

# Genomic Medicine and Employers:

Separating the Hope From  
the Hype

November 2018

 **NORTHEAST**  
BUSINESS GROUP ON HEALTH

**solutionscenter** 



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# What Is Genomic Medicine?



**Virtually every illness we experience has some basis in our genes.**

Until recently, doctors took genetics into consideration only in cases of birth defects and conditions like cystic fibrosis that have simple, predictable patterns of inheritance because of changes in a single gene. Today, genomic research is leading to knowledge about the role that multiple genetic factors play in more complex diseases such as cancer, diabetes and cardiovascular conditions. The result is the development of better diagnostics and more effective treatments, as well as improved decision-making tools for both doctors and patients.

Many treatments based on genomic research are years away given the time it takes to conduct studies and receive FDA approvals. But when it comes to screening and diagnostic testing, marketplace progress in genetics and genomics is happening quickly. Vendors have poured into the market with frequent announcements of new tests and applications, including a proliferation of direct-to-consumer offerings.

In March 2018, Northeast Business Group on Health (NEBGH) convened a roundtable on genomic medicine with 39 stakeholders—employers, clinical experts, benefits consultants and genomic vendors. Our aim was to cover basic ground. What is genomic medicine and what is its relevance for employers? How is it being used for diagnostics and treatment? For what medical conditions is it most useful? Can genomic medicine improve health outcomes and lower costs? And in this fast-changing field, what can employers expect from genomic medicine in the future?

**The field now includes both true discoveries and improbable hyperbole—making it challenging for employers to separate hype from promise.**

Employers at the roundtable said they want to understand genomic medicine and know what guidelines they should follow so they could make relevant benefits decisions. As summed up by one NEBGH member, “How do I know that I’m covering the right thing at the right price, without covering everything?”

The purpose of this guide is to provide an orientation on genomic medicine and give employers a place to start.

# Genetics and Genomics: The Terminology

## Gene

The basic physical and functional unit of heredity. Genes are made up of DNA — heredity material — and the Human Genome Project has estimated that humans have between 20,000 and 30,000 genes.

## Genome

An organism's complete set of DNA, a chemical compound that contains the genetic instructions needed to develop and direct the activities of every organism. DNA molecules are made of two twisting, paired strands made up of units called [nucleotide bases](#).<sup>1</sup> The human genome contains several billion of these base pairs, which reside in the nucleus of all cells.

## Genomic Sequencing

Determines the exact order of the bases in the genome.

## Genetic Testing

Identifies changes or mutations in chromosomes or genes; it can confirm or rule out a suspected genetic condition, and help determine someone's chance of developing a genetic disorder, according to the U.S. National Library of Medicine. Thousands of genetic tests exist. The most familiar form is prenatal screening that provides information on the presence of Down syndrome, Tay-Sachs disease and other genetic-linked diseases. Such standard testing is generally covered by employers.

## Genetic Disorder

A genetic problem caused by one or more abnormalities in the DNA sequence. Genetic disorders can be caused by a mutation in one gene (monogenic disorder), the combined action of more than one gene, traits resulting from a combination of genetic and environmental factors (multifactorial inheritance disorder), or by damage to chromosomes (the structures that carry genes), according to the [National Human Genome Research Institute](#).<sup>2</sup>

## Genomic Medicine

An emerging medical discipline that uses genomic information about an individual for diagnostic or therapeutic decision-making, according to the National Human Genome Research Institute. Genomics is the study of all of a person's genes (the genome), including interactions of genes with one another and with an individual's environment. Genomic medicine is most commonly applied in oncology, pharmacology, cardiology, rare and undiagnosed diseases, infectious disease, maternal health and mental health. Oncology in particular has incorporated genomics into clinical care; diagnostics for genetic and genomic markers often are included in cancer screenings and used to tailor therapeutic strategies. Such genomic-tailored approaches to cancer treatment can reduce the risk of overtreatment as well as injurious side effects from chemotherapy and radiation.

## Pharmacogenetics and Pharmacogenomics

How genes — either singly (pharmacogenetics) or in multiples (pharmacogenomics) affect a body's response to medications, which can determine whether a medication could be an effective treatment or whether side effects could result.

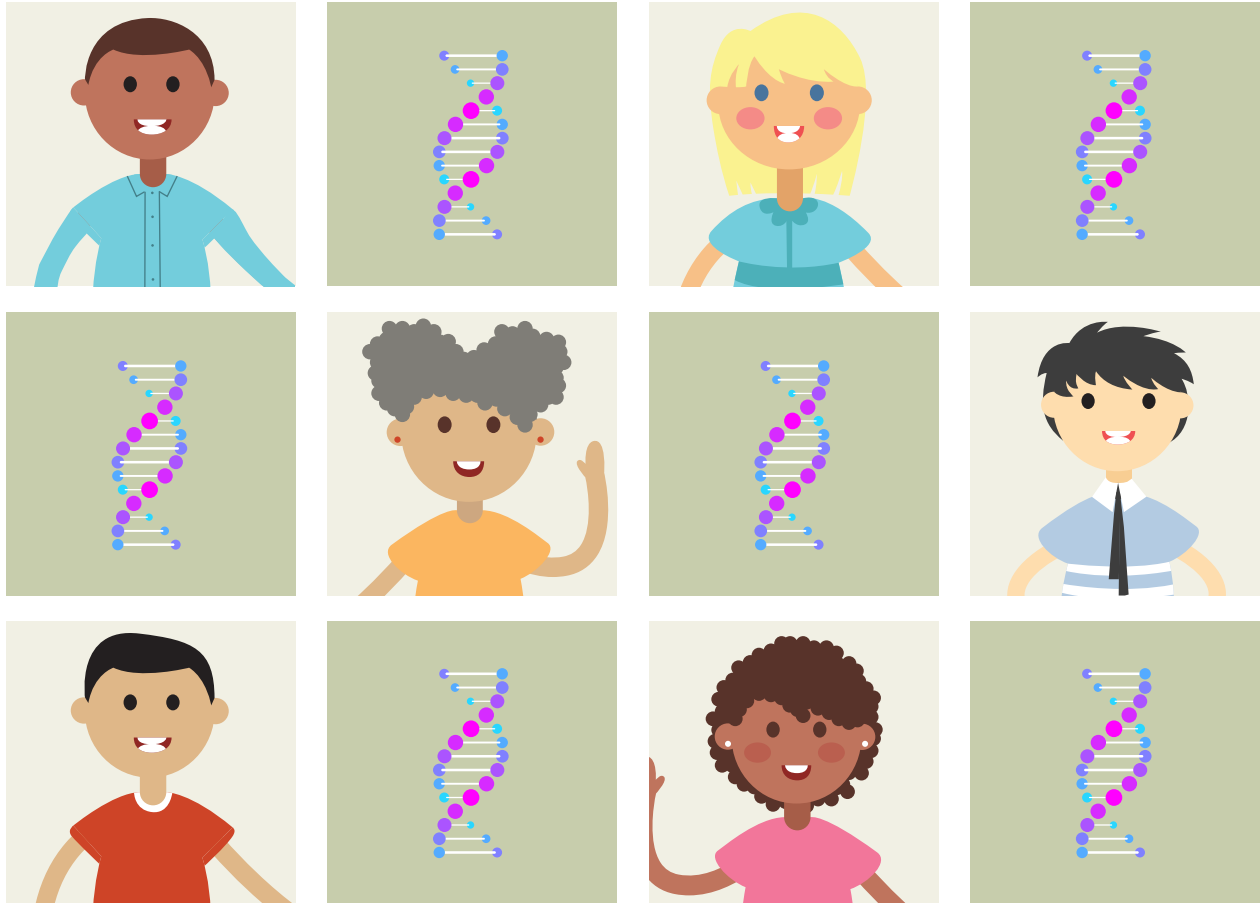
## Precision Medicine

Takes into account an individual's variations in genes, environment and lifestyle to determine if one treatment path is better than another. It is most commonly used in oncology and cardiology. Genomic medicine can be considered a component of precision medicine.

<sup>1</sup> <https://www.genome.gov/11006943/human-genome-project-completion-frequently-asked-questions/>

<sup>2</sup> <https://www.genome.gov/>

# Genetics vs. Genomics



Although genetics and genomics are often used interchangeably, there are important distinctions. **Genetics** is the study of heredity and genetic variation (thus human genetics is the study of human genetic variation) and **genomics** is the study of genomes. Genetic testing has become commonplace. Genomic medicine is an emerging medical discipline that uses genomic information as part of a person's clinical care—for diagnostics or therapeutics—and the health outcomes and policy implications of such diagnostic and therapeutic use, according to the [National Human Genome Research Institute](https://www.genome.gov/19016904/faq-about-genetic-and-genomic-science/).<sup>1</sup>

For the purpose of this guide, we will include genetic testing as part of our overall discussion of genomic medicine.

Let's first take a look at some common forms of genetic testing.



<sup>1</sup> <https://www.genome.gov/19016904/faq-about-genetic-and-genomic-science/>

# Common Forms of Genetic Testing for Inherited Traits

Genetic testing is used for standard prenatal screening for certain genetic syndromes that can affect the health of the baby; it can also be used by clinicians to determine the cause of certain problems and illnesses known to be related to genetic syndromes. Genetic testing can also help determine the risk of getting a specific disease that runs in the family, such as certain types of breast cancer or colon cancer, that have a genetic basis. These types of genetic tests are generally considered valuable but some health policy experts have expressed concern about the market's rapid growth. In a May 2018 issue of Health Affairs, researchers examined trends in genetic test availability and spending from 2014–2017, using data from commercial payers for privately insured populations. They found most spending was on prenatal tests, followed by hereditary cancer tests. There were some 75,000 genetic tests on the market, with about 10 new tests entering the market [daily](#).<sup>1</sup>

With the rapid proliferation of genetic tests for inherited traits, there has been a corresponding spike in direct-to-consumer advertising from vendors. As a result, employees may ask for benefits coverage or decide to pay the tab themselves. Well-known vendors include Color Genomics, a leader in employee genetic screening and counseling, and [23andMe](#)<sup>2</sup>, which got the FDA's blessing in March 2018 to sell the first direct-to-consumers at-home test for three breast cancer mutations common in Ashkenazi Jews. The [FDA's announcement](#)<sup>3</sup> came with a caveat, however: A negative test result did not rule out the presence of any of more than 1,000 other mutations also linked to a higher risk of breast cancer. The agency emphasized that the 23andMe test does not detect those other mutations.)

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<sup>1</sup> <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2018.0520>

<sup>2</sup> <https://www.nytimes.com/2018/03/06/well/fda-brca-home-testing.html>

<sup>3</sup> <https://www.statnews.com/2018/03/06/fda-approves-test-breast-cancer/>

Some employers have decided to add benefits for more genetic tests in addition to traditional prenatal and maternity screenings. For example, Levi Strauss & Co. now offers free genetic screening to assess hereditary risks for certain cancers and high cholesterol, and more than half of 1,100 eligible headquarters employees have taken the test since the fall of 2017, according to the New York Times. Color Genomics charges \$249 to screen for eight of the most common cancers, and as of May 2018 was working with Levi Strauss, Instacart, Nvidia, OpenTable, Oscar, Salesforce, SAP, Slack, Stripe, Snap, Tribune Media and Visa, according to the company's website.

Employers usually provide benefits coverage for standard forms of genetic testing — screening for Down syndrome in high-risk mothers, for example — but in general, benefits consultants don't recommend coverage of consumer genetic tests. Dr. Jeffrey Levin-Scherz, North American co-leader at Willis Towers Watson, cautioned against offering such testing broadly across all employees. "Screening populations at low risk leads to many false positives, and there is little imperative to test right now when tests are getting more accurate and less expensive over time. Employers should ask how testing will be integrated with health-care delivery and make sure doctors ordering the tests do not have financial relationships with genetic testing vendors."

In an October 2017 advisory, consulting firm [Mercer wrote](https://www.mercer.us/our-thinking/healthcare/genetics-and-genomics-testing-101.html)<sup>4</sup> that patients "may think that if they get certain types of genetic testing they will learn very clearly whether or not they have a risk. But more often, the result of the test is to be given a probability of risk. That's much harder for a person to take and make a decision on, and can cause unnecessary worry, testing and even treatment."

"We see a lot of activity with employers being approached directly by employees," said Mary Kay O'Neill a partner in Mercer's health practice.

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**We are very skeptical of direct-to-consumer testing and unconvinced it will tell us anything new. Our guideline is 'no' to the direct-to-consumer piece.**

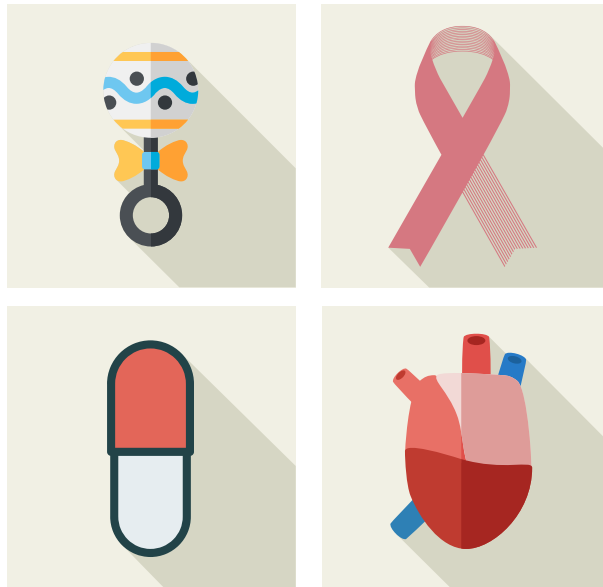
— Mary Kay O'Neill, Mercer

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4 <https://www.mercer.us/our-thinking/healthcare/genetics-and-genomics-testing-101.html>



# Genomic Medicine: Next-Generation Diagnostics and Treatment



A tremendous amount of research, data collection and analysis of genomics is underway, leading to a rapidly changing field.

“As an emerging medical discipline, we’re still learning a lot about genomics,” noted Dr. Bruce Gelb, a pediatric cardiologist who specializes in genetics and genomics at the Icahn School of Medicine at Mount Sinai.

Genomic medicine is currently making an impact in several important areas. Oncology, in particular, is incorporating genomics into new diagnostics and tailoring treatment strategies aimed at improving outcomes and minimizing potentially damaging side effects. Other areas include prenatal medicine, pharmacology, cardiology, rare and undiagnosed disease and infectious disease.

Let’s take a look at a few of these applications.



## Non-Invasive Pregnancy Screening for Chromosome Abnormalities

Non-invasive pregnancy screening (NIPS) analyzes the fetal genome for genetic disorders, a relatively new prenatal screening method. Introduced in 2011, NIPS enables women to learn more about their pregnancies through a simple blood draw as early as nine weeks into gestation. Vendors in this space include Illumina, Counsyl, Sequenom Laboratories, Progenity and Natera. These companies sell prenatal screening products for use on all women, regardless of age and risk status.

The current standard for prenatal testing for the most common chromosomal conditions is to screen in the first and second trimesters with both blood tests and ultrasound exams. If these tests indicate a problem, the mother may be directed to [amniocentesis](#).<sup>1</sup> Vendors in the NIPS niche argue that their tests are more accurate and comprehensive than the current standard of care and non-invasive compared to amniocentesis. They contend that it is better for mothers to avoid less accurate, older tests that can lead to unnecessary amniocentesis because of false positives. Natera, for example, claims that its screening test Panorama<sup>2</sup> has a higher detection rate of abnormal pregnancies than the older screening technology<sup>3</sup> (>99% compared to 83%), with a significantly lower rate of false positives.

Because of this published differentiator (Norton et al. NEJM 2015), most health plans have acknowledged the benefits and are providing coverage of NIPS for mothers regardless of age. Over half of commercial lives have insurers that cover NIPS for all women. Because employers are already paying for NIPS for their "high risk" employees, the incremental cost of covering NIPS over the standard of care can be between \$200-\$300 (CMS FY18 Fee Schedule). Use of non-invasive prenatal screening may decrease false positives and therefore avoid costly and what many believe to be risky and anxiety-driven invasive testing such as amniocentesis.

Employers should be aware that NIPS is a segment of the genomics market in which coverage disputes can often occur and that there are nuances in coverage policies. Considering the wealth of published literature on performance coupled with the high demand from patients and physicians alike, many professional societies, such as the American College of Medical Genetics & Genomics (ACMG), the American College of Obstetrics & Gynecology (ACOG) and more, have published supportive statements acknowledging the applicability for NIPS as a screening option for all women, regardless of age or risk factors.

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**Employers may find themselves drawn into such disputes and therefore may need to make decisions about what they will or won't cover, and under what conditions. Some health plans routinely cover only tests they deem medically necessary or for high-risk patients.**

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1 <https://www.acog.org/Patients/FAQs/Prenatal-Genetic-Screening-Tests>

2 For Panorama: Dar et al. Am J Ob & Gyn 2014; 211(5):527e1-527 e17

3 For traditional screening: Norton et al. N Engl J Med 2015; 372:1589-1597.

## Oncology: Transforming Diagnosis and Treatment

Innovations in genetics and genomics are making significant inroads into cancer diagnostics, therapeutics and prognostics. Genetic testing can predict the risk of developing various cancers, especially breast cancer, while genomics provides information unique to a person's cancer that can help determine how a patient will respond to a particular treatment or drug. Precision medicine, which includes genomics as well as considerations such as environment and lifestyle, can indicate which treatments may be most effective for a particular patient. It can also indicate whether a patient should forgo a treatment that likely would be ineffective or result in intolerable side effects. Such advances can improve outcomes and potentially lower costs.

One of the most expensive applications of genomic medicine is gene therapy, a technique that modifies a person's genes to treat or cure disease. Gene therapy can replace a disease-causing gene with a healthy copy of the gene, inactivate a disease-causing gene or introduce a new or modified gene into the body — sometimes by way of a virus — to help treat a [disease](#).<sup>4</sup> In 2017, the FDA approved the first gene therapy cancer treatment for certain pediatric and young adult patients with a form of [leukemia](#).<sup>5</sup> The treatment costs \$475,000. Other gene therapies, including those for rare diseases that are not cancer-related, can be even more expensive.



“Some 1,500 gene therapies are in development that together could be priced at \$3 trillion,” noted Dr. Michael Eleff, an Anthem medical director. “Who pays for these?”

To better understand the growing role genomics plays in oncology, let's take a look at a few products on the market as of mid-2018. Clinical Genomics is a company involved in predictive genomics for early detection of residual disease, after surgery, of colorectal cancer — the third-most diagnosed cancer — or for surveillance of recurrent colorectal cancer after primary treatment. Its product, Colvera, is a \$449 blood test for two markers that are present in 95% of tumor tissues. Clinical Genomics [asserts](#)<sup>6</sup> that its test catches colorectal cancer sooner than alternative methods of surveillance, when it is far more treatable, and when treatment (which can run from \$70,000 to \$140,000) is less expensive. According to the company, initial clinical experience has indicated that Colvera can detect the recurrence of colorectal cancer up to 10 months earlier than CT scans and older blood tests.

Genomic Health, a cancer genomic diagnostics vendor, concentrates on both overtreatment and potential under-treatment of early-stage estrogen receptor (ER) positive breast cancer, the most common type. Its test costs \$3,500 to \$4,000, and the company is urging broader

4 <https://www.fda.gov/BiologicsBloodVaccines/CellularGeneTherapyProducts/ucm573960.htm>

5 <https://www.nytimes.com/2017/08/30/health/gene-therapy-cancer.html>

6 Young GP et al. A cross sectional study comparing a blood test for methylated BCAT1 and IKZF1 tumor-derived DNA with CEA for detection of recurrent colorectal cancer. *Cancer Medicine* 2016;5(10):2763-2772.

coverage by commercial health plans and employers. The [company says](#)<sup>7</sup> that Medicare will pay for its tests for women with ER-positive breast cancer with negative lymph nodes or with up to three positive lymph nodes involved. There is also broad commercial coverage for women with node-negative disease, but less consistent coverage for those with node-positive disease.

The results of a landmark breast cancer trial, TAILORx, announced and published in June 2018, indicated that more than 70% of ER-positive node-negative patients who took Genomic Health's Oncotype DX test that do not benefit from chemotherapy, while smaller, specific groups of patients warrant chemotherapy that may be [life-saving](#).<sup>8</sup> The trial used the company's Oncotype DX Breast Cancer Recurrence Score test, which assesses the expression of 21 genes associated with breast cancer recurrence, to determine which women with ER-positive breast cancer would not benefit from combining chemotherapy with hormone therapy after surgery vs. hormone therapy alone.

"These data confirm that using a 21-gene expression test to assess the risk of cancer recurrence can spare women unnecessary treatment if the test indicates that chemotherapy is not likely to provide benefit," according to a statement by Dr. Joseph A. Sparano, associate director for clinical research at the Albert Einstein Cancer Center and Montefiore Health System, and lead author of a paper about the study in [The New England Journal of Medicine](#).<sup>9</sup>

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7 <http://newsroom.genomichealth.com/releasedetail.cfm?ReleaseID=1073928>

8 <https://www.cancer.gov/news-events/press-releases/2018/tailorx-breast-cancer-chemotherapy>

9 <https://www.nejm.org/doi/full/10.1056/NEJMoa1804710>

## Pharmacogenomics: Predictive Use in Mental Health Treatment

Mental health issues are often treated with medications, but individuals may have very different reactions to the same drug. Physicians and psychiatrists can try several drug and dose combinations before hitting an optimal treatment plan, and this trial-and-error testing period can last six to eight weeks or more, with employees struggling through unpleasant side effects and cycling through drugs that are not helping them.

Pharmacogenomics is the study of how a person's DNA affects their response to medications. Applying pharmacogenomics to mental health, physicians aim to have an objective tool to better identify genetically appropriate medications for each patient, increasing the likelihood of response and reducing the risk of adverse events.

There are a number of vendors in this space. One of them, GeneSight, says its GeneSight Psychotropic is a proprietary pharmacogenomic test that is clinically proven to improve patient outcomes while

limiting unnecessary costs. According to the company, patients whose clinician used the GeneSight Psychotropic test to assist in prescribing, experienced a 50% improvement in remission rate<sup>10</sup> and a 30% increase in response rate compared to treatment as usual<sup>11</sup>, and a reduction in healthcare costs by more than \$2,500 per patient per year.<sup>11 12</sup>

While not all health plans cover pharmacogenomics for the treatment of mental health, the GeneSight test has been covered by Medicare since 2014, as well as some commercial plans.

Some experts are skeptical about the current state of pharmacogenomics applied to mental health. However, many are hopeful about the future, since the costs associated with patients who fail to respond to prescribed medications — including healthcare costs, productivity loss and absenteeism—are high. That's not to mention the toll on patients themselves.



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**Applying pharmacogenomics to mental health, physicians aim to have an objective tool to better identify genetically appropriate medications for each patient.**

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<sup>10</sup> Greden JF, et al. Publication pending. (Current RCT)

<sup>11</sup> Winner JG, et al. Psychiatric pharmacogenomics predicts health resource utilization of outpatients with anxiety and depression. *Transl Psychiatry* 2013 Mar 19; 3:e242.

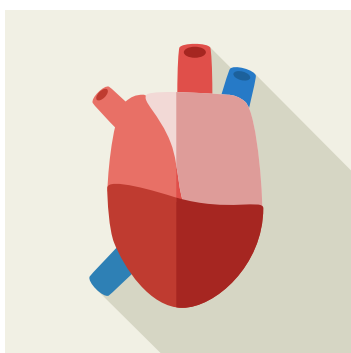
<sup>12</sup> Winner JG, et al. Combinatorial pharmacogenomic guidance for psychiatric medications reduces pharmacy costs in a prospective case-control project. *Curr Med Res Opin* 2015 Sep; 31(9):1633-43.

## Promising Applications in Cardiology

There are promising applications of genomics in cardiology, where genetic variation can trigger deadly heart conditions that run in families. It is an area that Mount Sinai's Dr. Gelb knows well via his treatment of children. He noted that for some conditions, sequencing parents' genes will shed light on their child's illness. He cited as an example a young teen whose still-undiagnosed illness was causing kidney failure. "One month later, we solved the case when testing indicated an existing drug would help," Dr. Gelb recalled. "This is a niche area. The genetics can provide value about what's going on."

One company in the cardiovascular genomics niche is CardioDx. The molecular diagnostics company's testing predicts the likelihood of obstructive coronary artery disease and

has diagnostic, therapeutic and prognostic applications in cardiac care. About 80% of its tests, which cost roughly \$1,000, are given in a primary care setting. "We give doctors the tools to segregate patients and know more about them. When a patient comes in with chest pain but is low risk, they can be treated differently, and not sent to the hospital," explained David Levison, chief strategy officer of CardioDX.



Cardiac care is expensive for self-insured employers, and genomics may be a cost-effective tool for avoiding unnecessary treatment. It costs \$10,000 to \$30,000 when a patient is sent to a cardiac cath lab for treatment, but fewer than 40% of patients really need that intervention, according to Mr. Levison. "The value of genomic medicine is to stop doing things that don't work," he said.

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# Challenges Posed by Genomic Medicine

When it comes to genetics and genomics, questions exist about the trade-offs between cost and potential benefit, as is often the case with other areas of healthcare.

Some applications are more clear-cut than others, but here are some of the questions and challenges that exist:

- Do tests provide enough meaningful data to make them clinically actionable? Are they specific and sensitive enough? Some vendors lack scientific data to prove their genomic tests have clinical value.
- Some testing for rare diseases and screening whole populations is likely ineffective — and expensive.
- Correct interpretation of genetic diagnostic tests is critical but research suggests that many doctors incorrectly interpret the positive predictive value of these tests. False positives can significantly harm a person by triggering unnecessary medical treatments and emotional turmoil.
- If tests generate positive results that don't impact clinical outcomes, the benefit of doing them may be questionable; again, they can generate anxiety and increase cost.
- Predictive genomics can help evaluate the risk of a disease developing in an individual. But whether such testing is worthwhile depends on several factors, such as whether the disease has a high genetic correlation and to what extent environmental factors play a role. Environmental and lifestyle factors in conditions like cancer and many chronic diseases can be more significant than a slightly increased predisposition to those conditions.
- Interpreting the results of gene sequencing is art as well as science. Interpretations can vary, which in turn can generate different treatment paths.
- Genomic medicine is often used in some of the most challenging healthcare situations such as cancer, rare but fatal or debilitating diseases and obstetrics. Coverage decisions by employers and health plans can impose or remove a significant financial burden on families and therefore introduce ethical considerations into the mix, making these decisions even more difficult.




## Benefits Coverage

Earlier in this guide, we highlighted some of the potential issues posed by genetic testing among broad populations and the pitfalls of direct-to-consumer tests. Employers may also face questions about benefits coverage for genomic tests and treatments; for example, a cancer patient may request approval of DNA sequencing of a tumor as a step toward individualized cancer treatment. Employers may want to seek information from their health plan about their plan's framework and how it affects coverage. "It would help to understand what insurers are doing," said one benefits manager. "Are we just paying for everything? Are we trying to direct people to the best level of care?"

Experts say that employers should be insulated, for the most part, from making decisions about what to cover in genomic medicine, relying instead on guidance from their health plans and benefits consultants.

"Health plans have a very clinical process, searching the medical literature for evidence-based protocols for genomics," said Mercer's Ms. O'Neill. "Health plans review the clinical literature on these tests or procedures fairly frequently. And while employers may read about one plan announcing it will pay for a genetic test while another plan may not yet do so, in most cases, the variation is temporary and attributable to differences in when plans review their policies."





In general, health plans glean information from the National Institutes of Health’s [registry of genetic tests and clinical pathways](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3531155/)<sup>1</sup>, which are public, and rely on guidelines issued by various clinical bodies that specialize in, for example, oncology or cardiology. In oncology, influential groups include the National Comprehensive Cancer Network and the American Society of Clinical Oncology. However, the data review process is not standard, and these entities might suggest different clinical guidelines.

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Are we just paying for everything? Are we trying to direct  
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– Benefits Manager

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So one health plan may make a coverage decision based on guidance from one clinical body, while another plan makes a different decision guided by a second clinical body. For that reason, vendors say employers should be aware that guidelines can differ according to the entity that issues them. Plans rely on these clinical bodies to inform coverage decisions, but even these entities may “struggle to keep up with a genomics space that is changing very quickly,” according to a medical director of Genomic Health. As a result, some genomics companies are making their case directly to employers.

<sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3531155/>



# The Future of Genomic Medicine

Investors have a strong appetite for backing commercial opportunities in genomics, and the future will continue to present challenging scenarios to employers. According to CB Insights, a market watcher, “many new, potentially massive opportunities” will emerge in genomics, including “more precise medical treatments based on your genetic code and potential drug reactions” and “genetic counseling to help the average consumer understand their data for different life [decisions](#)<sup>1</sup>.”

In the future, gathering genomic data for individuals may become as routine as blood type, driving more preventative screenings, treatment protocols and drug therapy.

**“ The hope is that genomics will lead to more individualized treatments that target the right patients with the right kind of care and improve outcomes and lower costs. ”**

<sup>1</sup> <https://www.cbinsights.com/research/genomics-startups-future-medicine/>

# Genomic Medicine and Questions Employers Should Ask

Employers do not have the clinical expertise to make coverage decisions about genomic medicine. But both employees and genomics vendors may advocate directly to benefits leaders for coverage of tests or treatments. Self-insured employers, of course, can decide which genomic tests or procedures they will cover.

Genomic medicine is an exciting area and many promising discoveries await us. For now, it may make sense for employers to turn a skeptical eye on the hype that surrounds genomic medicine and rely on benefits consultants and health plans for guidance when making benefits decisions.

“This should all be about the quality of care — better care — and value to the patient, and many new therapies can bring enormous value to patients” said Willis Towers Watson’s Dr. Levin-Scherz.

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**Paying for these advances is a social challenge.  
We need to treat the patient and then figure out how to  
share the risk.**

– Dr. Levin-Scherz

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**To understand how your health plan approaches coverage of genomic medicine, ask the following questions:**

- What is currently covered and not covered when it comes to various genomics-based testing and treatments?
- How do these policies align or differ with the policies of other health plans?
- What is the cost of various tests or treatments that are covered and not covered, and what is the cost for the patient?
- Will a test or treatment improve the health of the patient or the patient's child? What is the impact on quality of life?
- Are there immediate or longer-term projected savings?
- Does your plan require a swift prior authorization process for genetic prenatal testing during the first or second OB visit?
- Which clinical or review body does your plan follow in deciding whether to cover a genomic test or treatment?
- What metrics does your plan use to evaluate a test/treatment?

**To more clearly define your overall benefits strategy, consider these questions about your own company:**

- Is your company a trendsetter when it comes to benefits or do you tend to follow standards in your industry and among your peers?
- To what extent do you want to reward specific behaviors that could lower costs such as genetic screenings for cholesterol?
- Are you likely to opt for a generous coverage policy for prenatal genetic testing to avoid complaints among prospective parents?
- When it comes to cancer, for example, how big a factor is cost in deciding what to cover?
- If your health plan does not cover a specific test ordered by an employee's doctor, how do you want to handle that physician's request?

## About NEBGH

Northeast Business Group on Health (NEBGH) is an employer-led coalition of healthcare leaders and other stakeholders. We empower our members to drive excellence in health and achieve the highest value in healthcare delivery and the consumer experience.

Our Solutions Center delivers information, education and guidance for employers on managing high-cost health conditions and improving employee population health and wellbeing.

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NEBGH also acknowledges and thanks Barbara Benson and Greg Crawford for their editorial and copyediting assistance, and Joel Sadagursky for graphic design and layout. NEBGH is solely responsible for the research, analysis, and content of this document.



### Roundtable Speakers

Company	Name	Title
Anthem BlueCross BlueShield	Michael Eleff, MD	Account Management Medical Director, RVP
Flatiron Health	Neal Meropol, MD	Vice President of Research Oncology
Mount Sinai Health System	Bruce D. Gelb, MD	The Gogel Family Professor of Child Health and Development, Professor of Pediatrics and Genetics & Genomic Sciences, Icahn School of Medicine – Mount Sinai
Willis Towers Watson	Jeff Levin-Sherz MD, MBA	Co-Leader, Health Management Practice
Assurex Health	Yuvon Mobley, PhD	Medical Affairs Manager
Clinical Genomics	Tadd Lazarus, MD	Chief Medical Officer
Natera	Paul Billings, MD, PhD	Senior Medical Advisor

## Roundtable Participants

Company	Name	Title
Labor Health Alliance	Ruth Antoniades	Executive Director
Con Edison	Nancy Beeck	Section Manager, Benefits
Freelancer	Barbara Benson	Communications Consultant
Genentech Inc.	Eric Berman	Regional General Manager
Willis Towers Watson	Elaine-Marie Cannella	Senior Consultant
New York City Office of Labor Relations	Desmond D'Sa	Senior Health Care Catalyst & Advisor on Health Care Cost Savings
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NEBGH	Jeanette Fuente	Director, NJ Programming
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Merck & Company, Inc.	Erika Hedden	Director, US Health Systems Oncology
New York Hotel Trades Council	Vincent Jarvis, MD	Chief Medical Officer
Mercer Health & Benefits	Andrei Javier, MD	Clinical Services - Total Health Management
Latham & Watkins	Grace Kampfner	Global Benefits Finance Manager
Natera	Shephalie Lahri	Senior Manager, Market Access Strategy
Goldman Sachs Group, Inc.	Noah Morgan	Senior Wellness Director
NEBGH	Jeremy Nobel, MD, MPH	Former Medical Director
Con Edison	Liz O'Halloran	Dept. Manager, O & R Benefits
New Jersey Manufacturers Insurance Group	Katharine Osborn	Director, Benefits & HR
Latham & Watkins	Walter Pasciullo	Global Benefits Manager
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Assurex Health	Michele Reeling	Director, Employer Markets Payer Market
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CBS Corporation	Scott Richterich	Director, Health and Welfare Benefits
Skadden, Arps, Slate, Meagher & Flom LLP	Yael Rosenberg	U.S. Benefits and Financial Project Manager
NEBGH	Kathy Sakraida	Director, Quality Initiatives
Aetna	Heather Shappell, M.S., CGC	Precision Medicine Program Manager - Health & Clinical Services
NEBGH	Candice Sherman	CEO
Aon Hewitt	Sheena Singh	Vice President
Clinical Genomics	Fran Strauss	Head Market Access & Reimbursement
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