



Vision

The foremost organization in driving healthcare decisions based on value to payors and consumers

Mission

Promote health of consumers through value-based coverage and innovative health benefit design

Strategy

Bring focus and attention to the fundamental changes needed in health coverage and benefit design to reduce overall costs and improve health outcomes

Foreword: Introducing the Benefit Design Institute

The Benefit Design Institute (BDI) has been established to help send the following message—a message I endorse: It is time for industry captains, public policy leaders and all United States citizens to realize that healthcare costs in this country are spiraling out of control, jeopardizing the entire healthcare system, threatening to sink the viability of some of this country's core industries and killing small business.

The percentage of businesses providing healthcare coverage to their workers has dropped from 69% in 2000 to 60% today. Four years of double-digit health care premium increases have taken their toll on business profits and workers' paychecks and driven millions more into the legions of the uninsured. All of us need to take responsibility for making changes radical enough to reverse this stubborn trend. Failure is not an option. The BDI believes that payors, vendors, and policymakers must shift greater resources to preventative health strategies and proven wellness programs and that individuals must take greater responsibility for their health status.

Illness and infirmity are driven far more by the way we live our lives than by factors outside our control. Whether it is those of us who have held or now hold public office, manage major enterprises, teach our children, care for our sick or just go to work and do our best every day, we have a moral duty to manage our own health thoughtfully and effectively while enabling others to do the same. Our way of delivering and financing health care misses this critical fact entirely and therefore does little to encourage this thinking. Consumers, doctors and those who pay for health care need to significantly change their approach to the system by turning it upside down—by spending a far greater amount of our dollars, time and energy preventing disease rather than using nearly all our resources to treat disease. BDI is dedicated to driving research, developing best practices, and helping to prove the wisdom of this approach.

The Benefit Design Institute Forum brought together influential healthcare providers, insurers, employer health plan sponsors and benefit design consultants to rethink benefit design strategies and then discuss those concepts in the context of better prevention and treatment of high-cost illnesses. The Forum's objectives were solution-focused, and the results were remarkable. Eighteen participants discussed global benefit design issues and then related them to the factors impacting the treatment and management of cardiometabolic disease. They debated how benefit design strategies and aligned incentives can reduce cardiometabolic risk factors and optimize overall health outcomes.

The obesity epidemic in the United States is behind much of the chronic illness in this country. It represents a primary burden on the healthcare system and it is very often associated with cardiometabolic-related disease. Starting with a call to action for defeat of these cardiometabolic-related conditions and the spiraling cost burden of our healthcare system, this paper presents an overview of findings of this Forum and contains a strong list of recommendations to be implemented going forward.



Tommy Thompson



Tommy Thompson
Former Secretary,
Department of Health
and Human Services

Benefit Design Institute Forum Participants

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Table of Contents



Background and Introduction: The Benefit Design Institute Forum 1

BDI Forum Outlines Benefit Design Debate 2

Understanding Employer Healthcare Costs 2

Shift Focus to Prevention 3

Human Capital Management 4

Data Integration 5

Avoiding the Silo Mentality 6

Use of Incentives 7

Consumer-Driven Health Care 8



Winning Strategies for Employers 9

Checklist of Key Components for Re-engineering Benefit Design 9

Applying Innovative Benefit Design Strategies to Improve Cardiometabolic Health 10

Focus: Cardiometabolic Risk Factors 10

Tracking the Discovery of Metabolic Syndrome 11

Identifying Cardiometabolic Risk Factors 12

Treatment of Individual Cardiometabolic Risk Factors 12

BDI Forum Recommendations 15

Epilogue 16

References & Credits 17



Background and Introduction: The Benefit Design Institute Forum

One way to successfully control health costs is to re-engineer benefit design to focus on prevention. Such an approach requires rethinking health management and risk prevention strategies through the employer-based healthcare system. An influential group of thought leaders, including employers, business coalition leaders, disease management vendors, and benefit design consultants initiated the task more than a year ago. This BDI Forum provided an opportunity and venue for these healthcare leaders to meet, deliberate, brainstorm and offer benefit design solutions to the health crises facing the American healthcare system. Since then, benefit design initiatives have been continuing to evolve with some innovations and unique solutions gaining a foothold in the rapidly shifting world of health care. For example, we have begun to see benefit design initiatives cluster around employer activities. Conversely, a disturbing trend has also begun to develop as we've seen data mounting that shows current conditions are not sustainable.

Are we overstating the case by calling it a crisis?

The Towers Perrin Health Care Cost Survey released September 28, 2005, showed:

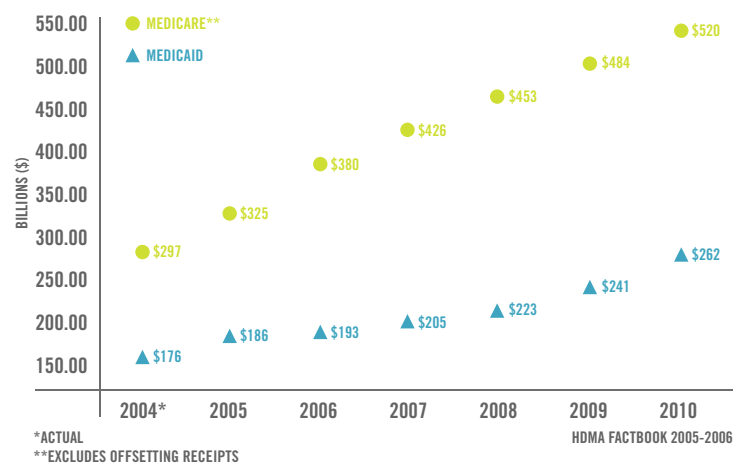
- Employees are spending 64% more for health care than they did five years ago
- Employers' costs have risen 78% over the same five years
- Costs for retirees under the age of 65 will rise at 10% a year
- 53% of companies offering retiree benefits are going to rethink their commitment to all retirement programs

The Benefit Design Institute recognizes the seriousness of these burgeoning demands on the U.S. health system, including upfront costs and the impact on federal and state government payors, employers, providers, risk-bearing health plans and consumers. The problem is not just isolated to health care. It cuts to the heart of total productivity and the economic under-pinnings of our national interests. The very philosophical basis for how we provide health care, who gets care, who pays for it

and who makes those decisions is at the very core of our society. How we choose to answer these questions will determine the direction of this country and have effects far beyond the health care system itself. In essence, the healthcare debate is a microcosm for a much larger debate about the direction of our country. How we answer these questions is critical to our future.

As former U.S. HHS Secretary Tommy Thompson said in his foreword, statistics show that private industry is moving away from providing health care to its employees. Today, only about 60% of Americans still get their health care through the employer-based system. Meanwhile, even though the numbers of uninsured have remained relatively stable since the Clinton Administration's effort to nationalize the healthcare system in 1993, many more people have come under the care of state and federal governments.

Figure 1: Projected Growth of Medicare and Medicaid Spending: 2004-2010



The result of the BDI Forum is a list of recommendations and a functional set of next steps and action items that will build on the momentum for employer-based innovative benefit design. As the first of several discussions on high-risk disease states, this Forum considered how to apply innovative benefit design strategies to metabolic syndrome and its related cardiometabolic risk factors. A recent study¹ determined that 33% of the commercially insured working population meets the criteria for metabolic syndrome. Further, the study showed how the presence of metabolic syndrome increases the rate of prevalent chronic diseases such as diabetes, coronary heart disease, hypertension and stroke.

Not all factors driving health system cost increases are within our control, but BDI Forum participants believe there are areas where individual corporate and public policy choices can make a significant difference in the rate of increase of unintended resource utilization and shift that spending to premeditated and intelligent resource allocation with a calculated return on investment. Unanimously, BDI Forum participants agreed that health benefit design is the place to start.

BDI Forum Outlines Benefit Design Debate

“The right answer to the wrong question is much worse than the wrong answer to the right question, and if our question is how do we control cost, we are asking the wrong question. It is a question that a lot of business people are still asking, but they need to get onto a different question: How do we turn health into value, because cost control is mission impossible.”

- BDI Forum Participant

Understanding Employer Healthcare Costs

In the employer community today, there is general inability to assess the value of a company's healthcare program, largely because the data integration, outcomes measurement and management process systems are not yet in place to do so. Passive health programs simply designed to do nothing but pay the bills can no longer promise to maintain a workforce able to compete with other more enlightened U.S. companies.

A well designed health and disability benefit drives corporate success by increasing competitiveness, enhancing productivity, and recruiting and retaining the best employees available. Health cost trends may now be leveling off, but they are still at an unsustainable level. Employers have been forced to incorporate higher co-pays, co-insurance, reference pricing for high cost drugs and other cost-shifting methods. None of these tactics, by themselves, will reduce overall system costs in the long run. Long-term cost control will involve an integrated, focused and targeted health benefit design

strategy that considers the overall health of the workforce and the impact of total health management, disability, productivity, insurance premiums and mortality costs on business.

The cost of poor workforce health goes well beyond health program expenditures. Employers must understand that company costs related to an avoidable health episode and health program expenditures - whether insurance premiums or paid claims - are not the same thing.

“This cannot be a cost control strategy. This has to be a return on investment strategy and there is ample opportunity to demonstrate how health can be an investment in the business.”

- BDI Forum Participant

The burden of illness or injury is a huge disruption in business operations. Burden of illness costs include the overall economic and health impact of a disease or condition including cost of health care, workplace/employer and household costs, morbidity and mortality. Unless a company utilizes preventative care strategies, it runs a much larger risk of catastrophic healthcare episodes for many of its highest risk workers.

Employers understand the impact of an employee absent from work, but they don't necessarily understand the value of taking steps to prevent absenteeism. Employers also must recognize the disadvantages of what is called "presenteeism" which is sub-par performance in the workplace because of disease or injury-related pain, discomfort or disorientation. Costs related to an avoidable health episode or sub-par worker performance cannot be equated, dollar for dollar, with health program expenditures such as insurance premiums or paid claims that support or restore employee functioning.

There is a lack of recognition that sick or under-producing employees increase the burden of illness and make companies and U.S. industries less competitive in a global economy. In order to reduce the health benefits cost advantage of foreign competitors, U.S. employers and their healthcare industry vendors must shift their health program focus from disease treatment to an overall health management approach.

As a critical first step toward a sustainable healthcare regimen, employers should attack the most prevalent healthcare threat to any group of workers - lifestyle components that contribute to some of the most common, costly and avoidable co-morbidities such as diabetes, cardiovascular disease and depression. Employers and payors need the help of health actuaries and healthcare practitioners to determine the costs associated with a failure to identify high-risk patients in advance of acute health episodes.

BDI Forum Recommendations

- Develop and initiate a campaign that encourages employers to become more creative in attempting to control healthcare-related costs by considering the impact of avoiding costs and shifting the responsibility of good health onto employees
- Create a tool that uses all variables required to calculate a company's true healthcare costs with formulas, algorithms, and models that account for the overall burden of illness and highest risk populations
- Develop educational materials for employees which illustrate how rising healthcare costs compete for company resources and crowd out capital for other strategic needs of the company

Shift Focus to Prevention

“We must stop looking at claims through the rearview mirror, and start looking through the windshield to see what may well happen if we don’t anticipate trouble.”

- BDI Forum Participant

Preventative health was abandoned in the early 1900’s in favor of a curative approach to disease. Historically, the health community has focused its scientific research on developing effective treatment approaches for disease states already exhibiting symptoms and negative health effects in a patient. As a result, the curative approach has prevailed and is the primary focus of healthcare reimbursement.

An illustration of this bias toward the curative approach is the current Health Plan Employer Data and Information Set (HEDIS) health quality measures, which quantify how effectively healthcare providers cope with treatment of illness. BDI Forum participants recommend development of a set of parallel quality measurement standards for preventative healthcare methods and successful population health management techniques.

Effective preventative health strategies will often cost more up front, whether for drugs, exercise instruction and training, or facilitation of work day physical activity, than will traditional plans simply designed to treat disease. However, it is now quite clear that an approach which simply treats symptoms and doesn’t challenge patients to change behaviors that lead to disease, shortens their lives and uses up resources in a way that threatens their livelihood. This approach is not an optimal health management design and makes little economic sense. Both employers and employees must realize the need to shift more resources to disease prevention to change this trend.

Some of the most significant of these costs do not necessarily occur until later in life, possibly during retirement years, making it difficult for employers to understand how an investment in preventative healthcare strategies will payoff. Therefore, it is critical for employers to demand that health plans provide the necessary information to identify high-risk patients and drive proactive health management strategies well before retirement years.



“Instead of focusing on what it costs to treat, let’s focus on what it costs when we forget to look – we need to understand the cost of not dealing with risks.”

– BDI Forum Participant

One method that deserves greater attention is employer development of a workforce healthcare registry designed to identify high-risk patients. Employers should encourage their workers to cooperate with their insurers or third party health program administrators in a HIPAA-compliant manner to catalogue health information that can help identify individual worker health risks. Routine Health Risk Assessments (HRAs) need to become best practice, and if necessary, employees should be financially rewarded in order to drive maximum participation. Employers also need to explore employee incentive plans that offer more attractive co-pays and co-insurance plans for those who participate in HRAs, wellness programs, and maintain good health status. If several key states’ anti-discrimination laws unreasonably interfere with this approach, an internal discussion of these laws should be initiated or federal preemptive measures should be considered.

BDI Forum Recommendations

- Identify health plans, providers and employers who have already proven the value of preventative health programs and incorporate these best practices into benefit design
- Support the development and implementation of a standard Economic Valuation Tool for determining a measurable return from an investment in preventative healthcare programs and make this evaluation tool realistic as per the size of the company using it
- Incorporate HRAs as a standard in benefit design in order to identify and manage high-risk populations and build in appropriate incentives to encourage employee participation
- Enter into longer-term contracts that incorporate financial incentives for health plans to make the necessary investments in preventative health services to best manage patient care outcomes and not just cost of care
- Encourage the development of quality measurement standards for preventative care and population health management comparable to HEDIS outcomes measurements for the treatment of illness



As to employer-vendor relationships, employers should require health plans to make investments in aggressive preventative health strategies. In turn employers will continue doing business with health plans for longer periods of time assuming good faith efforts are made to facilitate such a strategy. Employers need to move beyond bidding the contract out every two years if they expect health plans to make an investment in the management of preventative health, instead of solely focusing on managing cost.

Human Capital Management

Employers are inclined to measure success of their organization by looking at the balance sheet. Although healthcare costs are an enormous expense, employers often do not recognize the impact on human capital other than looking at healthcare claims and premium expenses. Fortunately, it has become easier in recent years to collect data and produce analyses which show higher worker productivity and overall competitiveness through optimal management of workforce health.

Airline safety and workplace safety are areas where private initiatives and public regulation have combined to make vast improvements over a short period of time. In today's enlightened workplace, the operating belief is that all workplace accidents are preventable and therefore accidents that occur are the result of a management or process failure. To the extent that most workers' health claims are driven by lifestyle and not a genetic disposition to disease, they arguably could be viewed as a process failure, as well. This process failure could well be inattention to general health and wellness which could be addressed through health benefit design changes.

There was unanimous agreement by the BDI Forum participants that the value of a healthy workforce should be considered a capital asset on the company's balance sheet. C-suite executives and senior management should assume greater responsibility for the health and well-being of their workforce and should view effective human capital management as a strategic function of the business enterprise. Ultimately, CEOs need to be made responsible for the overall health of their workforce and be held accountable for health performance. Their own compensation should be partly based on the financial and human well-being of the company. Also, similar to the equipment depreciation tax write-off, tax laws might be adjusted to allow for a workforce depreciation allowance.

It was the consensus of BDI Forum participants that health benefit programs should be viewed as a corporate strategic imperative and corporations should establish a Human Capital Committee whose focus is to improve the overall health of the company's workforce. The Human Capital Committee would assist top executives in evaluating the performance of health insurers or administrators and empowering employees to take responsibility for their own health.

It was further agreed that since employers voluntarily provide health benefits, they can be expected to start demanding that employees who want to continue enjoying those benefits make a reasonable effort to extend their value by adopting healthier lifestyle habits.

BDI Forum Recommendations

- Develop model programs for measuring, demonstrating, and communicating to the world the value of a healthy workforce, not just in terms of productivity and the bottom line, but also worker satisfaction and retention levels
- Establish a Human Capital Committee in the executive structure of corporations which would focus on improving and enhancing the overall physical and mental health of the company's workforce
- Develop guidelines, best practices and other tools to assist the Human Capital Committee in its management of the employees' overall health and healthcare costs
- Institute corporate governance pathways and incentives to encourage CEOs to assume responsibility for the overall health of their workforce



Data Integration

Ideally, employers should consider re-engineering their health benefit strategies with help from benefit design organizations, health plans, pharmacy benefit management companies, and other healthcare vendors. Until now, there has been a lack of leadership in this area. Many vendors are just starting to develop strategies that coincide with employers' desire for a more productive and consistently healthy workforce. On the other hand, some innovative employers have integrated health and functional data into benefit design and have had years of proven success.



In order to make the best use of this data from healthcare vendors, integrated data systems and metrics must be developed which allow organizations to work with each other and enable employers to make sense of health and functional data being generated by health program activities.

Employers must determine whether vendors are using standard metrics to gauge workforce health. Among the most important metrics will be those which evaluate the following:

- Effectiveness in identifying high-risk patients
- Improved patient compliance treatment regimens
- Successful clinical outcomes
- Incidence of avoidable conditions
- Pay for performance programs

BDI Forum Recommendations

- Develop integrated data systems and design innovative, customized benefit design evaluation tools which allow employers to identify areas where their healthcare expenditures can be improved



Avoiding the Silo Mentality

The silo mentality exists in most health plans where expenditures for drugs come out of the pharmacy budget and medical care costs come out of the medical budget. Only recently has the importance of the relationship between these two budgets been addressed.

Most health plans isolate their pharmacy and medical budgets from one another. Commonly, there is no way to connect the pharmacy claims data with the medical claims data to show relationships except with manual intervention. However, that is changing. Some health plans have established programs that incorporate “episodes

of treatment” classification systems. These systems connect all costs, including medical and pharmacy, within a treatment episode. Health economic studies that evaluate the relationship of drug spend to medical expenditures are finding in virtually all cases that money spent on appropriate medications early in a disease or condition are offset by monies not spent in hospitalization, laboratory services, surgical procedures and physicians’ services later.

The silo mentality does not just exist in health plans individually categorizing their drug and medical spend. Internal accounting silos also are pervasive among employers. One corporate structure issue that prevents employers from understanding the true cost of their healthcare program is the segregation of multiple sources of health cost payments into internal accounting silos. Most companies pay different, but related, health claims out of different accounts with little coordination or end-of-year reconciliation of their overall healthcare costs. Internal corporate silos include health insurance premiums, medical claims, cost of claims administration, cost of prescriptions and medical supplies, worker’s compensation premiums and claims payments, and long- and short-term disability premiums and claims. Often, the databases tracking these costs are not linked, compared, or reconciled making it extremely difficult to assess the total cost of an employee’s illness or injury.

To remedy this lack of coordination and analysis, employers need to develop a methodology which will contain all variables used to calculate a company’s true healthcare program costs, including direct and indirect expenses of an employee’s sickness or injury. Ideally, this process would help employers effectively determine the overall value of their healthcare programs.

Internally, an employer’s integrated approach to reconciling siloed data would align the objectives of departments across the organization, such as:

- 1) the employer’s life, health and disability programs
- 2) the company’s human resource department
- 3) the corporate medical department
- 4) the occupational health or health administration program



Use of Incentives

An effort must be made to educate employees on how to become active participants in healthcare decision-making. In many companies there is a misalignment of incentives for employers and employees regarding utilization of healthcare resources. Employers should create incentives and disincentives for employees to be good stewards of their own health status. Employees must be presented with both personal benefit and business cases for change and then provided the education to accomplish meaningful behavioral change.

Employee incentives should be linked directly to objective evidence that they are making progress toward clinically verifiable improvement. This can be accomplished by regular checks of certain metabolic risk factors such as triglyceride levels, cholesterol levels, weight, body fat and circulatory health. BDI Forum participants agreed that reasonable attempts should be made to evaluate the use of biometric data with low cost measurement systems now coming into the market, rather than relying entirely on self-reported physical activity or diet restriction. Programs that fail to analyze and validate progress may waste resources and risk losing the confidence of worker participants and business executives.

Employees like incentives that are financially meaningful. Offering relief from the escalating price tag for health premiums and high co-pays is a good place to provide incentives that are tied to their behaviors. Such incentives can include:

- Reduce co-pays for chronic medications that demonstrate value at the individual level
- Premium rebates for adherence to a health improvement plan for a 6-12 month period
- Financial rewards for completing a Health Risk Assessment

Employee incentives are explicitly allowed under the Health Insurance Portability and Accountability Act of 1996 (HIPAA), a federal law designed to assure individuals fair treatment from health insurance plans. Although the law clearly prohibits discrimination based on health status, it does allow health plans or employers who self-insure



to give workers who agree to participate in a “bona fide wellness program” up to 20% discount on the worker’s portion of the premium. This is a significant discount which provides employers leeway in establishing the discount level needed to achieve maximum participation. Studies show that among companies which have established wellness programs, far too often participation rates are well under 50%. BDI Forum participants agreed that the use of incentives to maximize participation needs additional attention.

BDI Forum Recommendations

- Develop realistic and practical incentive matrices based upon employees’ active participation in health management programs, including tiered benefits, better co-payments, lower premiums, etc.



Consumer-Driven Health Care

Rising healthcare costs present a dilemma to those who pay for health benefits, whether it is private employers, government employers, or state and federal governments through Medicare or Medicaid. Benefit design has, until recently, been concerned primarily with cost control. Usually this means simply shifting more costs to employees via higher deductibles and co-insurance for hospital and doctor's office visits, and higher co-pays under multi-tiered drug plans at the pharmacy.

Shifting costs to patients does not, in itself, eliminate health risk or promote health maintenance. Ultimately, shifting the cost burden does not reduce long term medical costs if patients try to avoid paying higher deductibles, co-pays and co-insurance by delaying care and not filling prescribed medications.

Consumer-driven health care (CDHC) is the latest silver bullet that is thought to shift resource allocation by putting patients in charge of their own healthcare. It is the belief of many BDI Forum participants that, unfortunately, the Pareto Principle is in effect in CDHC, meaning that 20% of patients have the capacity and

interest to be intelligent consumers, while the other 80% will be uninformed or poorly motivated consumers. In a market-driven healthcare system, the mismatch between a poorly informed patient/consumer and the need for an informed purchaser of goods and services would undermine optimal distribution and utilization of healthcare resources.

Options within CDHC, such as health savings accounts and similar fiduciary arrangements, can and should be considered for market-based applications that have great potential for reducing the rate of increase in healthcare costs. Most BDI Forum participants were supportive of products such as health savings accounts because they incentivize account holders to take a greater interest in the behaviors that could potentially drive health episodes and result in direct financial impact to them. Since preventative care visits and tests are covered on a first-dollar basis without the need to disturb health savings account dollars, these preventative measures are more widely used than other forms of health insurance.

BDI Forum participants believe that employers need to take broad creative and novel approaches to providing incentives since it is frequently employers who are the payors/consumers of health care. Otherwise, the tipping point at which employers decide they can no longer voluntarily provide health benefits to their millions of workers will be reached and a true crisis will ensue.

BDI Forum Recommendations

- Consider offering health savings accounts or similar arrangements and educating employees on the benefits of these types of insurance products
- Educate employees about the importance of healthy lifestyle choices, and incentivize them to make choices which are economically and medically beneficial to themselves and their employers
- Provide access to data that allows individual patients and employers to make the best and most accurate decisions





Winning Strategies for Employers

BDI Forum participants suggested a number of winning strategies for employers seeking to optimize employee health. The following items were highlighted.

- Employer health enhancement systems should be proactive and simple
- Employer is widely known to attach a value to a healthy workforce
- Employer shows willingness to invest in workforce health
 - sponsors on-site health screening
 - encourages exercise during work hours
 - provides exercise and shower facilities
 - designs physical work-site features to accommodate physical activity
- Employer encourages employees to take responsibility for their own health
- Employer is willing to effectively align risks and rewards in health management strategies
- Employer implements a strategy which motivates, measures, and rewards behaviors to achieve widespread change for the better
- Employer invests capital on incentives for workers and providers
- CEO is measured by the health of his/her employees

Checklist of Key Components for Re-engineering Benefit Design

In summary, a well engineered health benefit design strategy will do the following:

- Leverage the influence and role of employers
- Educate and involve key stakeholders
- Identify health risks
- Focus on prevention
- Manage chronic conditions
- Increase access to chronic medications to improve compliance and persistence
- Maintain and/or improve functional job performance
- Institute workplace interventions that demonstrate value
- Incorporate employee incentives and disincentives
- Set a baseline to monitor improvements



Applying Innovative Benefit Design Strategies to Improve Cardiometabolic Health

BDI Forum participants spent significant time discussing the need for employers and health plans to begin developing and applying innovative benefit design to therapeutic areas responsible for the greatest impact on healthcare expenditures and employee productivity. A vast body of literature shows that two major diseases have substantial impact on the bottom line - heart disease and diabetes.

The American Heart Association estimates direct and indirect costs associated with heart disease in 2005 were \$254.8 billion. Additionally, coronary heart disease is the leading cause of premature, permanent disability in the U.S. labor force, accounting for 19% of disability allowances by the Social Security Administration. In overall spending, Medco reports the cardiovascular and endocrine & diabetes categories alone account for 30 cents of every dollar it spent on pharmaceuticals in 2004.² Another leading pharmacy benefit manager, Express Scripts, also released similar findings in its annual drug trend report. Statins have continued to hold the number-one spot for several years as its top drug spend category, and the ongoing and growing use of lipid-lowering agents accounted for 11% of overall drug spending for 2004. Drugs used to treat other cardiometabolic risk factors also represented some of the most costly categories of drug spend for Express Scripts. Antihypertensives was its fourth most costly category and antidiabetics its fifth most costly therapy class.³

When trying to quantify the component costs of cardiometabolic risk factors, researchers report that costs for diabetes and other conditions in the constellation of cardiometabolic risk factors have been estimated to average \$47,240 over 30 years.⁴

To avoid these escalating costs and minimize the financial burden related to cardiovascular disease, some progressive employers and health plans are targeting cardiovascular risk reduction as a strategic imperative and are re-evaluating their current approach to health benefit design.

“The management of macrovascular disease is estimated to be the largest cost component, costing \$24,330, or 52% of the costs. Nephropathy accounts for 21%, neuropathy accounts for 17%, and retinopathy accounts for 10%.”⁴



Focus: Cardiometabolic Risk Factors

To help enhance the understanding of cardiometabolic risk clusters among employers, the Benefit Design Institute offers this section to provide a brief overview of metabolic syndrome, a commonly recognized cardiometabolic risk cluster. We include the discussion of BDI Forum participants as it relates to identifying at-risk patients, therapeutic intervention strategies, and the importance of early intervention and prevention to improve cardiometabolic health and minimize cardiovascular risks.

Multiple worldwide studies have been conducted which clearly indicate the high risk of cardiovascular disease associated with a cluster of cardiometabolic risk factors. What is the connection between cardiometabolic risk factors and disease, and what is the underlying cause of the development of cardiometabolic risk factors? Recently, it has been discovered that the presence of excess abdominal adiposity, in the form of excess visceral fat, is related to the development of cardiometabolic risk factors.



Furthermore, adipose tissue is now known to be the body's largest metabolically active endocrine organ and secretes hormones that impact the production of insulin, glucose and lipids. It is this understanding that links abdominal adiposity to increased cardiometabolic risk, and underlines the importance of addressing abdominal adiposity within the cluster of cardiometabolic risk factors. A brief review of cardiometabolic risk factors is presented in Figure 2.

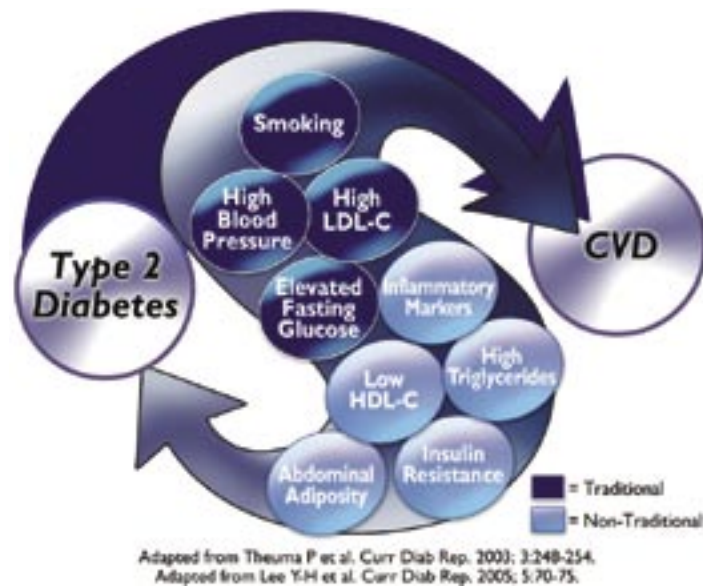


Figure 2

Over the last few years, metabolic syndrome has generated much interest and continues to gain acceptance within the cardiology and endocrinology communities. Although the mechanisms that link all the risk factors associated with metabolic syndrome are still under scrutiny, most major scientific societies agree on the need to consider metabolic syndrome when determining the risk for individual cardiovascular disease and planning therapeutic management.

Tracking the Discovery of Metabolic Syndrome

Metabolic syndrome, once thought to be only a precursor to diabetes, is now recognized as a constellation of well-defined risk factors that require additional screening and early intervention with lifestyle modification and/or pharmacologic therapies to reduce cardiovascular risk and/or progression to diabetes. Recognizing that the presence of cardiometabolic risk factors increases morbidity and mortality, the World Health Organization, the International Diabetes Federation, and the National Cholesterol

Education Program Adult Treatment Panel III have issued practice guidelines identifying risk factors which comprise the metabolic syndrome. However, the definitions differ and there is currently no consensus. The most widely used definition comes from the NCEP ATP III guidelines⁵ that define metabolic syndrome as the cluster or co-occurrence of any three of the following abnormalities:

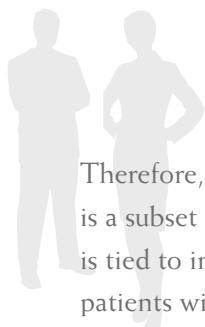
- abdominal obesity (waist > 35 inches for women, > 40 inches for men)
- elevated blood pressure ($\geq 130/85$ mm Hg)
- elevated fasting glucose (≥ 110 mg/dl)
- elevated levels of triglycerides (≥ 150 mg/dl)
- low levels of HDL-C (50 mg/dl in women, < 40 mg/dl in men)

Although the prevalence of metabolic syndrome as defined by NCEP ATP III is unknown, data show that metabolic syndrome is on the rise in the United States.⁶



Figure 3

In assessing cardiometabolic risk, as measured by the presence of metabolic syndrome, a history of CHD, MI, or stroke was significantly more common in those individuals with risk factors than without. Both total mortality and cardiovascular mortality were found to be significantly more prevalent in subjects with metabolic syndrome compared with subjects without metabolic syndrome.⁷



Therefore, it is now known that metabolic syndrome is a subset of cardiometabolic risk factors and, as such, is tied to increased cardiovascular disease. In this context, patients with clusters of cardiometabolic risk factors such as metabolic syndrome are a costly group for healthcare organizations and employers and a complex group to treat.

Identifying Cardiometabolic Risk Factors

Research continues to confirm that we need a more aggressive and comprehensive approach to the detection and management of cardiometabolic risk factors. Annual cardiovascular screening with measurement of weight, waist circumference, blood pressure, blood lipids, and fasting blood sugar should be performed. Such annual screenings will allow healthcare providers to identify high-risk patients and prescribe appropriate prevention and treatment measures.

Since waist circumference is a stronger predictor than body mass index (BMI) or waist-hip ratio (WHR)⁸, it is gaining acceptance as a tool for identifying patients at risk for potential progression to type 2 diabetes or cardiovascular disease (Figure 4). Because of its relationship to abdominal adiposity, waist circumference is an easy, inexpensive way to screen for the risk of diabetes, dyslipidemia and other cardiometabolic disorders. These easy and low-cost identification methods allow for earlier initiation of preventative measures and treatment options to achieve risk reduction.

Risk of Type 2 Diabetes Increases with Waist Circumference

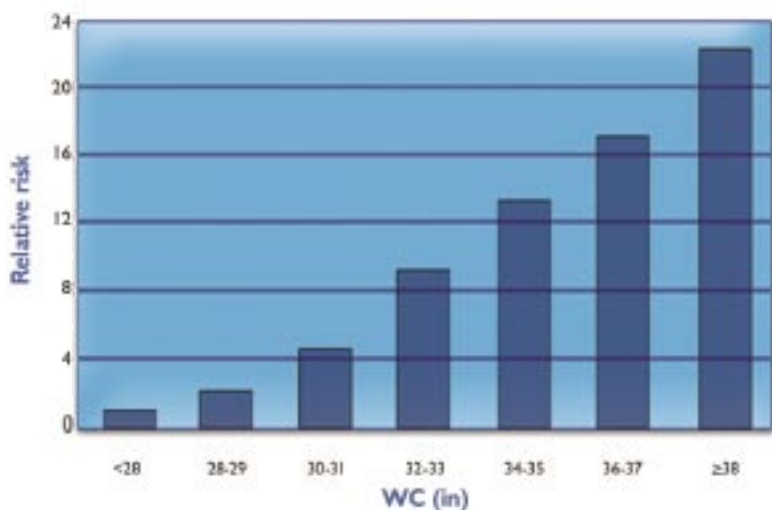


Figure 4



Treatment of Individual Cardiometabolic Risk Factors

Cardiometabolic risk factors need to be recognized early and aggressive therapy initiated, so patients who are at high risk for developing associated cardiovascular and metabolic comorbidities can be diverted from the further complications of disease. It is thought that improving glycemic control, improving the lipid profile, lowering blood pressure, and decreasing weight will reduce long-term healthcare resource utilization as well as improve the quality of life for patients.

Treatment goals should focus on cardiometabolic risk factor reduction through lifestyle modification, including weight reduction, increased physical activity, and pharmacotherapy as appropriate. The cornerstone for clinical



management of adults with any of these risk factors is appropriate lifestyle changes. Moderate levels of weight loss (5% -10%) with optimal nutrition and exercise (walking at least 60 minutes each day) have proven effective in reducing the risk for developing diabetes mellitus, improving the other risk factors, and thereby decreasing the risk for cardiovascular events.

Patients exhibiting cardiometabolic risk factors require pharmacologic therapy that is carefully chosen, keeping several important requirements in mind to:

- 1) address all reversible CV risk factors
- 2) prescribe medicines based on well-designed, randomized clinical trial outcomes
- 3) utilize treatments that provide concomitant benefits to more than one risk factor
- 4) encourage long term treatment adherence

There are multiple targets for prevention of cardiovascular and metabolic diseases. Each of the best established therapies for cardiovascular disease and diabetes primarily targets these individual cardiometabolic risk factors. Combination therapy for multiple risk factors is often necessary for the successful management of patients presenting with a cluster of risk factors. Current treatments do not cut across the individual components of cardiometabolic risk factors to offer a comprehensive approach to address the condition. A convincing medical and economic case exists for developing a treatment approach that attacks the root cause of cardiometabolic risk factors, rather than the current scattershot approach to treating individual risk factors. Ideally, employing treatments which address multiple cardiometabolic risk factors including abdominal adiposity will help attack the source of systemic metabolic disruption.

Each patient needs a comprehensive treatment plan for cardiometabolic risk factors to produce successful results. In order to achieve optimal outcomes, healthcare providers have a responsibility to stay informed of current treatment options and future investigational pharmaceutical agents, provide medication monitoring, and encourage patient compliance with treatment plans. A combined effort of payors, providers and patients is required to achieve long



term sustained treatment success. As our knowledge of cardiometabolic risk factors grows and single treatments targeting multiple risk factors become available, innovative health benefit design strategies that encourage the early detection of high-risk patients and increase access to appropriate therapies will be necessary to optimize patient care and minimize economic burden.

The direct and indirect costs of cardiometabolic risk factors are a serious burden on our healthcare system. This crisis calls for a targeted, coordinated and measurable effort to combat the growing incidence of associated metabolic diseases at its core – the reduction of abdominal adipose tissue. A comprehensive benefit design strategy should encompass the following three-pronged approach:

- 1) Screening and identification of high-risk employees including measurement of waist circumference
- 2) Primary prevention to manage at-risk employees who have been identified in order to delay or avoid the consequences of unaddressed cardiometabolic risk factors that lead to heart attacks, stroke and diabetes
- 3) Secondary prevention to manage those high-risk employees who have already had an event or escalated to advanced disease¹





During the BDI Forum, the following key issues in relation to this healthcare crisis under the current treatment paradigm were identified:

- Few providers, payors, employers, or patients understand or appreciate the significance and impact of abdominal adiposity on cardiovascular risk
- It is imperative to view abdominal adiposity as a serious cardiometabolic risk factor that must be addressed in health benefit design
- There is a need to re-engineer benefit design strategies and align incentives to improve cardiometabolic-related outcomes and decrease cardiovascular risk
- Significant attention and resources should be directed towards identification, prevention, and management of multiple cardiometabolic risk factors
- There is a need to educate physicians on strategies to identify high-risk patients. Vital sign check ups at physician offices should include measurement of waist circumference to determine the presence of excess abdominal fat, which is considered a strong predictor of cardiovascular and metabolic risk. Specific recommendations include:
 - Provide tape measures
 - Encourage more frequent well-patient exams
 - Place more emphasis on identification and prevention for men under 55 years of age
 - Develop Pay for Performance (P4P) incentive programs for physicians who provide preventative care
- Health plans can support employers in their attempts to improve cardiometabolic-related outcomes by providing:
 - Data integration that improves delivery of care
 - Physician network development and education services
 - Benefit design recommendations based on medical and pharmacy claims analysis
 - Aggregated clinical outcomes data (e.g. LDL, HDL)
 - Functional outcomes data (relating medical outcomes such as measurable improvements in lab results and their impact on absenteeism)
- Workplace intervention pilot programs designed to demonstrate the value of improved metabolic health and how integrated strategies can positively impact outcomes should be implemented
- Economic Valuation Tools should be developed for use among employers to evaluate and document economic outcomes
- Pharmaceutical agents with documented evidence supporting their effectiveness in reducing cardiometabolic risk factors should be favorably positioned in pharmacy benefit design plans





BDI Forum Recommendations

Based on these global issues identified by BDI Forum participants, the following specific recommendations were developed to improve clinical and economic outcomes for cardiometabolic risk factors:

- Develop effective methods for identifying high-risk patients. This can occur in the workplace using the health risk assessments or through the physician's office. Health plans could drive patient identification through physicians' offices by requiring vital sign check-ups that include measurement of waist circumference to identify abdominal adiposity in addition to regular measurements already taken such as blood pressure, pulse, temperature, etc.
- Implement workplace intervention pilot programs designed to demonstrate the value of improved cardiometabolic health. Employers should take a baseline measure of the cardiometabolic health of their workforce and set regular goals for achieving an improved cardiometabolic scorecard that:
 - Can be used as an indicator of the value of human capital assets
 - Ties indicators to productivity changes
 - Identifies operational indicators of health
- Increase awareness about cardiometabolic risk factors and their treatment. Initiate broad public health strategies for educating healthcare providers, patients, and the community (e.g. health fairs, employer-sponsored clinics, etc.) on the importance of recognizing and treating cardiometabolic risk factors.
- Increase recognition of the clustering of cardio-metabolic risk factors such as metabolic syndrome as a public health and public policy issue. Metabolic syndrome is beginning to gain recognition as a major public health problem by public officials, employers and medical professional societies.
- Develop a broad array of educational initiatives to help healthcare professionals, benefit design decision-makers, and consumers understand the importance of centrally located adipose tissue and its relationship to cardiometabolic risk factors and highlight how lifestyle modification, early intervention, and the appropriate utilization of single, broad-spectrum pharmaceuticals that address multiple risk factors can result in significant cardiovascular risk reduction.
- Develop innovative health benefit strategies that include the use of integrated incentives that favorably tier physician co-pays and drug co-pays for those high-risk patients who demonstrate active participation in a behavior modification program targeting cardiometabolic risk reduction.
- Provide access to pharmaceutical agents with documented outcomes data. Pharmaceutical agents with evidence supporting their effectiveness in reducing cardiometabolic risk factors should be favorably positioned in a tiered formulary.
- Develop an Economic Valuation Tool for use by employers to document how innovative benefit design strategies can positively impact cardiometabolic outcomes.

Epilogue: A Call To Action

The Benefit Design Institute's inaugural Forum set out to discuss a broad range of health benefit design issues by convening influential thought leaders interested in improving the current state of the employer-based healthcare system. The Forum's discussions were solution-focused and resulted in a series of practical recommendations for those concerned with workplace health and the cost of employee health benefits to American businesses. We hope that the information and recommendations shared in this document will play a pivotal role in bringing about swift and decisive action in re-engineering employer health benefits. While BDI Forum participants focused on key global issues in its inaugural gathering, there was significant debate on how benefit design strategies and aligned incentives can improve the management of costly, high-risk disease states.

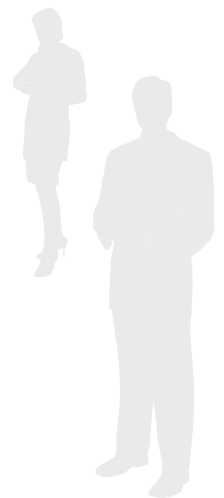
Since many employers have identified cardiovascular disease and diabetes as having the greatest impact on healthcare expenditures and employee productivity, BDI Forum participants focused their discussions on how innovative approaches to health benefit design can improve the identification and management of cardiometabolic risk factors. Research on the costs associated with cardiometabolic risk factors and risk clusters, such as metabolic syndrome, is still in its infancy. However, BDI Forum participants believe the evidence exists to support making the identification and management of cardiometabolic risk factors a healthcare priority for employers, health plans and patients. It was the belief of BDI Forum participants that the development of innovative benefit design strategies can improve cardiometabolic health by encouraging screening and risk identification, promoting preventative care and early intervention, and improving access to appropriate pharmaceuticals that address multiple cardiometabolic risk factors. This approach will be crucial for the future reduction of cardiovascular disease and improvement in workplace health.

It is BDI's goal that future meetings will bring about long-term, significant and fundamental change in the way we design health benefit strategies for improving clinical and economic outcomes of other costly, high-risk disease states. Benefit design plans that encourage providers to focus on risk identification and preventative care, incentivize patients to engage in lifestyle modifications, and provide access to pharmaceutical interventions demonstrating clinical and economic benefits is a great place to start.

As stated by Tommy Thompson, we must change the way we deliver and finance healthcare in the United States. It is BDI's conviction that payors, providers, and policy makers must focus their attention on the most prevalent, costly, and devastating diseases and attack them from a benefit design perspective.



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