OPTIMISED
HEALTHCARE

Powering the future of personalised healthcare

POWERING THE FUTURE OF PERSONALISED HEALTHCARE

The global battle against communicable diseases like AIDS, tuberculosis and malaria continues to yield successes[1], but non-communicable diseases (NCDs) present a worrying problem – particularly cancer, heart disease and diabetes. NCDs were responsible for 71% of the worldwide deaths in 2016, and 80% in the most developed regions.
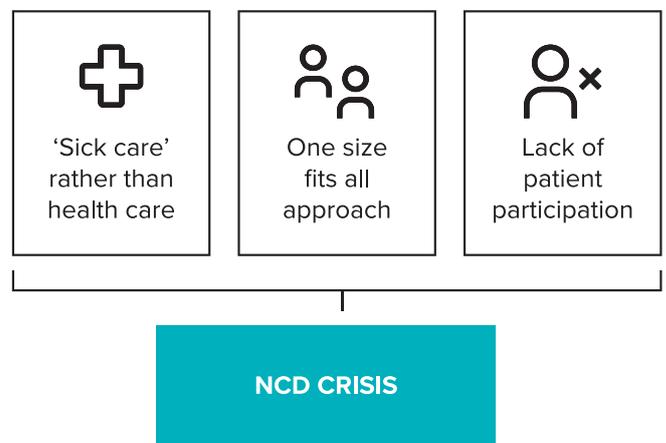
"

80% OF DEATHS IN THE DEVELOPED WORLD ARE CAUSED BY NCDS

"

Sedentary lifestyles, changing diets, rising obesity levels and urbanisation are causing the rise in these chronic diseases[2]. These causes reveal an extremely startling reality – that 7 to 8 out of every 10 people on the planet are dying from diseases, many of which are largely preventable through basic lifestyle modification. This is nothing short of a global crisis.

NCDs – THE CHALLENGES

The current NCD crisis is fuelled in large part, by a triad of problems:

'Sick care' rather than health care	One size fits all approach	Lack of patient participation

NCD CRISIS

01. 'SICK CARE' RATHER THAN HEALTHCARE

Healthcare providers are fighting an uphill battle against preventable NCDs like heart disease, diabetes and cancer. On the front line, they remain entrenched in treating people who have already developed disease, while unable to effectively promote health and prevent disease onset. Increasing workloads and limited resources force them into a reactive approach to treating patients, stifling their ability to provide proactive care. In essence, they are stuck providing mainly 'sick care' rather than true health care[3].

02. ONE-SIZE-FITS-ALL

There is also an over-reliance on a one-size-fits-all approach. Similar advice and treatments are given to populations of patients with little ability to offer any personalisation of care based on individual health characteristics. Different advice and treatments work for different people, thus personalisation of healthcare (the right patient getting the right treatment) improves health outcomes, reduces side effects, and lowers costs[4].

03. LACK OF PATIENT PARTICIPATION

Currently, individuals are largely recipients of healthcare, taking a passive role. They visit their doctor if they develop symptoms, and they receive a treatment or advice. Their medical data is collected and owned by the doctor, and only information divulged from the doctor can be acted on. Patients are disconnected from their own health, unable to effectively participate in their healthcare.

While healthcare remains anchored in these increasingly archaic paradigms, the NCD crisis will remain rampant, for it is in these limitations of healthcare that it lives and thrives.

To effectively combat NCDs, there needs to be a wholesale shift in culture towards an approach which:

- Focuses on disease prediction and prevention
- Aims for effective ultra-early intervention
- Tailors care to the individual
- Promotes and supports overall well-being
- Increases patient participation in their health

REVOLUTION THROUGH INTEGRATION

The answer to achieving this cultural shift, lies not in the building of new services, but rather in the empowerment and integration of existing ones. Wellness providers, such as gyms, personal trainers, and nutritionists effectively target the very lifestyle factors that healthcare providers are unable to reach. They are already promoting health and curbing the onset of preventable diseases. They have the trust and the necessary time and resources to engage effectively with their clients to accomplish positive change. They are a vitally important,

and thus far untapped resource for healthcare providers.

However, healthcare and wellness providers currently work completely independently, existing in silos, with little to no interaction. Wellness providers can't effectively tackle NCDs because of a lack of medical expertise and guidance – they have no access to their client's medical data and specific medical targets. Healthcare providers are overwhelmed with treating sickness and lack access to the lifestyle and wellness data that's so freely gathered in the wellness setting.

If real progress is to be made in the fight against the biggest killers, a bridge must be built between the worlds of healthcare and wellness.

Healthcare   Wellness

By linking these two worlds, the lifestyle modification and health promotion expertise that exists in the wellness industry can be used to solve the problem *of 'sick care' rather than health care.*

With the two worlds working together and sharing data for the common good of the individuals they work with, each is able to offer a more effective personalised approach. With access to much more health and lifestyle data at their fingertips, healthcare providers will be able to offer more effective and more tailored treatments and advice. Wellness providers will know which particular medical and health goals to target based on an overview of their medical data. The linking of healthcare and wellness allows individualised health plans to be developed that are personally meaningful, as well as highly targeted and effective, addressing the *one-size-fits-all* problem.

BRIDGING THE GAP

Modern digital technology is enabling rapid change in the fields of health data collection and integration. Genetic sequencing, cost effective diagnostics, cloud services and IoT (internet of things) wearable devices are transforming the health sector.

In fact, it's this technology that holds the key to bridging the gap between the healthcare and wellness silos. All of the

components already exist, they just need to be organised into a cohesive and functional structure – a digital bridge.

To effectively integrate healthcare and wellness services, such a bridge would need to have the following functionality:

🔒 Secure data collection and storage

🔒 Appropriate accessibility from healthcare and wellness providers

👤 Individuals in control of their own data

📋 Comprehensive analysis of data

👤 Generation of accurate health predictions and disease prevention strategies

🔀 Ability to track data over time

To be viable in today's world, the solution would need to overcome a myriad of challenges. It would need to be simple enough to use that individuals, as well as health and wellness providers could easily engage. Despite the complexity of the data analysis required, outputs such as reports and recommendations

would need to be provided promptly. To ensure wide adoption, affordability and cost-effectiveness would be essential.

Finally, patient data would need to be kept highly secure, while remaining appropriately accessible. Data protection issues and regulations abound, and it is the solution to this challenge that opens the door to solving the patient participation problem. Individuals should be placed right at the centre of their own health, with ownership of their data, and full control over who accesses it. Armed with integrated health information, passive patients evolve into well-informed and empowered consumers, active caretakers of their own health.

Thus far, despite the expanding health technology landscape, these challenges have proven insurmountable. Consumers are demonstrating a firm desire for personalised health discovery, monitoring and improvement using technology, but a unified and workable solution that tackles the causes of the NCD crisis has remained elusive.
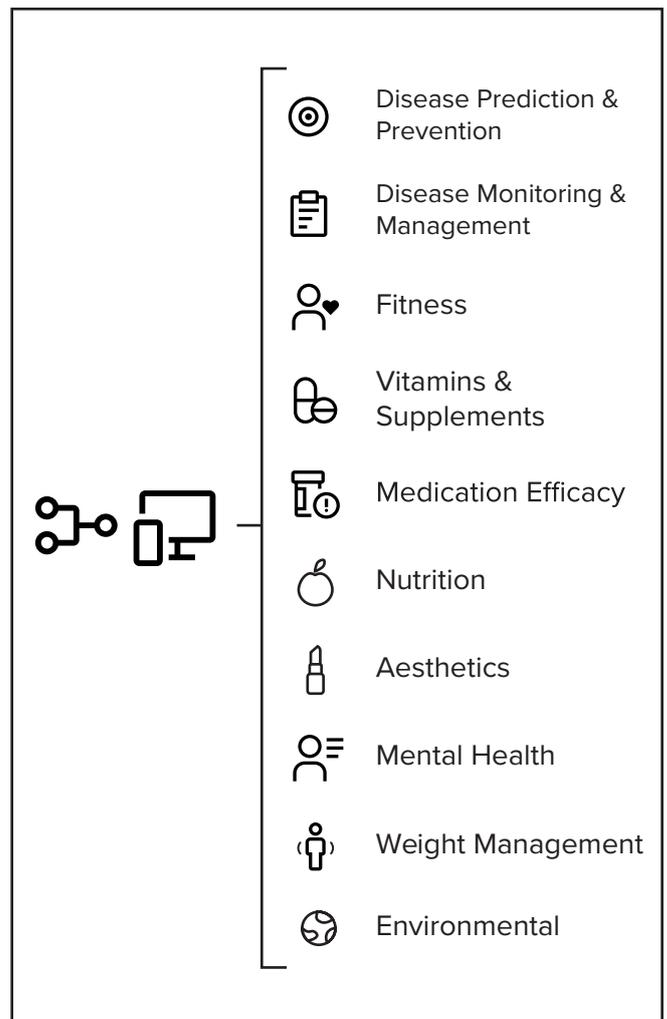
A SOLUTION FROM OPTIMISED HEALTHCARE

Uniting the disparate components of the digital bridge for the first time, Optimised Healthcare have developed a comprehensive cloud-based healthcare platform called *Optimise*. Using the latest technology and science to connect healthcare and wellness, the objective is to reduce human suffering and avoidable death from NCDs.

Optimise has the ability to collect, analyse and store broad sets of data including:

- Genetics
- Pharmacogenomics
- Gut Microbiome
- Bloods
- Urine
- Stool
- Saliva
- BP-SPo2-pulse
- Anthropometry
- Medical History
- Family History
- Nutrition
- Lifestyle
- Sleep
- Fitness
- Psychological
- Aesthetic
- GP Examination

Data is collected through a combination of home sample collection kits and in-depth, validated questionnaires. Comprehensive analysis allows the delivery of detailed and personalised reports, as well as highly actionable and evidence-based recommendations.

- Disease Prediction & Prevention
- Disease Monitoring & Management
- Fitness
- Vitamins & Supplements
- Medication Efficacy
- Nutrition
- Aesthetics
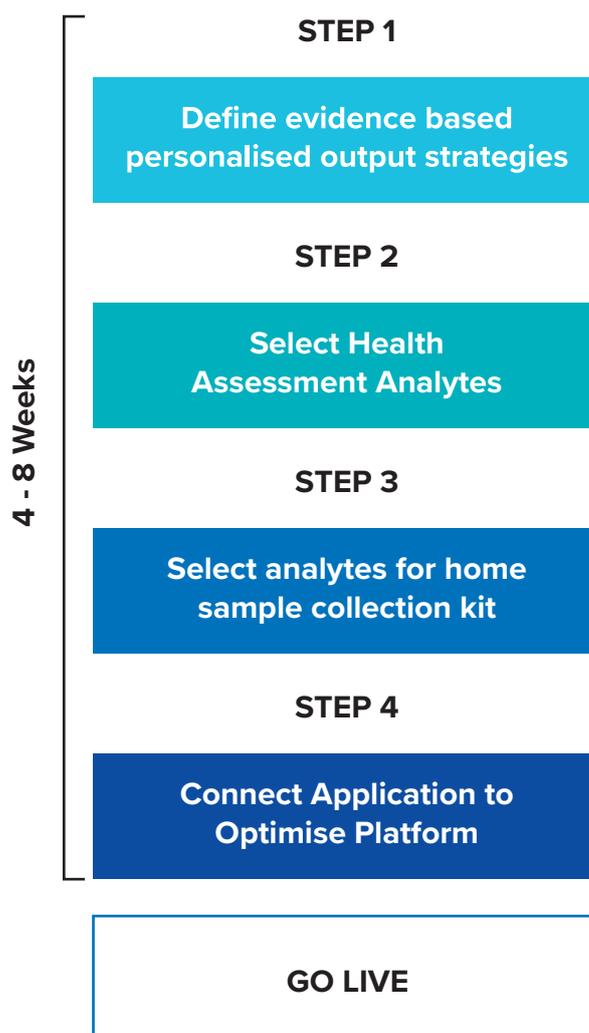- Mental Health
- Weight Management
- Environmental

Data is dynamically tracked over time showing progress and developing trends.

While capable of analysing an unprecedented variety of data sets, what makes *Optimise* both viable and essential in today's world is its customisability. Health and wellness providers, such as gyms, nutritionists, private clinicians, health coaches and personal trainers will be able to partner with Optimised Healthcare and develop bespoke solutions based on their clientele's specific needs.

Clearly different providers have different areas of expertise, and thus they will be able to choose from the vast menu of options, which specific health tenets are relevant for them.

Any health or wellness provider can benefit from *Optimise* by simply connecting to the platform, using whichever 'front end' they like. Some providers will have existing front ends such as smart phone or web-based apps, and these can seamlessly connect via our application program interface (API). For providers who want to create their own apps to use with their clients, they can be assured that whatever front-end solution they create, connection to the platform via the API will be effortless. Finally, for providers who don't yet have apps they use with their clients, they'll

have the choice of selecting and white-labelling one of Optimised Healthcare's pre-built templates, or commissioning OH to develop an intuitive and tailored front end solution.

4 - 8 Weeks

STEP 1

Define evidence based personalised output strategies

STEP 2

Select Health Assessment Analytes

STEP 3

Select analytes for home sample collection kit

STEP 4

Connect Application to Optimise Platform

GO LIVE

Providers of healthcare and wellness will find effortless empowerment through the integration and availability of health data, giving them significant competitive advantages in the market place, and enhanced effectiveness with

their clients. Without having to build complex systems themselves or change the way they work, they'll be able to offer their clients and patients pro-active, predictive, and highly personalised care. A simple connection is all that's needed to access the powerful analytics and outputs of *Optimise*, in a fraction of the time it would take to build their own system, and at a fraction of the cost.

For the first time, individuals will have ownership of their own comprehensive health data and the ability to interact with it. They will be in the driving seats, able to fully participate in their health and wellness.

Furthermore, as health and wellness providers, as well as the individuals themselves, are connecting to a central,

	OWN SOLUTION	OPTIMISE SOLUTION
Cost	🚫 High	✅ Low
Time	🚫 >1 Year	✅ 4 - 8 Weeks
Biomedical Experience	🚫 Required	✅ Not required
IT Experience	🚫 Required	✅ Not required
Maintenance	🚫 Required	✅ Not required

The more data that is collected, the more accurate and effective the reports and recommendations will be. A further benefit for providers of connecting to a centralised platform is that updates and improvements will be rolled out automatically and in the background, meaning users will always have the most up to date solution at hand.

cloud-based platform for the data storage, analysis and tracking, all data remains fully accessible even when users change locations and providers. In fact the user is in complete control of their own data, it goes with them wherever they go. With ownership, mobility and control, users create their own personalised *Health Passport.*
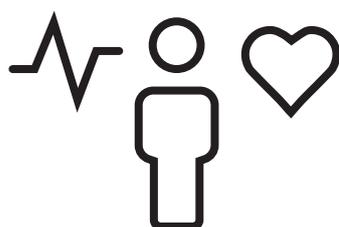
HEALTH
PASSPORT

While effectively solving the problems of 'sick care' rather than health care, one-size-fits-all, and the lack of patient participation, *Optimise* has the ability to cause a further revolution in health. The architecture of the platform is such that analysis and subsequent results are continually fed back into the system, enabling it to become more refined, precise and automated. In other words, the system learns from past experience and becomes 'smarter'. Once a suitable amount of data has been gathered, AI (artificial intelligence) and ML (machine learning) can be deployed allowing new

discoveries into bio-markers, disease prevention strategies, risk factors and other novel key findings.

Finally, the integration and centralisation of anonymised and aggregated data holds the promise of tantalising research opportunities from a variety of public and private stakeholders. The value of healthcare data is in little doubt. In fact, healthcare data is set to experience a compound annual growth rate of 36% through 2025, growing to a value of over $68 billion[6]. With adoption of the *Optimise* platform, healthcare and wellbeing advancements are set to become more achievable than ever before.

IN CONCLUSION

In today's world, the separation of healthcare and wellbeing providers is no longer viable. Bridging the gap, using modern digital technology, solves the problems that fuel the NCD crisis. Implementation of an effective digital bridge will save lives and reduce the crippling financial burdens of treating chronic and preventable diseases that are overwhelming healthcare systems the world over.

REFERENCES

1   2019 Global Health Care Outlook: Shaping the Future, Deloitte, 2019, https://www2.deloitte.com/global/en/pages/life-sciences-and-healthcare/articles/global-health-care-sector-outlook.html

2   World Industry Outlook, Healthcare and Pharmaceuticals, The Economic Intelligence Unit, September 2018, citing the World Health Organization (WHO)

3   Supporting healthy communities: How rethinking the funding approach can break down silos and promote health and health equity, Deloitte, 2017, https://www2.deloitte..com/insights/us/en/industry/health-care/building-and-funding-healthycommunities.html

4   Precision Medicine – Moving Away From One-Size-Fits-All, Kohler S, September 2018, Quest: Science for South Africa, 14(3); 12-15

5   Big Data to See Explosive Growth, Challenging Healthcare Organizations, Health IT Analytics, Xtelligent Healthcare Media, December 2018, https://healthitanalytics.com/news/big-data-to-see-explosive-growth-challenging-healthcare-organizations

6   Global Big Data in Healthcare Market: Analysis and Forecast, 2017-2025, BIS Research, 2018, https://bisresearch.com/industry-report/global-big-data-in-healthcare-market-2025.html

OPTIMISED HEALTHCARE

Powering the future of personalised healthcare