 – 766. Available at: [http://jada.ada.org/article/S0002-8177\(14\)60536-5/abstract](http://jada.ada.org/article/S0002-8177(14)60536-5/abstract). Accessed May 31, 2017.

What are some solutions?

Outreach and coordination

Outreach to the dental and medical communities is one part of the solution to integrate these two medical disciplines. Coordination between dental and medical professionals is another. “The major challenge confronting dentistry is that it still remains mostly separated from the world of medicine,” says Hazel Juanita Harper, DDS, MPH, assistant professor at Howard University College of Dentistry, a fellow in the American College of Dentists and former president of the National Dental Association (NDA). “The knowledge gap between health professionals is far too broad, but Aetna is helping NDA close the gap by sponsoring joint education courses with physicians and dentists with an emphasis on the oral-systemic link.

“We realize all of our work won’t be as effective as it can be until all health providers are on the same page,” she continues. “Specifically, primary care providers are unaware of the real connection between general health and oral health. Everyone must understand and accept the fact that dental care is medically necessary.”

“Dentists know more about medicine than physicians know about dentistry,” says Dr. Walter Cohen, one of only 23 dentists in the U.S. elected to the Institute of Medicine of the National Academy of the Sciences. He was the dean of the University of Pennsylvania School of Dental Medicine and is chancellor emeritus of Drexel University College of Medicine. “The problem has been that medical school curricula is so packed it devotes minimal time to the oral cavity.”

This disconnect is slowly changing for the better. Columbia University, for one, requires medical and dental students to share two years of courses, according to Albert.

“I am a hospital-based clinician and was never comfortable with the way dentists and physicians are educated in separate schools,” he says. “Columbia Dental School is significantly different. Our students are educated side by side with medical students. We live and breathe here in the same space. For the overall health of the patient, it makes sense to integrate the two as much as possible.”

Insurance database mining

While Harper, Cohen and Albert all mention the baby steps taken to integrate dental and medical care, other partners are needed. Diversified insurance carriers offering both dental and health insurance are potential partners. Aetna, with both databases of members on one platform, has realized that potential for almost a decade as the first (and perhaps only) insurance carrier to integrate its database of members.

For example, the three-year retrospective study¹³ looking at pregnancy outcomes and dental care took advantage of Aetna’s combined medical/dental insurance database. The study researched 23,441 insured women who delivered live births and their birth outcomes on the basis of dental treatment received.

The study compared rates of low birth weight and preterm births among five groups, specifying the timing and type of dental treatment received. The study also compared outcomes across treatment groups, adjusting for duration of continuous dental coverage, maternal age, pregnancy complications, neighborhood-level income and race/ethnicity. After exhaustive study, researchers found that women who received preventive dental care had better birth outcomes than those who received no treatment.

Notably, there was no evidence of increased odds of adverse birth outcomes from dental or periodontal treatment.¹³

¹³Albert DA, Begg MD, Andrews HF, Conicella ML, et al. An examination of periodontal treatment, dental care, and pregnancy outcomes in an insured population in the United States. *American Journal of Public Health*. January 2011; 101(1): 151 – 156. Accessed May 31, 2017.

Why integration matters

Integrating dental and medical insurance data helps create healthier and more involved employees, while lowering costs.

Just look at the results

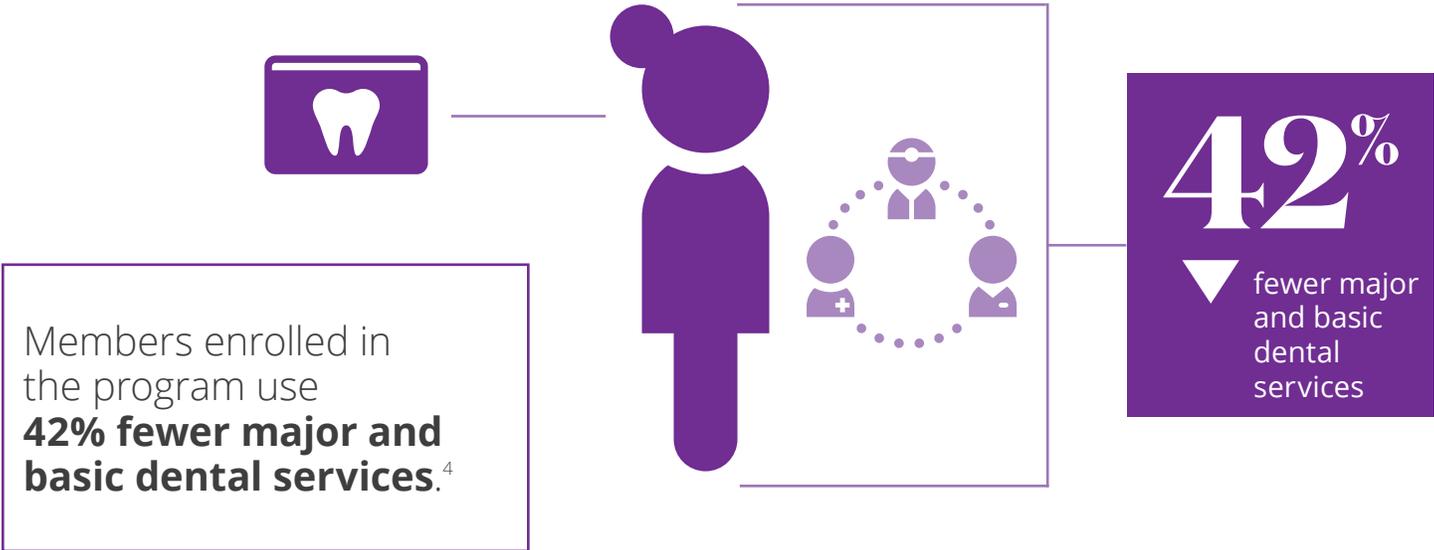
Members in the Aetna Dental/Medical Integration program:

Require fewer hospital admissions



⁴Ongoing statistically valid analysis of Aetna Dental/Medical Integration program customers. Aetna Informatics, 2010 – 2017.

Use fewer major and basic services



Access more preventive care



⁴Ongoing statistically valid analysis of Aetna Dental/Medical Integration program customers. Aetna Informatics, 2010 – 2017.

"Aetna's informatics [which include an updated, ongoing study of the effects of the insurer's DMI] is extremely helpful because of its huge data set," says Albert. "We hadn't been able to study cross-sectional, retrospective data until our 2006 survey. Before then, we only had access to small segments of the population through Medicare and Medicaid. When Aetna granted access to its insurance database, it opened up the broad middle for research."

Measuring the impact of integration

Numbers matter in research, where larger studies tend to provide more reliable results.

The Aetna Informatics department continues to mine those numbers and has found continued promise — and significant dollar savings — in dental/medical integration.

In the relatively short time since Aetna began integrating its dental and medical claims data, it has examined thousands of claims and medical conditions. The early results are promising. Here is just a sampling from the database of Aetna Dental/Medical Integration program members:

- Up to 20 percent of employees enjoy better health when the medical and dental data is integrated and outreach is provided.⁴
- By year-end 2017, Aetna identified more than 2.7 million members at risk and provided more than \$70 million in enhanced dental benefits — inducements to help prevent more serious and costly conditions.¹⁴
- Data integration helps produce better outcomes for diabetic members, improving control of the chronic disease by 45 percent.*
- In general, a member with well-controlled diabetes can cost about 10 percent less than someone whose diabetes is poorly controlled.⁴

*Of the diabetic members in the Aetna Dental/Medical Integration program who started going to the dentist, only 17.8 percent are poorly controlled. For diabetic members in a comparable group with no Aetna Dental/Medical Integration program, 32.6 percent are poorly controlled.

⁴Ongoing statistically valid analysis of Aetna Dental/Medical Integration program customers. Aetna Informatics, 2010 – 2017.

¹⁴Aetna Dental/Medical Integration program Book of Business report, as of December 2017.

What does all this mean to employers?

While integrating dental and medical data is clearly a plus for members — especially for those with chronic diseases like diabetes — such a program can also prove useful for plan sponsors. Giving employees access to the Aetna Dental/Medical Integration program potentially offers cost savings that may help companies save on benefits expenditures.

According to the Integrated Benefits Institute, poor health costs the U.S. economy some \$576 billion.¹⁵ About 39 percent of that — or \$227 billion — is due to lost productivity.¹⁵ Wage replacement and medical and pharmacy costs make up the rest of the total.

“We have been very successful encouraging at-risk members who were not visiting the dentist to begin receiving dental care,” says Conicella. “By integrating our medical and dental databases, we can coordinate care and provide our members with better overall value and our plan sponsors with a healthier workforce.”

Aetna has deep experience integrating other insurance and employee benefits products, including absence management programs and disability insurance. Its study released two years ago, for instance, found that integrated programs in those areas help employers reduce average claims costs about \$1,074 per claim and get employees back to work an average of about 4.72 days sooner.¹⁶

So it’s no surprise that integration between medical and dental benefits pays dividends.

“It is in employers’ best interest to give their employees the tools that help them maintain good health or become healthier if they have chronic conditions,” says Conicella. “Integrating dental and medical is a big step in that direction.”

It’s more than just about numbers

The Aetna Dental/Medical Integration program encourages employees to receive regular dental care, with no extra cost or paperwork for employers. The features of the program include:

- Education by email, phone and mail on how gum disease impacts overall health
- A dedicated dental care coordinator who helps members choose a dentist and make appointments
- Enhanced dental benefits**
- Follow-up support to ensure needed care is provided

Employers aren’t required to provide added administration for integrating medical plans and dental insurance — Aetna automatically enrolls at-risk employees with fully insured plans at no cost. Plan sponsors who are self-insured can also take advantage of the Aetna Dental/Medical Integration program, although the employer must opt in to implement the program. Aetna may even be able to work with another medical plan insurance carrier to give members and employers the benefits of integrated data.

**Exclusions and limitations may apply. Treatment offered is based on members’ dental evaluations.

¹⁵Using the IBI Full Cost Estimator (FCE), September 2012. Available at: ibiweb.org/research-resources/detail/poor-health-costs-u.s.-economy-576-billion-infographic. Accessed May 31, 2017.

¹⁶Aetna. Integrating absence management programs helps reduce costs and improve productivity. November 1, 2011. Available at: news.aetna.com/news-releases/integrating-absence-management-programs-helps-reduce-costs-and-improve-productivity. Accessed May 31, 2017.

**So what's the
bottom line?**

When you add up the benefits for both employers and employees and factor in no cost and the ease of administration, dental and medical integration is an idea whose time has come.

"It is slow, but there is progress," says Cohen, who has preached the benefits of integrating medical and dental care for almost a half-century. "Our greatest progress is in research. Today, we're trying to pinpoint mechanisms, not just associations. And a big part of any solution is the education of patients by their caregiver."

Harper believes dentists are one half of the caregiver solution, given their position in their communities: "Dentists are poised to become gatekeepers because of their training in oral medicine. If America is truly serious about health care, we will address this disparity in knowledge, train physicians and nurses to conduct oral health screenings as an integral part of their basic health screening, and encourage them to refer patients to dental professionals for immediate and preventive care."

"There is already an understanding that good oral health is related to diabetes control, for instance," says Albert. "The American Diabetes Association recommends an annual dental exam. The diabetes association is very strong.

"But we are examining other possible connections between medical conditions and oral health. Researchers are looking at chronic renal disease and oral health. Columbia is studying whether there is a connection between periodontal disease and changes in the carotid artery.

"This is the direction dental and medical schools are headed," Albert concludes. "The medical profession is working toward treating whole patients and not dividing them into sections."

"If America is truly serious about health care, we will address this disparity in knowledge."

Talk to your Aetna representative today

Learn more about how the Aetna Dental/Medical Integration program can help improve employee health and lower costs.

This material is for information only. Health and dental information programs provide general health and dental information and are not a substitute for diagnosis or treatment by a physician, dentist, or other health or dental care professional. Dental benefits and dental insurance plans contain exclusions and limitations. The Aetna Dental/Medical Integration program, as well as dental plan features and availability, may vary by location and is subject to change. Information is believed to be accurate as of the production date; however, it is subject to change. For more information about Aetna plans, refer to [aetna.com](https://www.aetna.com).

Policy forms issued in Oklahoma include: GR-9N, GR-23 and/or GR-29N.

Policy forms issued in Missouri include: AL HGrpPol-Dental 01, DM HGrpAg 01.

The Aetna logo consists of the word "aetna" in a bold, lowercase, sans-serif font. The letter "a" is stylized with a vertical line through its center. A registered trademark symbol (®) is located at the top right of the letter "a".