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Top Target Treatments

TOP TARGET TREATMENTS, *F. LEGA*
PRECISION HEALTH AND POPULATION HEALTH: CAN THEY INTERSECT EFFECTIVELY? *T. RASSAF ET AL.*
PERSONALISED MEDICINE: THE ROAD AHEAD, *D. PRITCHARD*
A HUMAN-CENTRIC APPROACH FOR DATA COLLECTION, *I. RÄSÄNEN & J. SINIPURO*
ENHANCING PRECISION MEDICINE: SHARING AND REUSING DATA, *C. PARRA-CALDERÓN*
PERSONALISED MEDICINE AND CARDIOVASCULAR DISEASE, *D. MUNDRA*
LEVERAGING ADVANCED METHODS TO EVALUATE AI-PHARMA COMPANIES, *M. COLANGELO & D. KAMINSKIY*

EUROSON 2019 WELCOMES WORLD OF ULTRASOUND, *P. SIDHU*

BREXIT MEANS BREXIT: RADIOLOGISTS WITHOUT BORDERS, *V. PAPALOIS*

FIGHTING CYBER THREATS WITH A GLOBAL COMMUNITY, *D. ANDERSON*

WHEN DOES STRIKING OUT ALONE WORK BEST? *D. MICHAELIDES*

VALUE-ORIENTED MANAGEMENT, *W. VON EIFF*

SEX AND GENDER IN MEDICINE, *N. KUMAR & T. ROHR-KIRCHGRABER*

SECRETS OF INNOVATION SUCCESS, *N. HENKE & R. BARTLETT*

NEW HOSPITAL POLICIES AND PROCEDURES REQUIRED FOR PATIENT SAFETY, *M. RAMSAY*

PEOPLE POWERED HEALTH MOVEMENT FOR PATIENTS, *L. THOMPSON*

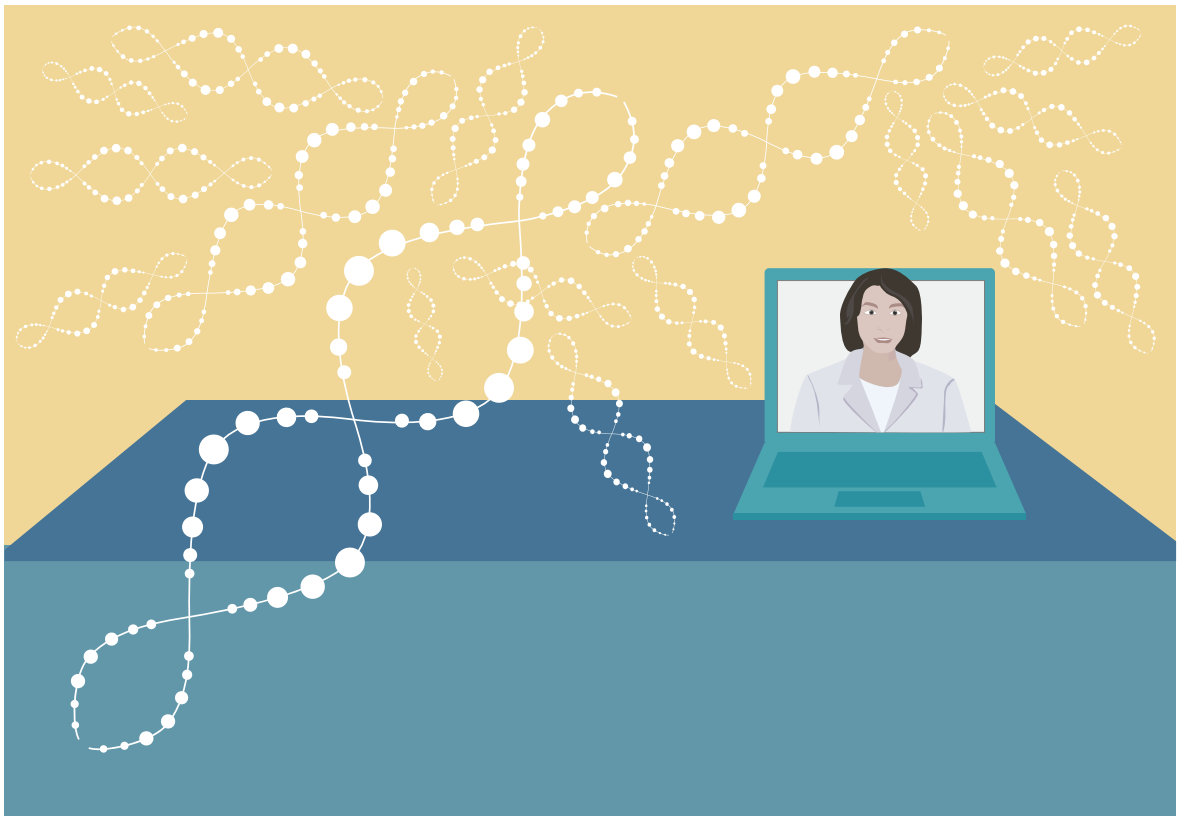
HEALTHCARE AND INDUSTRY PARTNER FOR TECH INNOVATION, *A. FREJD*

NURSING ON THE MOVE: CROSS-BORDER HIRING, *I. MEYENBURG-ALTWARG*

Telehealth bringing Personalised Medicine closer

What role is telehealth playing in improving the genomics playing field?

How one company is breaking down barriers to implementation of genomics to make Personalised Medicine a growing daily reality in healthcare provision.



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What is Genome Medical's mid to long-term objective in the field of genomics and Personalised Medicine (PM)?

Imagine a day in which your genome is a critical part of your medical record, referred back to often by your provider when making care decisions. This is our long-term objective. Genome Medical cuts through the administrative challenges associated with making genomics part of the standard of care, through a combination of telehealth technology and services.

We help healthcare providers and their patients navigate the rapidly expanding field of genetics and utilise test results to understand the risk for disease, accelerate disease diagnosis, make informed

treatment decisions and lower the cost of care. We are shepherding in a new era of genomic medicine by creating easy access, via our telehealth platform, to top clinical genomics specialists for patients and clinicians all around the country.

What are the challenges in your field and how are you overcoming them?

Genomics is one of the most exciting advancements in health care today. It has tremendous promise for the improved health and wellbeing for all through more precise diagnosis, greater risk awareness and more personalised treatment plans. At the same time, there is a nationwide shortage of genetic experts that makes it impossible for the majority of patients and providers to take advantage of appropriate genetic tests and data. In fact, there are only about 1,500 geneticists and about 2,500 genetic counsellors in clinical practice today in the U.S.

> “THERE IS A NATIONWIDE SHORTAGE OF GENETIC EXPERTS MAKING IT IMPOSSIBLE FOR PATIENTS AND PROVIDERS TO TAKE ADVANTAGE OF GENETIC TESTS AND DATA”

Additionally, there are over 600 labs that provide more than 70,000 genomic tests. This, combined with a rapidly evolving standard of care, makes it really challenging for physicians to keep up. A staggering 90% of primary care physicians say they don’t know who to test or what to test for. This results in both underutilisation and waste as non-genetics professionals often order the wrong test.

Genome Medical exists to solve these problems. We are the first and only nationwide medical practice focused on genomics. We deliver our services via telehealth and work with health systems, providers, employers and health plans to meet the ever-growing needs for our services.

What is the “Understand Your Genome?” programme?

The Understand Your Genome (UYG) programme was started by Illumina in 2012 and is being continued by Genome Medical with the goal of advancing awareness and access to personal genomic medicine. More than 2,000 pioneers have received whole genome sequencing through the programme and more than 40 symposia have been held across seven countries.

The UYG programme enables individuals to not only learn about the latest advancements in the field of genomic medicine but also gain access to a diverse set of genomic services, including whole genome sequencing, for improved health through more personalised treatment plans. We are seeing a strong response to the UYG programme, including from prior participants who wish to receive clinical expertise from Genome Medical. More information is available at understandyourgenome.com.

Do you think there is a danger of genomics/ PM becoming exclusive or do you see evidence of it being used in public health settings?

I strongly believe in a future where genomic medicine will be a part of routine medical care for all. Genomic medicine is being applied in clinical care today for cancer, cardiovascular disease, paediatric genetics and reproductive health. This is helping us to better understand disease risk and can be used for faster diagnosis and a more informed selection of therapeutics.

You can imagine there was a day where we were not able to draw and analyse blood to inform patient care even though, today, it is fundamental to the practice of medicine. Similarly, I believe we will look back on medical practice today and ask ourselves, how did we diagnose disease and select therapies without the benefit of looking at the molecular make-up of the individual? This is important information to inform clinical care.

The challenge today is that there is a large divide between the community setting and leading academic centres in terms of access to genomic medicine. Genome Medical seeks to bridge this divide. We are the front door to genomics for patients everywhere and we support providers to appropriately utilise genomic medicine for the benefit of their patients.

Today, we service patients in all 50 states and offer next day appointments. We will soon be expanding access to our clinical experts for health systems and providers outside of the United States.

How do you see the scalability of genomics/PM?

Clinical utility for genomics is vastly outpacing clinical expertise. Many providers are ill equipped to meet the demand, in turn preventing the integration of genomics into the practice of medicine.

Most leading academic medical centres have a genetics department with one to two geneticists and three to four genetic counselors on staff. Community hospitals typically have zero geneticists on staff and few (only 17%) have a genetic counselor.

So, there remains a huge gap between the appropriate utilisation of genetics in the clinical setting, and the number of experts who can select, interpret and guide providers and their patients on how to use these tests and their results effectively.

This prompts a massive issue of scale, and one that Genome Medical is uniquely suited to solve with our virtual telehealth and genomic care delivery platform. We provide services for hospitals, health systems, employers and consumers in all 50 states. We can deliver on-demand access to genetic experts for virtual visits and provider-to-provider consults, in addition to educational and training services such as patient risk assessment tools and consumer e-learning resources.

> “WE BRING GENETIC EXPERTISE TO HEALTHCARE EASILY AND SEAMLESSLY SO THAT GENOMIC MEDICINE BECOMES A FASTER REALITY”

When do you see genomics being a part of daily medical care?

The demonstrated clinical utility for genomics is rapidly expanding. I expect that within three to five years, every cancer patient will receive genetic services and genetic testing at diagnosis. We can see progress towards this goal. For example, the American Society of Breast Surgeons is now recommending that all breast cancer patients receive genetic testing. This updates guidelines that otherwise cut that recommended population in half.

This is great news for patients – genetic services and appropriate genetic testing can help with selecting better, more targeted treatments and ensuring patients comply with routine screenings. On the downside, it also presents a major issue of scale. Right now, it’s estimated that roughly one in 100,000 people has access to a genetic counsellor. Genetic specialists are critical in guiding patients and doctors (PCPs, oncologists and other specialists) on which patients would benefit, what test to order, and what to do with the results.

How can genomics impact favourably on the bottom line aim in healthcare, ie, better outcomes at lower costs?

As a whole, a personalised approach to medicine will almost always lead to better outcomes at a lower cost. Here are several examples of that:

- Broad carrier screening prior to conception can improve likelihood of having a healthy child. Approximately one out of every 50 children born has a complication resulting from genetics. It can cost $1 million annually to treat a child with a genetic disorder.
- Using a patient’s genetic information to select the appropriate therapy faster improves efficacy and reduces adverse drug response.
- Identifying an individual at high risk for cancer provides the opportunity to alter clinical care for more active surveillance and early detection. For example, it is more cost effective to provide a colonoscopy to a high-risk colorectal cancer patient, detect and remove a polyp, rather than later treating advanced stage colon cancer.
- Utilising somatic cancer testing can help inform appropriate care for cancer patients. For example, the majority of breast cancer patients may not respond to chemotherapy. With accurate genomic information readily available, providers and their patients can assess whether chemotherapy, which has well-known side effects, is likely to have efficacy, and make more informed treatment decisions.

At the end of the day, a future in which genomics is a seamless part of everyday care delivery will not be realised until we solve the gap between the current clinical application of genomics and access to genetic expertise. Genome Medical is actively working to eliminate the traditional barriers associated with having genetic experts immediately available for making informed decisions about genetics and genomics. That’s how we’re different—we bring genetic expertise to healthcare in a way that’s easy and seamless, so that genomic medicine becomes a faster reality than the field can currently deliver. ■