



ASIAN
HEALTHCARE

LEADERSHIP SUMMIT 2018

Innovation, Entrepreneurship & Disruption in Healthcare

21 – 22 September 2018
Resorts World Sentosa, Singapore

The Proceedings





Contents

Asian Healthcare Leadership Summit 2018	4
Session Highlights	5
Welcome Keynote	9
Day 1 - Opening Keynote	10
Global Healthcare Today & Tomorrow	
The Big Picture – Shaping Public Healthcare for the Future	12
Global Health in the 21st Century: A paradigm shift of the world's health	
Going beyond UHC - a Thailand story	
Reducing health inequity in Indonesia	
Healthcare in China by the Numbers: Opportunity or Obligation?	
How can we Shape the Future of Public Healthcare?	
Day 1 - Lunch Keynote	16
100 Years after the Spanish Flu: Are we ready for the next epidemic?	
Delivering Value – Embracing Better & Cheaper Healthcare	18
It's time to change the way drugs are delivered	
The Promise of Bone Marrow Banking	
Integrated approach to building effective solutions	
Entrepreneurship & Innovation Tracks	22
Inside-Out: Technological advancements for medical insights	
At Your Service: Innovative services tackling healthcare challenges	
Innovation for All: Progressive solutions ensuring healthcare availability	
Mass Customization: Customized solutions serving largescale problems	
Day 2 - Opening Keynote	36
The Four Pillars of Healthcare enabled by Technology – the Story of WeDoctor	
The road to "Healthy China" - Development of Big Data Healthcare & Medical Industry	
The Future is Now – Digital Disruption for Better Healthcare	38
Building an Evidence Base for the Future of Genomics	
Robotic Futures	
Redefining Healthcare Innovation	
Day 2 - Lunch Keynote	42
Healthcare Perspectives in the Global Economy	
Total Wellness – Holistic Wellness for Mind & Body	44
Ayurveda: The Original Lifestyle Medicine	
Generation Rx and the Health Crisis Happening In American Families	
Chinese medicine for Mind and Body Wellness	
Quality of Life – A New Era of Healthy Longevity	48
How Face-to-Face contact can make us Healthier?	
Caring for the Elderly	
How is redefining healthy ageing going to redefine quality of life?	
Our Sponsors	52
Participants' Thoughts	58

Asian Healthcare Leadership Summit 2018



The Asian Healthcare Leadership Summit (AHLS) 2018 was held from 21 to 22 September at Resorts World Sentosa Singapore. Organised by the idsMED Group, the Summit is Asia's premier thought leadership, experiential and networking healthcare event. Themed "Innovation, Entrepreneurship & Disruption in Healthcare," AHLS 2018 was the third edition of the Summit, following the success of the preceding summits of 2015 and 2016.

The Summit brought together leading practitioners, professionals, entrepreneurs, academia and thought leaders in the healthcare industry to network and engage in a dialogue to discuss, deliberate, share and address key challenges and opportunities in the next era of healthcare in Asia, with a global perspective.

New and significant demands are being made on the healthcare infrastructure of Asian countries, with the continent expected to be home to 50% of the world population by 2050. The adverse shift in demographics that governments everywhere are facing has created new sets of challenges and opportunities. Governments are trying their utmost to keep pace with rising costs and the new demands of an increasingly affluent population expecting better, cheaper and more responsive healthcare.

The theme of the 2018 Summit: "Innovation, Entrepreneurship & Disruption in Healthcare" witnessed our eminent speakers from across the globe make cutting-edge presentations on the following topics:

1. Shaping Public Healthcare for the Future
2. Embracing Better & Cheaper Healthcare
3. Digital Disruption for Better Healthcare
4. Holistic Wellness for Mind & Body
5. A New Era of Healthy Longevity

A unique feature of this year's event was the dedicated Entrepreneurship & Innovation Track that featured 12 successful entrepreneurs who are tackling world-scale problems facing healthcare today. Held in a break-out fashion with smaller groups, these tracks were an excellent opportunity to learn about entrepreneurs' journey and their success stories.

The Asian Healthcare Leadership Summit 2018 was majorly sponsored by the Victor and William Fung Foundation and organised by IDS Medical Systems Group (idsMED) with the support of its knowledge partner, INK. Other sponsors include WeDoctor China, International Finance Corporation (IFC), Oversea-Chinese Banking Corporation (OCBC), and Mitsubishi Corporation.

The event was attended by more than 500 worldwide participants from the industry including leading medical practitioners, policy makers, business leaders, entrepreneurs, academics and thought leaders from across the globe.

Some of the speaker presentation videos have been made available online for viewing. Please visit our website www.idsmmed.com and follow the link to Asian Healthcare Leadership Summit.

Session Highlights



Session 1: *Day 1 - Opening Keynote*

Healthcare costs are rising at an unsustainable rate globally. To stem the rise of healthcare costs, healthcare paradigms need to shift from being reactive, fragmented and disease-centered to proactive, continuous prevention-based models. Science and technology are key to empowering individuals and populations to improve individual wellness, reduce reliance on doctors, improve efficiency and reduce healthcare costs.

Income inequities have resulted in widening gaps of access to healthcare. Polarised societies pose a threat to the gains we have made from recent healthcare innovations and advances in medical research. Five areas of governance are proposed to ameliorate these risks and turn access to quality healthcare into a common good for every person globally.

Session 2: The Big Picture – *Shaping Public Healthcare for the Future*

Access to knowledge has become universal through mobile phone penetration, and a value shift from knowledge to analysis and insight is needed. Innovations and new knowledge generation are no longer dominated by US and Europe, but come from partnerships between countries all over the world. Partnerships between public and private sectors will be the fundamental ways of providing healthcare in future; more collaboration and communication between public and private institutions, as well as countries, will be needed.

Thailand's universal healthcare implementation did not take place overnight but has benefited from years of evolution, resulting in a focus on healthcare system design. Mobilising more financial resources to address healthcare problems is not necessarily the most effective way to solve them. Instead, focussing on the end goal, making health-centric policies and participatory leadership is needed. Participatory



leadership entails being flexible enough to make mistakes, rethink and redefine the problems faced in implementing universal healthcare.

Indonesia's implementation of universal healthcare still faces many challenges, including financial sustainability, equitable geographical distribution and additional disease burdens created by rapid industrialisation. Private sector funding and digital technology for remote areas are seen as ways to make healthcare available to those who can least afford it. Investments and restructuring of payment schemes are in the pipeline to raise overall health standards.

China is facing a looming crisis in chronic disease healthcare burden due to its unique population demographics, which requires hefty investments in cutting edge medical research and technologies. The Chinese government is investing capital in these research efforts, but it will not be enough. Private enterprise funding and charitable giving will also be needed. Non-profits can provide the final pieces of the financial jigsaw puzzle by providing funding for research on unmet medical needs that the private sector will not.

Session 3: *Day 1 - Lunch Keynote*

Preventing outbreaks are impossible, but we can prevent epidemics. Epidemic prevention requires coordinating both global and local responses to emerging outbreaks, as well as participation from the private sector and NGOs. Global epidemic preparedness measures taken to date include the provision of financial incentives for poorer countries to report epidemics, supporting epidemic preparedness research and innovations through government/private/public coalitions, and predicting certain epidemics via artificial intelligence.

Session Highlights



Session 4: Delivering Value – Embracing Better & Cheaper Healthcare

Disposable single use syringes hold the promise of delivering medicine to people everywhere, while being more affordable, practical, and safe. APIJECT is a single use, pre-set dosage syringe that eliminates the risk of cross infections while being lower in cost than current standards. The technology can enable real-time data monitoring capabilities to facilitate injectables supply chain planning, self-administration of basic healthcare medications previously requiring healthcare professionals, and other future use cases.

Bone marrow banking increases the volume of bone marrow harvested, increases genetic diversity, and increases the percentage of the population that can be helped by bone marrow transplants. Ossium's machine is designed to recover bone marrow using minimal skill involved, and can be used outside of major bone marrow recovery facilities, making it useful anywhere in the world including in remote areas

This machine paired with Ossium's partnerships with networks of major bone marrow recovery centres, will meaningfully increase the number of lives saved.

The modern lifestyle has created chronic diseases which we then treat using healthcare which is actually more of a "disease management system". A life of well-being shifts the conversation from disease management to that of living a healthy life. Love of learning and a life lived in holistic wellness will reduce an individual's need for healthcare and instead allow those dollars to be distributed to where they are most needed.

Session 5: Entrepreneurship & Innovation Tracks Inside-Out: Technological advancements for medical insights

Standard screening practices for vision problems are expensive, time-consuming and require trained healthcare

professionals. Technology can be used to reduce eye screening times and widen vision screenings to more people, resulting in unprecedented numbers of people being examined, tested and treated for vision problems. Artificial intelligence technology can eventually augment these physical screenings and identify patients who are at risk of developing other illnesses.

Story MD provides libraries of computer generated visuals that help people understand and explain their personal health journeys. The libraries are mapped to users' electronic health records, allowing them to turn their lab reports into stories that they can understand and share. Over time, users will be able to see how every variable that is monitored affects their health parameters, enabling them to use the platform to achieve their desired health goals.

It is now possible to monitor certain health conditions via smartphones and blood test strips, reducing the cost, inconvenience and travel time of hospital visits. Smartphones can not only generate blood test reports from these strips, they can also upload reports and other lifestyle information onto Jana Care's platform, connecting to doctors who can recommend treatment plans remotely. The platform is open to researchers and doctors to test and develop new tests that can detect and manage a wider range of diseases, such as cancers, infectious diseases, kidney diseases and heart failure.

Session 5: Entrepreneurship & Innovation Tracks At Your Service: Innovative services tackling healthcare challenges

Dominating the private dialysis market in India has required a strict set of rules. NephroPlus's playbook for market growth prioritizes patient-centricity, technological innovation and operational excellence. Their system has resulted in a per treatment cost of \$25, compared to the developed world which operates on an average of \$300 per treatment

The ikioo app imports data from wearables and devices like smart mirrors into the cloud to allow analyses and insights,

Session Highlights



while the ikioo platform allows users and suppliers to find new wellness and medical-related algorithms to expand their use cases. The blockchain platform is applied to verify third party healthcare transactions in a decentralised manner, creating a market that self-adjusts to demand and supply.

SONAS is a portable, battery-powered, low radiation and cost-efficient machine that performs the equivalent job function of an MRI or CT scanner with respect to measuring brain blood supply. Timely diagnosis of ischemic strokes can now be achieved using SONAS. First responders and caregivers can now know whether or not to send potential stroke patients to hospitals which have specialised stroke therapies and treatments.

Session 5: Entrepreneurship & Innovation Tracks *Innovation for All: Progressive solutions ensuring healthcare availability*

Gene analysis has now become commercially accessible on a large scale. The volume of genome analyses is set to soar in the coming two years. Centrillion Technologies has partnered with WeDoctor in China to bring genomic analysis tools to the masses and into the mainstream.

Cocoon Cam is the first baby monitor in the world powered by artificial intelligence. Parents can gain historical insights into their baby's sleeping patterns and more. The technology is being proposed to augment traditional devices used in hospital intensive neonatal care wards.

Dovetail Lab facilitates access to and use of silo'd data between different systems. This reduces the massive administrative burden of managing many systems and data sets. Blockchain technology is applied to ensure security and integrity of the data.



Session 5: Entrepreneurship & Innovation Tracks *Mass Customization: Customized solutions serving largescale problems*

High smartphone penetration and AI make it possible for access.mobile to help providers continue patient care outside clinic or hospital settings. These personalised interactions have the potential to increase patient engagement and outcomes, while reducing costs. Globalising personalised patient interaction still requires one to consider individual local contexts and environments.

CXA Group is an insurtech (insurance technology) company and insurance broker that is integrating data-driven disease prevention into health insurance. For the first time, employees can decide on how much of their premiums to put towards coverage, versus wellness or early disease detection and prevention programs. CXA's data is being used to drive research into the benefits of incentivising preventive healthcare.

Ventilators are vital, common hospital equipment that have not changed in over 50 years. They are a common source of hospital-acquired infections worldwide. VAPCare applies modern technologies and insights to reduce the risk of acquiring VAP.

Session 6: *Day 2 - Opening Keynote*

WeDoctor connects doctors, patients, medical systems and medical payment systems. Artificial intelligence can help community hospitals to raise their standards.

All patients, even those in rural areas, may soon be able to book appointments, receive outpatient services, make payments and even buy and receive medications at home.

Big data and artificial intelligence are key to China's public healthcare strategy. Advanced technologies will be trickled down from medical specialists to general practitioners. Insights and experiences will be shared with countries along the Belt and Road.

Session Highlights



Session 7: The Future is Now - *Digital Disruption for Better Healthcare*

People who received their own genetic profiles are more likely to take preventive action. Useful, actionable information has been extracted from mass genetic profiling. Medical costs have not gone up for people who asked for and received their genetic profiles, proving that popular prejudices against the widespread use of genomic data are largely unfounded.

Recent advances in robots have resulted in the possibility of incision-less lung biopsies. Digitized data from robotic surgery and AI means that surgeons can now be trained remotely. The challenge of training ever more surgeons can now be solved through technology.

Frugal innovation is the result of a frugal mindset. The focus of a frugal mindset is on delivering the same results, or meeting new goals, at a fraction of existing costs and resources. Applying the frugal mindset to healthcare innovation requires changes to conventional models of patient care delivery.

Session 8: *Day 2 - Lunch Keynote*

Digital health is going to be essential for cutting healthcare costs and delivering universal healthcare. A new paradigm based on untried technologies and financing is needed to reduce global inequalities of access to basic healthcare services. A self-enrolled One Belt One Road universal healthcare alliance can be the starting point for universal healthcare for everyone, everywhere.

Session 9: Total Wellness – *Holistic Wellness for Mind & Body*

Ayurveda is an ancient system of traditional practices and wisdom aimed at helping people live happy, healthy lives. Sleep, diet and their correct timing play important roles



in Ayurveda. Education in Ayurveda can empower people to take charge of their lifelong well-being, reducing and repurposing healthcare dollars.

The United States has an unprecedented rate of food allergies versus other countries. The safety of food produced in the United States may have been compromised by the use of genetically modified crops and man-made growth hormones. The United States should have a more participatory food system, and stands to benefit from adopting the food production practices used in other countries.

Western medicine is fragmented, episodic in nature, and lacks patient education and empowerment. In contrast, health-coaching, or life-coaching, is an essential element in Chinese medicine. Empowering and educating people to take charge of their health is the missing link needed to improve public health.

Session 10: Quality of Life - *A New Era of Healthy Longevity*

Close relationships and social integration are strong predictors of mortality. Face-to-face contact – “the village effect” - is an antidote to the ills of modern living. In-person interaction should be designed into healthcare systems and as part of overall healthcare strategies.

Elderly or sick care often takes place in the home setting, for the long term. This form of care not only requires training, it requires compassion. Getting care to people at the right time and place, and getting carers with the right attitude are equally important.

Retaining functional abilities at a high level is one way of defining active ageing. The way we look at the older population is flawed and should be changed to recognise their potential. Enabling elderly people to live the lives they want should be at the heart of medical practice.

Welcome Keynote



Mr. Ben Chang

Group CEO & Founding Partner
idsMED Group

EXECUTIVE SUMMARY

- Healthcare costs are rising at an unsustainable rate globally
- Healthcare paradigms need to shift from being reactive, fragmented and disease-centered to more proactive, continuous prevention-based models
- Technology can empower individuals and populations to improve individual wellness, reduce reliance on doctors, improve efficiency and hence reduce healthcare costs

Global health care spending is close to eight trillion annually and will rise to nearly 20 trillion by 2040. Despite this jump in expenditure, over 100 million people will fall into poverty each year because they cannot afford their health care payments. In the United States alone, nearly 60 percent of all bankruptcies are due to healthcare.

It can thus be said that a health crisis, comprising inequality of coverage and unaffordable expenses, is now sweeping the world.

The root cause appears to be broken, intermittent, and unconnected healthcare systems. Care institutions and healthcare infrastructure are entirely reactive, making healthcare very expensive, inefficient, and sometimes ineffective and discontinuous.

A paradigm shift - that is, a move from traditional healthcare models based on the delivery of medical services - is needed to solve this healthcare crisis.

In Search Of A New Healthcare Paradigm

This new model of healthcare requires a shift from the reactive, fragmented and intermitted healthcare system of old, to more proactive, connected and continuous systems.

Advanced technologies and sciences, such as genomics, digital wearables and artificial intelligence, are key factors for making this shift happen. Together, they can enable a new approach towards healthcare to take shape in all spheres of life, instead of being narrowly limited to medical care that is delivered only when people fall sick.

When healthcare is extended beyond the medical setting, significant cost reductions and increased efficiencies can take place. Most importantly, the power and responsibility to stay healthy can now be put into the hands of individuals.

This new healthcare model works by reaching deep into the preventative side of the healthcare equation, to finally allow healthcare to fully embrace the totality of wellness and prevention.

Within this new model, every individual will be able to take responsibility for his or her own health, which drives further engagement and empowerment. This way, we will no longer become dependant on doctors for all of our healthcare needs, and instead can become the main drivers and chief executives of our own health and wellness.

Day 1 - Opening Keynote

Global Healthcare Today & Tomorrow



EXECUTIVE SUMMARY

- Income inequities have resulted in widening gaps of access to healthcare
- Polarised societies pose a threat to the gains we have made from recent healthcare innovations and advanced medical research
- Five areas of governance are proposed to ameliorate these risks and turn access to quality healthcare into a common good for every person globally

Today, humanity has generated more wealth than ever before, yet most of this wealth is unevenly distributed and concentrated in the hands of a few individuals. At the same time, living and health standards have never been better. However, access to new life-extending, mind-enhancing technologies and knowledge is increasingly concentrated in the hands of the upper class, which may lead to divisions of societies along the lines of the super-smart versus the not-so-intelligent.

This state of affairs has resulted in the rise, in several countries, of ultra-nationalist demagogues selling quick-fix solutions, or authoritarians looking for scapegoats to boost their popularity. This has deeply polarized our societies in the process.

What is needed today is to keep the amazing capabilities and power gained from healthcare and technological advances in check, on track, and accountable for the common good. Five areas of governance are proposed.

1. Global governance for global health

Isolation is impossible today, and countries have become deeply interdependent on each other.

Despite this, the principal challenge faced by governments today is that more cooperation is needed at the global level for the survival of humanity. Yet, political forces in many countries are moving policies in the opposite direction, toward isolation and xenophobia.

To counter these trends, policy makers, politicians, and governments around the world must rethink and strengthen their health organizations and policies at international levels, including major treaties that affect healthcare.

2. Good governance for affordable and accessible quality healthcare to all

Good governance is needed to assure the iron triangle of accessible, affordable, and quality healthcare. But while throwing money at a problem will solve it, the problem is not simply a financial one.

Accountability, transparency and efficient governance are also needed to produce huge benefits that can accrue to all.

This understanding that benefits must accrue to all must become part of the future social contract and understanding and commitment of all stakeholders, guaranteeing affordable, accessible and quality healthcare for all.



3. Digital governance for better healthcare

Technology, especially in terms of collecting data and analyzing vast amounts of information, will be the basis of heightened efficiencies fueling modern research and healthcare gains in future.

These monumental achievements also have their pitfalls. As healthcare goes digital overnight around the world, in its wake, information security faces a tidal wave of threats and vulnerabilities.

Given the extraordinary volume of data transactions, even gains in advanced security analytics cannot be expected to catch every form of healthcare claim fraud. Hence countries must invest and prioritise digital governance.

4. Governance for and by our citizens, but also in healthcare

Estonia has developed a system in which citizens own their personal healthcare data. Each citizen gives permission for this data to be used by his doctor, the local government, or by a private company.

The idea that citizens should own how their health data is used and governed is echoed in StoryMD.com, which founder Mr. Alexander Tsiaras hopes will become a best-in-class platform for processing health data into personal stories, which each person will own. The users of StoryMD.com are thus empowered to take ownership of his or her health by tracking, understanding, and acting on this health data.

5. Inclusive governance

Finally, healthcare needs to move from disease treatment to building health and wellness, from fragmentation to integration, from treating organs to treating the whole person, from hospital-based to community-based healthcare, and from a patient-focused top-down approach, to a more democratized approach where it is both the right and the responsibility of each of us.

One might characterize this approach as moving towards a more inclusive, holistic philosophy that integrates health into every policy area. The end result is health for all, in all, and by all - a global social contract based on healthcare.

The Big Picture – Shaping Public Healthcare for the Future

Panel Discussion



Dr. Ashish Jha, MD, MPH
Director
Harvard Global Health Institute



Dr. Somsak Chunharas
Former Deputy Minister of Health for Thailand
President
National Health Foundation Thailand



Prof. Dr. Laksono Trisnantoro
Professor
Universitas Gadjah Mada Indonesia

The Big Picture: Shaping Public Healthcare for the Future

Ms. Lakshmi Pratury set the stage for the discussion by inviting the four panel speakers to bring the big picture of public healthcare into focus, by showcasing the different perspectives they have as public health researchers and entrepreneurs in four Asian countries.

People are living longer, better lives. This progress has come about because we've had big gains in knowledge through large investments in science. Global health has also been a major priority of governments, and foundations like the Gates Foundation, and global institutions like WHO have done incredibly important work.

The problem is all of the tools we have had for success over the last 20 years will not work for the next 20 years, because the world is changing.

Global Health in the 21st Century: A paradigm shift of the world's health

Dr. Jha presented a global perspective on public health and described what was happening around the world. He explained that while today, people are living longer, better lives, this progress has come about because of big gains in knowledge through large investments in science. However, the tools used to attain progress in healthcare over the last 20 years will no longer work for the next 20 years, because the world is changing.

Smartphone penetration has resulted in universal knowledge and access to knowledge, meaning future advances in healthcare for the next 20 years will come instead from analyses and insights. Dr. Jha pointed

to changing trends in the sources of new knowledge generation, and ownership of healthcare services, as being behind new needs in the world for more private-public collaborations and government repositioning.

To adapt to these changes, a greater focus on transparency and openness is needed as well, because the tools of technology and innovation systems can also be used to create harm and make healthcare systems less equitable.

He encouraged more collaboration, but not just between individual researchers, but between institutions and countries. Greater engagement with the private sector should also be sought, and governments would need to rethink the roles they play in helping to reduce inequities. This is because in the final analysis, inequities in care can create social instability, which in turn puts all of the gains we have reaped to date at risk.

Going beyond UHC - A Thailand story

Dr. Somsak Chunharas elucidated that Universal Healthcare (UHC) in Thailand had not been implemented overnight, but is instead the beneficiary of long decades of Thai health system evolution. These evolutionary changes have resulted in an exceptional focus on healthcare systems design in Thailand.

He added that it is important to note that these evolutionary changes were not accomplished by or the results of the actions taken by any single political leader. While political leaders have been important to help UHC see the light of day in Thailand, getting UHC implemented and making it sustainable required leadership from many other groups of stakeholders in the Thai health system.

The Big Picture – Shaping Public Healthcare for the Future

Panel Discussion curated by



Mr. John Petrovich

President & CEO
Alfred Mann Foundation



Ms. Lakshmi Pratury

CEO & Founder
INK

Rather than simply focusing on mobilizing more financial resources to meet ever increasing demand, which would eventually result in financial risks being borne by patients anyway, he said a rethink and redesign of the way the UHC is delivered was required.

Ability to change and evolve at the heart of Thai UHC

In order to move forward with UHC in Thailand, three things had to be done. The Thai health system had to have built-in capability for rethinking and redesign. In other words, stakeholders had to constantly ask themselves whether they had the kind of UHC system that they wanted.

Next, all sectors had to become concerned about health. In short, health had to be put into policies. Bringing health to policy not only reduces health risk, but also optimises spending for health. At the same time, conflict and confrontation is reduced, while fostering community productivity.

New kinds of leadership are also needed, which he described as “participatory leadership with participatory learning”. Learning does not only come from evidence-based decision making, it also involves learning from mistakes that are made along the way.

The Thai UHC experience demonstrates that if participatory leadership does not exist in other parts of healthcare systems, the system as a whole will be very rigid, and will not be able to transform and evolve to meet different demands and goals.

Reducing health inequity in Indonesia

Prof. Dr. Laksono Trisnantoro described the problems

faced by Indonesia, which included weak tax collection, a tax ratio to GDP of around 10%, and a low national health budget at only about 5% of the national budget.

Despite these challenges, Indonesia embarked on providing universal healthcare in 2014. Like many other UHC systems, it is not perfect – in particular, it suffers from ethical inequity because there are higher numbers of hospitals, human resources and medical specialists concentrated in the main islands and also Sumatra, compared to the rest of Indonesia.

This situation is worsened by the fact that the national health insurance scheme, organized by BPJS, is highly centralized, like a corporation. This system does not fit well with Indonesia's decentralized government system. As a result, the insurance system is fragmented; hence financing and health care utilities are not provided uniformly.

Population health burdens, policy and infrastructure issues

Another challenge faced by Indonesia's implementation of universal healthcare is the triple burden of disease. Diseases like tuberculosis and malaria are still common, but Indonesians also face non-common diseases, as well as cancer and other diverse world diseases.

Furthermore, Indonesia's furious pace of development has resulted in an increased rate of transport-related accidents. There are also limited policies in place promoting healthy lifestyles, and smoking control is very, very weak.

In summary, healthcare quality is an ongoing conversation that Indonesia needs to stay engaged in, while new ideas are difficult to implement because of a lack of human resources and budget.



The Big Picture – Shaping Public Healthcare for the Future

Panel Discussion



Private sector funding, insurance restructuring, more facilities in the pipeline

Indonesia is now looking at private sector funding to bolster healthcare delivery, because limited tax funds make financing the healthcare needs of single person in Indonesia unfeasible. It is also looking to digital technology to increase the level and standards of healthcare in remote areas. There are also many flaws in Indonesia's public health insurance schemes, and bailouts using temporary solutions are necessary. Scheme restructuring is planned in the long-term.

Despite all these challenges, Prof. Trisnantoro said Indonesians can generally remain optimistic due to a few silver linings. They generally enjoy good end of life care, which will be improved upon, and can look forward to more investments into effective care, and wellness facilities.

Healthcare in China by the Numbers: Opportunity or Obligation

Mr. John Petrovich shed light on China's looming ageing population boom. This will be an ageing population that will not only be challenged with all the typical diseases and chronic conditions associated with age and increasing affluence, but also a dwindling source of tax revenue to fund their care as the working adult population shrinks.

To tackle this crisis, China will need increasing amounts of cutting-edge medications and medical devices. Filling that need is going to be at the crux of solving this crisis.

Many institutions will play a role, beginning with the government. However, investments from government are not going to be enough. The private sector and China's venture capital community will need to get involved as well.

Non-profits: their role, advantages and strategic importance

Non-profit organisations, applying resources that are given to them by wealthy entrepreneurs and the public through direct donations, can play an important part in healthcare innovation. They can take bolder moves and bolder initiatives.

For example, the Alfred Mann Foundation has a history of taking on projects that the private sector will not, bringing medical technology to unmet medical needs and markets. In this context, non-profits like them can be the final pieces in a puzzle to help solve the looming ageing crisis in China.

The Big Picture – Shaping Public Healthcare for the Future



How can we shape the future of public healthcare?

Ms. Pratury asked Dr. Jha for an example of how the value of innovations in global public health can differ depending on which countries they are applied to. Dr. Jha explained that innovation has to be tailored to individual problems, and certain countries may not be suitable for certain technologies.

As an example, he described how artificial intelligence for diagnostics is regarded as inferior to expert physicians in countries like the US and western Europe, but have a place in countries like India where doctor to patient ratios, diagnostic rates, and physician training may not be ideal.

Next, Dr. Chunharas was asked how he thought public health systems can survive transitions of governments. He replied that the Thai health system is more a mix of private and private partnerships than predominantly public, and that participatory leadership from different sectors in the society – such as academics and civil society leaders - can both insulate health systems from political transitional shocks, as well as be active players capable of shaping positive and optimising changes.

Prof. Trisnantoro was probed on how the Indonesian government should best allocate limited public healthcare funding in his opinion. He replied that these funds should be reserved for the poor and for those who live in rural areas, and that it would result in an unstable government if the middle class continued to rely on government funds to pay for their healthcare.

Mr. Petrovich was quizzed on what could be done in China for public causes using private funds. He answered that organisations like the Alfred Mann Foundation can bridge the funding gaps that innovative projects in early or mid-stage development need to fill in order get to a working prototype, which venture capitalists have avoided investing in.

He added that the fact that his foundation does not require quarterly profit statements or accountability to shareholders makes all the difference in the world in terms of how it approaches risk and investments.

Day 1 - Lunch Keynote

100 years after the Spanish Flu: Are we ready for the next epidemic?



Dr. Peter Piot MD, PhD

Director
London School of Hygiene &
Tropical

EXECUTIVE SUMMARY

- Preventing outbreaks are impossible, but we can prevent epidemics
- Epidemic prevention requires coordinating both global and local responses to emerging outbreaks, as well as participation from the private sector and NGOs
- Global epidemic preparedness measures to date include provision of financial incentives for poorer countries to report epidemics, supporting epidemic preparedness research and innovations through government/private/public coalitions, and predicting certain epidemics via artificial intelligence

Epidemics are part of the human condition and of human history, and have sometimes determined the outcome of wars and changed economies. The 14th century plague in Europe completely changed its power relations, property relations, and the labor market. Likewise, the recent bird flu epidemic of 2003 has had some long term societal impacts.

In several European countries, the bird flu epidemic served as a wake up call to governments regarding the major roles they play with regards to public health, disease prevention, and healthcare systems.

The emergence of another outbreak cannot be prevented, because outbreaks are accidents of nature. However, it is within our power to prevent epidemics.

Key lessons from West Africa's Ebola outbreak

The 2013 Ebola outbreak in West Africa pointed to a failure of local response. The World Health Organization had failed to do its job. Afterwards, there were reports and analyses of what went wrong, to discover what is needed to prevent another Ebola outbreak.

The first and most important lesson is that a global response or global governance needs to be paired with local capacity in every single country for early detection and rapid diagnosis. This translates into better access to good laboratories, public health systems, and surveillance apparatus.

The reports also point to the fact that institutions should not be operating in isolation. During West Africa's ebola outbreak, governments did not communicate with NGOs. The private sector was not involved, but it has a lot to offer because logistics and communication are key in dealing with epidemics. Research and development, which is driven by market forces, was also not delivering assistance because there are no market incentives.

Day 1 - Lunch Keynote



Updates and challenges on global epidemic preparedness

Several countries such as the United Kingdom have now set up rapid support teams. It is hoped that these rapid support teams are not only designed for working within these countries, but for supporting others teams globally. No country is rich enough to be able to go it all alone, and even poor countries have something to offer from their experiences.

The World Bank has also established a kind of insurance scheme for epidemics, to reduce the likelihood that poor countries will not declare epidemics once they know about them. The danger for poor countries is that once news of an epidemic spreads, like in West Africa, borders will close, flights will get cancelled, and commerce can come to a halt.

To counter this and encourage early reporting of epidemics from these countries, the World Bank now has a mechanism called a Pandemic Emergency Financing Facility, that provides incentives for reporting an epidemic. If the country declares immediately, it gets compensation, and it's an underwriting system that has already been tested once.

Coalition of public, private and government

In terms of research and development, a CEPI (Collation for Epidemic Preparedness Innovations) has been put together. It is a coalition underwritten by the governments of Germany, India, Japan and Norway, together with big pharma like J & J, Merck, Takeda, and GSK, as well as academic groups and NGOs like the Gates Foundation and Wellcome Trust.

The rationale for CEPI is that where there's market failure, the government and the public and the private have to come together to step in. About 700 million dollars have been raised, and there are now research programs active for Lassa Fever, MERS and Nipah virus, where before there were no commercial incentives for these programs.

There is also a growth of mistrust in science and vaccines. For example in Japan, there has been a collapse in vaccine coverage for the human papillomavirus vaccine which can prevent cervical cancer. Coverage has collapsed because a few girls fainted, that went viral and became a movement. Hence, sociological contexts also pose new challenges.

Finally, artificial intelligence can be used to help us predict places where there are greater chances of certain epidemics, based on certain parameters and the location of the virus-carrying animals.

Delivering Value - Embracing Better & Cheaper Healthcare

It's time to change the way drugs are delivered



Mr. Marc Koska
President
Apiject

EXECUTIVE SUMMARY

- Disposable single use syringes hold the promise of delivering medicine to people everywhere, while being more affordable, practical, and safe
- APIJECT is a single use, pre-set dosage disposable soft syringe that eliminates the risk of cross infections while being lower in cost than current standards
- Added technology can enable real-time data monitoring capabilities to facilitate injectables supply chain planning, self-administration of basic healthcare medications previously requiring healthcare professionals, and other future use cases

In many parts of the world where resources are scarce, it seems wrong and wasteful to throw away a syringe after a single use. A disposable syringe that can be used by anyone, with the full understanding that they can only use it once, would solve this problem directly.

Additionally, such a syringe has to cost less per dose than the standard available format. It has to be pre-filled and designed for just one use, so there would be no measuring mistakes, no separate vials, and no contamination. Lastly, this new syringe should look and feel as disposable as an empty toothpaste tube.

Soft syringes based on the Blow-Fill-Seal process

To meet these engineering specifications, APIJECT turned to little plastic vials which hold eyedrops. These are made by a process called BFS: "Blow-Fill-Seal". Using this process, soft syringes can be manufactured with valves that prevent refilling after use, and feature unique hubs mated to them for easy identification of medications.

With soft syringes, the need for all glass vials can be eliminated, as well as the likelihood of refills, contamination, and spread of disease. The soft syringe is cheaper than any other format, and significantly cheaper than 10-day vials, the current standard for delivering injectable medicines.

APIJECT's low cost means many more countries with limited resources can spend the same health dollars as they did before while inoculating millions more people.

There's also the ability to self-administer the dose. Each soft syringe comes in pre-set doses to eliminate overdoses or underdoses, making it possible for patients to regularly self-inject medicines from the convenience of their homes.

Data analytics for injectable medicine

What's more, RFID data chips will soon be added to soft syringes, which will make every APIJECT soft syringe linkable to a computer system. Every time an injection is given using these syringes, the onboard chips can automatically upload their status in real time from the field to a clinic, a government, or an NGO.

Additional details like the weather at the time of the injection or GPS coordinates can also be captured with these chips. This will then allow large volumes of data to be collected for planning purposes.

This has the potential to change the way vaccines and drugs are injected around the world, making medicine more affordable, practical, and safe for all people.

Delivering Value - Embracing Better & Cheaper Healthcare

The Promise of Bone Marrow Banking



EXECUTIVE SUMMARY

- Bone marrow banking increases the volume of bone marrow harvested, increases genetic diversity, and increases the percentage of the population that can be helped by bone marrow transplants
- Ossium's machine is designed to recover bone marrow using minimal skill involved, and can be used outside of major bone marrow recovery facilities, making it useful anywhere in the world including in remote areas
- This machine paired with Ossium's partnerships with networks of major bone marrow recovery centres, will meaningfully increase the number of lives saved.

Currently, organ transplant ecosystems face the challenge of too many patients suffering from organ rejection and organ complications. The blood cancer treatment ecosystem would benefit as well from a greater volume and genetic diversity of bone marrow available for transplant. According to Ossium, both of these problems are addressable with a single solution: namely, recovering bone marrow from the same donors who are providing the organs.

To deliver this solution, several years ago Ossium started building a network of hospitals and tissue recovery organization, to begin the process of building a bone marrow bank. Ossium says their target of a hundred thousand unique donors translates into 500,000 doses over the next decade, which maximizes the genetic diversity represented in the bank and the percentage of the population that they would be able to help.

Building the world's largest blood and bone marrow bank

As of now, more than a third of all organ and tissue donors around the country are moving through organizations that are in partnerships with Ossium, with that number increasing by the month.

Ossium has also designed a machine to miniaturise and modularize the processes that are performed in large facilities. The machine is able to process bones that are recovered from a deceased donor and harvest bone marrow that's prepared for cryopreservation, with minimal actual skill involved. This machine can be taken not only to parts of the United States where Ossium may not have facilities on hand, but also other parts of the world.

Once these two processes are actually up and running in scale, up to 90 lives every single day can be saved because of the ability to recover and transplant bone marrow from deceased donors.

Delivering Value - Embracing Better & Cheaper Healthcare

Integrated approach to building effective healthcare solutions



EXECUTIVE SUMMARY

- The modern lifestyle has created chronic diseases which we then treat using healthcare modelled on “disease management”
- Defining health as a life of well-being shifts the conversation from disease management to that of living a healthy life
- Love of learning and a life lived in holistic wellness will reduce an individual's need for healthcare and allow those dollars to be redistributed to where they are most needed

Today many people in the world are suffering from an epidemic that may be named ‘the modern lifestyle’. The chronic diseases that most suffer today are caused by this modern lifestyle.

These include mental diseases such as depression, anxiety, stress, burnout, and anger, as well as physical diseases such as asthma, diabetes, blood pressure, hypertension, back problems, cancer, and addiction.

Managing these diseases has not translated into healthcare, but instead represent a disease management system. The conversation has to shift from disease management to well-being as a journey of life each person undertakes.

Defining well-being

A life of well-being includes holistic well-being, physical well-being, emotional well-being, social well-being, and spiritual well-being.

Holistic well-being has many elements and many facets. It is not a destination, but instead a journey. Holistic well-being has to be personalized because one size does not fit all.

Using love for learning to enhance well-being

It is also important to focus on creating and cultivating a love for learning. When people are in love with each other, and in love with humanity and the planet, they care.

People do not destroy the things that they love and care for. People who lead a life of well-being do not start wars, kill each other, commit suicides, or bring guns to school or to the office. They have discovered themselves and are very happy with themselves.

The future of learning is therefore a game of personalized holistic learning. When people start living the life of well-being, they develop good habits and good lifestyles. When they have good lifestyles, they will not need to spend a lot of dollars on healthcare.

When they do not spend a lot of dollars on healthcare, the dollars that exist in the system can then be used to democratize healthcare and allow access to it all over the world. The best of healthcare will then be shareable with everyone in the world.

Delivering Value - Embracing Better & Cheaper Healthcare



Inside-Out: Technological Advancements for Medical Insights

Eradication of Preventable Blindness - A Digital Platform Approach



Mr. Chandrasekhar K
Founder & CEO
Forus Health

EXECUTIVE SUMMARY

- Standard screening practices for vision problems are expensive, time-consuming and require trained healthcare professionals
- Technology can be used to reduce screening times and reach more people, resulting in unprecedented numbers of people being examined, tested and treated for vision problems
- Artificial intelligence technology can eventually augment these physical screenings and identify patients who are at risk of developing other illnesses

India has about 20 thousand ophthalmologists serving a 1.2 billion population. This ratio of eye doctors to patients makes it almost impossible for patients to receive timely care. This has led to a high prevalence of refractive errors, targeted retinopathy, cataracts, and macular degeneration, which are all huge problems leading to preventable blindness in the Indian population, especially in the rural areas.

To help India's eye patients, especially the rural poor, at the start of its business, Forus Health originally decided that an active device was needed which could take retinal images without first requiring dilation, delivering the ability to screen eyes in only two to three minutes.

They had wanted the device to be operable by someone from the community, which meant it had to be very easy to use. Lastly, they wanted to make the device at one fifth the price of the machines used by hospitals and eye clinics.

Additionally, they also wanted to reach out to people who do not know that they have vision problems. Patients seeking eyecare usually understand that they have a problem, which is why they present at ophthalmologists; these people however represent only 15% of the population.

From hardware to an end-to-end m-health platform

It was this last point which pushed Forus Health to transform into a digital health platform company providing an end-to-end solution. The low-cost medical device it wanted to develop, which was called 3nethra, became just one of the components of its digital health vision.

Forus Health's platform is capable of collecting a patient's data and retinal images, and connecting to a supply chain system for glasses, as well as to retina doctors who are able to read these retinal images and data over the Cloud.

Additionally, they have also integrated the complete artificial intelligence platform of Microsoft into their platform. Retinal images are sent to the artificial intelligence platform, which scans them for abnormal features, at which point they are then sent on to ophthalmologists, who make the diagnoses and refer patients as necessary to nearby tertiary centers for treatment.

Cheaper, faster and predictive results

The entire service is priced at at five to six dollars, including the delivery of corrective glasses, and it has already achieved phenomenal results. Forus Health estimates that it has reached an astounding half a million people in about six to seven months, and performed 100,000 examinations. More than 350,000 glasses have dispensed using their platform.

Going forward, they will be able to take a patient's retinal image and predict whether that patient is susceptible to cardiovascular issues, strokes, hypotension, or Alzheimer's disease, using artificial intelligence.

Inside-Out: Technological Advancements for Medical Insights

Visual Storytelling Transforming Personal Health Data



EXECUTIVE SUMMARY

- Story MD provides libraries of computer generated visuals that help people understand their personal health journeys
- The libraries are mapped to users' electronic health records, allowing them to turn lab reports into stories that they can understand and share
- Users will be able to see how every variable that is monitored affects their health parameters, enabling them to use the platform to achieve their desired health goals

92% of diabetics who have a chronic condition cannot define their own disease. When people can be turned into the best storytellers about their diseases or every other imaginable disease, using visualization technologies they can quantify as well as see, we can then create visual visceral information that would really have an impact on people's lives.

Story MD is the platform that has been created with these goals in mind. It allows people to track, understand, and act on their health data. It is the sum of all their healthcare experiences and of their entire lives stored as memories.

What Story MD aims to create is a global, visual information system that anyone can understand, using the power of images and visualisation to explain medical conditions, biomarkers and life events.

One-stop integration with electronic medical records

Another feature of Story MD is that it is working to map the over 1,100,000 codes used in Health Level 7 international electronic medical records, to all the visuals in its libraries, so that people can read what is going on in their lab reports and turn them into personal visual assets.

This is aimed at having all healthcare information in one place, controlled by users for the rest of their lives. This would enable people to have the freedom to upload their health information directly to their physicians, no matter where they are or which physicians they choose.

Story MD aims to allow people to congregate all their separately stored health records in one platform, which can be individually shared with friends, family or community.

Beyond understanding the present: shaping the future

Story MD is also useful for longitudinal studies, in the sense that as each person's story progresses over time, they can see how their bodies have changed as a result of all the variables that affect them, including the food they eat and how their diseases have progressed.

This information can be used not only to manage diseases or pregnancies, but also to optimize physical performance. For example, athletes are constantly looking at their biomarkers, and they will be able to use Story MD to directly improve their performances on the field or on the court.

Inside-Out: Technological Advancements for Medical Insights

Blood to bytes: How to turn a drop of blood into chronic care management



Ms. Veronica Chew
Chief Marketing Officer
Jana Care

EXECUTIVE SUMMARY

- It is possible to monitor certain health conditions via smartphones and special blood test strips, reducing the cost, inconvenience and travel time of hospital visits
- Smartphones not only generate blood test reports from these strips, they can also upload reports and other lifestyle information onto Jana Care's platform, connecting to doctors who can recommend treatment plans remotely
- The platform is open to researchers and doctors to test and develop new tests that can detect and manage a wider range of diseases, such as cancers, infectious diseases, kidney diseases and heart failure

There are close to 7.6 billion people on Earth, and up to 70% of them own a smart phone or a mobile phone. At the same time, hypertension, pre-diabetes, diabetes, heart failure, chronic kidney disease and other non-communicable diseases are all chronic conditions requiring regular monitoring, most commonly via blood tests.

Yet most patients, especially those with low resources, are never diagnosed with these chronic conditions until they have worsened and hence become expensive and complicated to treat. Jana Care's challenge was discovering how to address this problem using smart phones, and make blood tests that are high quality, affordable and simple.

Mobile diagnostics - literally

Jana Care's answer is an optical reader that reads color or chemistry changes on test strips. It sends the data directly through the audio jack to a smart phone for analysis and returns results on the spot.

This is a smart phone platform, so it also allows patients to perform these tests at home, as well as record lifestyle data, exercise tracking, food intake, and other information.

These can all be communicated to patients' doctors so that they can provide better care for the patient. This helps the doctors to care for their patients more easily and cost effectively and also creates convenience for the patients.

Being able to monitor conditions and modify lifestyle factors in advance before they worsen also means health treatments can be cheaper, before chronic conditions become more complicated and not as easy to treat.

From diagnostics to prevention

Today, Jana Care has teams focusing on diabetes, heart failure, kidney conditions, liver function and metabolism, and has recently completed a randomised controlled trial at a hospital where a digital heart failure program was tested with patients who have heart failure. The results have been very encouraging.

Jana Care is also allowing developers to create tests on their platform, and are working with several institutions and cancer screening centers, as well as on tests for malaria and other infectious diseases. Siemens Electronics is currently distributing their products, and they have already begun selling in the Middle East, America, and South East Asia.

At Your Service: Innovative Services Tackling Healthcare Challenges

Dialysis redefined in India @ \$25



EXECUTIVE SUMMARY

- Dominating the private dialysis market in India has required a strict playbook
- NephroPlus has prioritized patient-centricity, technological innovation and operational excellence to achieve phenomenal market growth
- Their system has resulted in a per treatment cost of \$25, compared to the developed world which operates on an average of \$300 per treatment

NephroPlus essentially started the private dialysis network market in India, and in just six to seven years, private dialysis service providers have captured 20% of the market. NephroPlus owns 10% out of that 20%.

They operate 150 dialysis centers with approximately 1650 beds across 90 cities in 18 states, and perform more than 100,000 dialysis treatments a month, with about 2200 employees. The company has grown at a rate of 60% over the last four years. Why has NephroPlus been able to scale up so rapidly and make such a big impact?

Patient-centricity, consistency and innovation

The first reason is NephroPlus's patient-centricity. NephroPlus calls their patients guests, not patients, because "patient" has negative connotations. They celebrate their guests' birthdays, and have conducted the world's only Dialysis Olympiad twice because they wanted their guests to lead normal lives.

The company is the only one in India to host a Holiday Dialysis Network which allows patients to book their holidays through their center managers, at no additional cost.

All their centers also have to adhere to standardized clinical and operational protocols, and no deviation is allowed. NephroPlus says that maintaining the non-deviation culture is integral to their health care delivery business, especially because their patients run the risk of cross infections.

NephroPlus also places high importance on continuously innovating, investing in technology and focussing on operational excellence. To this end, they have continuously optimised every single line item cost, which has resulted in their low cost of dialysis in India of only \$25.

Bringing down the cost of dialysis treatments in the developed world

In the next six months, the company is looking at entering into the middle income market. They will be launching in four new countries over the next four years, and aim to hit a price point of about \$50 - \$100 dollars for dialysis.

This low cost is remarkable in the developed world, which still operates on an average of \$300 per treatment. In the US, such treatments cost roughly \$250 - \$275 dollars per treatment.

NephroPlus's medium term vision is to make an impact in the middle income world which will eventually disrupt the highly regulated closed markets for dialysis in the developed world.

At Your Service: Innovative Services Tackling Healthcare Challenges

Nuanced Healthcare in the era of AI and Blockchain



Dr. Ayman Salem
Founder & CEO
ikioo® Technologies

EXECUTIVE SUMMARY

- The ikioo app imports data from wearables and devices like smart mirrors into the cloud to allow analyses and insights
- Their platform allows users and suppliers to find new wellness and medical-related algorithms to expand functionality and usage
- The blockchain platform helps verify third party healthcare transactions in a decentralised manner, creating a self-adjusting market governed by supply and demand.

ikioo Technologies has three integrated platforms: a digital health app which integrates features like daily health scheduling into its Digital Health platform; an integrated Artificial Intelligence platform; and a Blockchain platform.

1. Digital Health

The ikioo app provides guidance to the users who are making health or medical decisions, using instant feedback from providers on the ikioo platform. A provider can be a doctor, a nurse, a trainer, a dietician, or family members. Patients select what access each provider gets to their data: for example, if the provider is a trainer, he only gets access to nutrition and fitness events; if it's a doctor, he may be allowed access to all of the user's data.

The app is also connected to users' wearables. Data is imported passively from the wearables or other peripherals, and artificial intelligence is run on this data on the portal.

Providers are also allowed to sell goods and services on the portal, providing a helpful conduit between users and the relevant products they need.

2. Artificial Intelligence

Through AI analyses, users are able to receive monthly 60 page reports which correlate different things such as the food they ate, how much their heart rates went up or went down as they worked out, and how much saturated fatty acids they consumed. This gives total insight into the amount of calories they are getting and the sources of these calories.

The ikioo portal also serves as a global AI health presence, enabling users to search for and run wellness and medical related AI algorithms, while serving as an open platform where providers can build and deploy their own AI algorithms to allow people to manage their lifestyle and perform certain types of health or medical analyses.

3. Blockchain

Ikioo's block chain platform is aimed at creating a decentralized healthcare community that's self governed. It is used for third party verifications of healthcare transactions, and to incentivize users and providers of AI. The ultimate goal is to have a decentralized self governed healthcare community that self adjusts to the healthcare needs of the users.

At Your Service: Innovative Services Tackling Healthcare Challenges

SONAS - a battery-powered, portable ultrasound device for early stroke detection



Dr. Thilo Hoelscher
Co-Founder, CEO & CMO
Burl Concepts

EXECUTIVE SUMMARY

- SONAS is a portable, battery-powered, low radiation and cost-efficient machine that performs the equivalent job function of an MRI or CT scanner with respect to measuring brain blood supply
- Timely diagnosis of ischemic strokes can now be achieved using SONAS
- First responders and caregivers can now know whether or not to send potential stroke patients to hospitals which have specialised stroke therapies and treatments

Ischemic stroke is the most time sensitive disease in the world. Once a blood vessel is blocked by a blood clot, brain cells die immediately within seconds. 2 million brain cells die every minute after a vessel has been occluded. Thus, time is really of great, great concern. That's why with a stroke, time lost is literally brain lost.

SONAS, which stands for 'stroke or not a stroke', is a portable, battery-powered device, which measures the blood supply of the brain in both brain hemispheres simultaneously, but separately.

Its main application is to be found just after the occurrence of a stroke, during the pre-hospital phase or during transportation to the hospital.

Use cases for SONAS

The risk of death due to strokes is often determined by the fact that patients are admitted to a hospital but not to the right one.

Confirmation that a patient has a brain hemisphere where the perfusion is diminished might cause the first responder or a doctor to think about transporting that patient to a specialized hospital instead, where stroke therapy and treatment can be administered.

The device can also be used anywhere that an EKG machine would be similarly used to detect heart attacks, such as in the ward, retirement home, rehabilitation center, or general practitioner's clinic, where there might be patients who have developed stroke symptoms. These patients' caregivers will want to know whether the patient's symptoms are related to large vessel occlusion as opposed to something else.

Other SONAS features

SONAS has a high safety profile because it is a very low energy device. It is remarkably cost-efficient too - the device at launch will not cost more than \$1,000 to \$2,000 total.

It also comes with wireless capability, which will allow data from the device to be transferred immediately to the cloud for analysis. A report can then be generated and sent to a mobile phone or other devices, so it is also easy to use.

And because SONAS is portable and battery-powered, it can be used everywhere, making it very useful in remote areas where there is no access to MRI or CT scanners.

Innovation for All: Progressive Solutions Ensuring Healthcare Availability

Multidimensional Genomics and Smart Medicine



Dr. Wei Zhou
Founder, President & CEO
Centrillion Technologies

EXECUTIVE SUMMARY

- Gene analysis has now become commercially accessible on a large scale
- The volume of genome analyses is set to soar in the coming two years
- Centrillion Technologies has partnered with WeDoctor in China to bring genomic analysis tools to the masses, taking gene analysis into the mainstream

Centrillion Technologies was started to make DNA chips for multi-dimensional in situ biomolecule sequencing analysis, detecting DNA, RNA, and protein. This became their first product for mass genomics.

Their DNA chip is now in its third iteration, and differs significantly from their first and second generation chips. The first generation chip used a form of orthography, but it was very early technology, so it did not have very high quality probes or sensors.

The second generation chip corrected that problem. The probes synthesized very well, but they were synthesized in tubes and there were limitations in terms of how many probes can be used.

The third-generation chip now utilises a more advanced form of orthography, and has also improved upon the chemistry so that probes can be synthesized more accurately.

Genomic analysis services soon to be available in China's neighbourhood pharmacies

In the US and in China, consumer genomics have begun to take off. In the US alone last year, more than 5 million genomes have been processed. Centrillion estimates that 10 million samples might be processed in the United States this year, but lags behind the number of samples taken in China which has already surpassed millions and is predicted to breach the 10 or 20 million barrier sometime soon.

The company manufactures its chips in two labs: one in Taiwan and one in Guangzhou. There are even bigger labs under construction in Guangzhou and they will be finished in about two years.

Centrillion also does not market consumer generic products direct to consumers, but uses distributors instead. The company runs the tests while its distributors take on the role of selling their services to consumers.

Centrillion's recently announced partnership with WeDoctor Holdings Limited, China's leading technology-enabled medical and healthcare solutions platform, features a strategic cooperation agreement that includes a multi-million US dollar investment by WeDoctor.

The two companies will jointly undertake to provide Centrillion's most advanced DNA chips and genomic analysis services to WeDoctor's 2,700 hospitals, 220,000 leading doctors, 15,000 pharmacies and 27 million active monthly users.

Innovation for All: Progressive Solutions Ensuring Healthcare Availability

Intelligent Baby Monitor to Track Your Baby's Safety & Wellness - Anywhere, Anytime



Mr. Pavan Kumar
Co Founder & CTO
Cocoon Cam

EXECUTIVE SUMMARY

- Cocoon Cam is the first baby monitor in the world powered by artificial intelligence
- Parents can gain historical insights into their baby's sleeping patterns and more
- The technology is being proposed to augment traditional hospital intensive neonatal care

Cocoon Cam uses computer vision and artificial intelligence for remote contactless health monitoring. The company has built, using computer vision, the first ever AI powered baby monitor. It is a regular camera that can be placed on top of a baby crib, and uses computer vision to monitor the realtime breathing and sleeping patterns of the baby.

IRB-approved studies were performed at Stanford University, where the technology has been proven to be over 95% accurate compared to medical devices used in neonatal intensive care that cost \$30,000.

Before they even released a product to the market, however, Cocoon Cam conducted extensive beta tests and collected over 50 million hours of videos from infants in their natural sleep environments, proving that their algorithms can work no matter which position or where the baby is sleeping in the crib.

Cocoon Cam's baby monitors have also recently received approval by HSA and FSA in the US, so Americans can now buy Cocoon Cam baby monitors via their insurance.

How do the baby monitors work?

Neural networks are used for face detection and baby pose estimations, and algorithms for detecting breathing movements. Parent interventions are also measured, so it is possible to know when exactly the baby was put in the crib and how long the baby took to fall asleep.

Cocoon Cam's predictive analytics can even alert parents five minutes before the baby wakes up, so that they can be ready to go and take care of the baby.

In terms of vital signs, Cocoon Cam monitors can measure heartbeats by detecting minute skin color changes to get remote EKGs. Infra-red is used to derive body temperature from 5 or 10 cm away. The company is also looking at deriving systolic blood pressure, which is actually pulse transit time, using just cameras.

All of this data is collected and delivered via a user interface suitable for tired parents, which is also a portal for accessing each device's archive of historical insights.

Bringing AI baby monitoring technology to the neonatal ward

With clinical trials under their belt and FDA approval in the pipeline, Cocoon Cam is also currently looking at applying their technology to neonatal intensive care, where a lot of false alarms are produced. It is hoped that their advanced technology will serve as an alternative source of information to augment medical devices currently used in neonatal intensive care wards.

Innovation for All: Progressive Solutions Ensuring Healthcare Availability

Distributing Patient Data: The Role of Blockchain in the Future of Healthcare



Ms. Alexandra Eavis
CEO
Dovetail Lab

EXECUTIVE SUMMARY

- Dovetail Lab facilitates access to and use of silo'd data between different systems
- This reduces the massive administrative burden of managing many systems and data sets
- Blockchain technology is applied to ensure security and integrity of the data

Access to timely and accurate data saves lives. Dovetail Lab facilitates data sharing between different electronic systems, without requiring any changes to each party's systems. Every party is able to continue using their system of choice, whether that's patients using their health app of choice, where their personal health records are stored, or a hospital's electronic health record systems.

Patient consent is obtained to drive the data sharing between platforms. Once a patient and the practitioner has been identified and verified, blockchain technology is used to register the content, consent, shared data structure, and entire data exchange, giving assurance that the data is never altered, delayed, or lost.

Blockchain solves three challenges with five key benefits

Dovetail faces three challenges: the first being interoperability – that is, achieving data sharing without having to force every party to use the same system. Their second challenge concerns easing the immense administrative burden that comes with managing many silos of data and multiple datasets. Their third challenge is data protection.

Blockchain technology has some qualities which make it ideal for addressing the final challenge. The first is its ability to ensure data integrity, which means that data

cannot be corrupted, modified or destroyed. Blockchain gives the assurance of non-repudiation, which allows for tamper-proof permanent records.

Plus, the cryptography and the decentralized structure of blockchains makes them much more secure than centralized databases.

Next, blockchain technology's consensus model protocol promotes data non-repudiation, where every computer in the network has to agree that the data is valid.

The fourth quality is blockchain's innate ability to maintain confidentiality, which is important to ensure sensitive information is not accidentally disclosed. And finally, blockchain technology ensures that all the data is always available across every single network.

Bringing the product to market

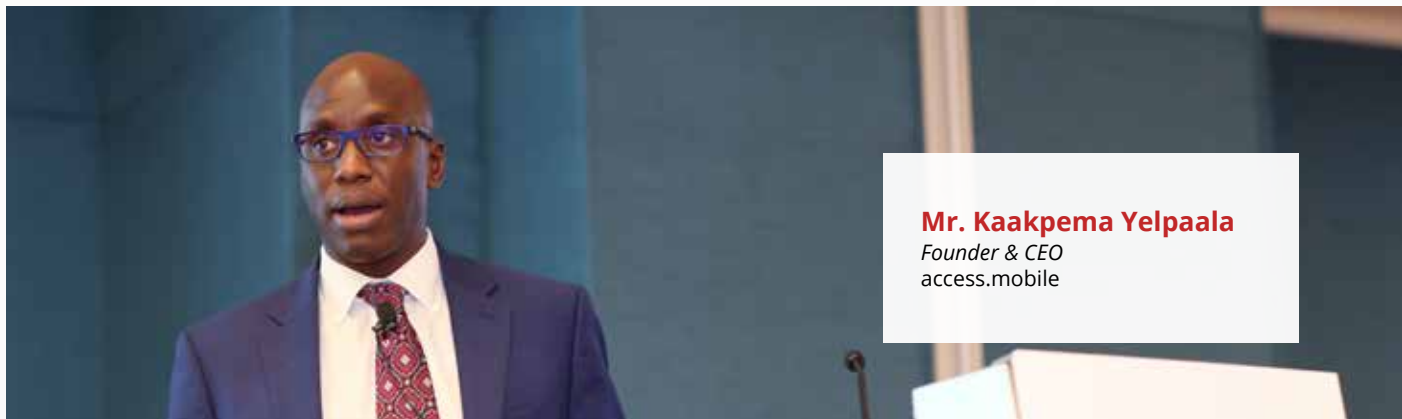
Dovetail is just about to start a trial with patients which is being funded by the NHS in the UK. This is part of a new integrated care system: a population health model centered around type 2 diabetes.

In this trial, Dovetail will connect data from many different members of a multidisciplinary team - private practice, public GP records, patient-facing applications, and charities providing education courses for diabetics - to create a virtual shared health record between all the different parties.

They have also already completed deep level integration with a big electronic health record provider that is the UK's biggest health technology company, providing them with the ability to access 60% of patient data in the UK.

Mass Customization: Customized Solutions Serving Largescale Problems

Solving Local and Scaling Global: The Role of Intelligent Engagement in Patient-Centered Care



Mr. Kaakpema Yelapaala

Founder & CEO
access.mobile

EXECUTIVE SUMMARY

- High smartphone penetration and AI make it possible for access.mobile to help providers continue patient care outside clinic or hospital settings
- These personalised interactions help increase patient engagement and outcomes, while reducing costs
- Globalising personalised patient interaction requires consideration for individual local contexts and environments

Most healthcare needs are oriented around things that happen when patients are not at the doctor or the hospital. What access.mobile tries to do is transform the relationship between patients and their healthcare providers by helping providers communicate the things patients need to know when they aren't visiting their doctors.

For example, a patient who has diabetes type 2 requires regular appointments to see his doctor, test his blood, and get blood lab work results. access.mobile provides software that sits on top of all of this data, which can access not only the patient's clinical records, but also things concerning his context: where he lives, his socioeconomic status, and other data that he self-reports.

Based on all this data, access.mobile uses artificial intelligence and chatbots to automate conversations and communications, giving that patient higher levels of engagement, to allow him to be more proactive about his care.

Going from global to local

However, healthcare is very localized, and different environments require expectations to be adjusted. When access.mobile began thinking about contextualising provider communications through software, they realised that they had to understand their patients' environments so that what is communicated can be relevant to the patients at a personal level and in their local context.

This space is where localization happens, and involves not just attention to scaling but the need to keep things relevant to individuals.

Certain markets can have surprising similarities, however. access.mobile has found that US populations have very similar characteristics to populations in Africa, because like Africa, the US is very diverse, highly multicultural, and also has high levels of income inequality. Hence, similar strategies for engagement in the African context, though counterintuitive, appear to work in the US context.

Mass Customization: Customized Solutions Serving Largescale Problems

Utilising 'Unclaimed Money' in the Health Insurance World for Prevention



Ms. Rosaline Chow Koo
Founder & CEO
CXA Group

EXECUTIVE SUMMARY

- CXA is an insurtech (insurance technology) company and insurance broker that is integrating data-driven insights into health insurance
- For the first time, employees can decide on how much of their premiums to put towards coverage, versus wellness or early disease detection and prevention programs
- CXA's data is being used to drive research into the benefits of incentivising preventive healthcare

CXA Group is an insurance broker that has created a digital platform that can collect employees' personal data, claims data and health data, and show them their risk of chronic disease, while connecting them to providers who can help them, such as nutritionists and weight management, sleep, mental wellness, diabetes management, hypertension, and smoking cessation specialists.

Employees are issued a free wallet from which they can pay for these services, and those who improve their health can be rewarded with more dollars in their wallet.

Companies benefit because it migrates them to a fixed predictable budget. Instead of a premium increase for additional coverage, companies can decide to put a portion of the premium into each employee's wallet. Employees can individually decide how much insurance they really need, and whether they should shift any excess into early detection and disease prevention programs.

This enables companies to use their existing health insurance spending to not just pay for the right amount of insurance, but also for prevention programs, at the same premiums they used to pay.

Big data to drive big gains in disease prevention

CXA can also provide human resources departments with anonymized aggregated data, so that employers can not only focus on healthy employees, but also try to help their at-risk and unhealthy employees. Its data-driven insights can show whether companies should bring in diabetes, smoking cessation, healthy eating, or weight management programs, and help companies focus their interventions on where they can make the biggest impact.

CXA is currently conducting trials with some of their clients in which they attempt to correlate whether better health for employees results in lower absenteeism, higher performance and higher engagement. The trials are based on CXA's data analytics which utilise the massive amounts of data that flows through their platform. It is also running diabetes trials with multiple employers, where insurers undertake to waive diabetes coverage if the employees can reverse their diabetes.

Additionally, as an insurtech company, CXA has automated and digitized every single step of insurance. Today, CXA is not only the appointed insurance broker for 600 companies across 20 countries, it has also white-labeled its platform for large banks' and insurers' own enterprise clients, so that even small and medium businesses can take advantage of their technology.

Mass Customization: Customized Solutions Serving Largescale Problems

Saving Lives in Critical Care



EXECUTIVE SUMMARY

- Ventilators are vital, common hospital equipment that have not changed in over five decades
- They are a common source of hospital-acquired infections worldwide
- VAPCare applies modern technologies and insights to reduce patients' risks of acquiring VAP

Ventilator associated pneumonia (VAP) is one of the most common and the most critical hospital acquired infections one can get. In India alone there are more than 600,000 patients a year who will get this infection, and usual rates across the globe are somewhere around 20 to 30 percent. Any patient who goes on a ventilator has a 30 percent chance of infection.

Coeo Labs, a company focused on making lives better, has created the VAPCare system, which introduces an entirely new dimension to airway management and oral care.

VAPCare is the first system of its kind. With intelligent secretion and oral hygiene management, it provides targeted suctioning of the secretions in the airway. The device consists of a control and sensing unit with custom disposables to attach to it. The custom disposables can fit over any standard endotracheal tube or CASS endotracheal tube without extubating or disconnecting the patient from the ventilator.

The disposables provide additional channels to remove secretions from the oral, oropharyngeal and the subglottic region. The system continues to remove the secretions sequentially from the three locations until the sensor box detects an absence of secretions, thereby minimizing pooling of secretions, lowering chances of aspiration in the patient and reducing the risk of acquiring VAP.

Next-level airway management

In addition, the device maintains oral hygiene by sprinkling fluid across the oral cavity through a specially designed channel in the disposables and simultaneously suctioning it from all three locations. A physician can set the frequency of suctioning, lavage and the suction pressure in individual lines based on the patient's clinical condition. It can also detect and remove port blockage by increasing suction pressure intermittently to maintain the patency of all the channels.

VAPCare has been put through a clinical trial which had its results published by the Medical Thoracic Society. To date, more than 50 patients have used VAPCare and none of them acquired VAP. VAPCare has attained CE certification and regulatory-approval in India, and Coeo Labs is now looking for partners who can help them bring the product to markets outside India, specifically East and Southeast Asia.

Entrepreneurship & Innovation Tracks



Entrepreneurship & Innovation Tracks



Day 2 - Opening Keynote

The Four Pillars of Healthcare enabled by Technology – The Story of WeDoctor



Mr. Jerry Liao
Founder & CEO
WeDoctor Group China

EXECUTIVE SUMMARY

- WeDoctor connects doctors, patients, medical systems and medical payment systems
- Artificial intelligence can help community hospitals to raise their standards
- All patients, even those in rural areas, may soon be able to book appointments, receive outpatient services, make payments and even buy and receive medications at home

China faces three challenges in delivering healthcare. First is the high asymmetry between its number of patients and major hospitals. The second is the very low efficiency of China's healthcare services. The third challenge is the imbalance of care standards throughout China. Also, in China, it is very expensive to see a doctor because medical costs are very high.

WeDoctor began trying to meet these challenges by using advanced technology to improve medical efficiency. By connecting the four pillars of healthcare - doctors, patients, the medical system and medical payment systems - and by utilizing artificial intelligence, it hoped that the standards of medical care offered by major hospitals can be duplicated in other hospitals. This way, more doctors in community hospitals would be able to provide medical services similar to that of the big hospitals.

8 years of connecting healthcare

Over the last eight years, WeDoctor has achieved a lot. Today in China, more than 2,700 large and medium hospitals are connected to WeDoctor's platforms, including hospital payment systems. The hospital platforms have also been extended to a mobile app for patients. Currently more than 160 million patients are registered on the platforms, and, because doctors are now connected by technology to the

patients, it doesn't matter where the doctors are located.

Every day more than 1.5 to 1.6 million patients utilize WeDoctor's online services. More than 2 million doctors are able to provide services to their patients through the platforms daily. Their service sees 80,000 outpatients every day, and the number of appointments made amount to 100,000 per day. Every year, that translates into savings in waiting time that comes close to 20 million working days. Patients are now able to utilize all the saved time to provide themselves with a better life.

The next phase: payments, treatments and medication in place

In 2016, WeDoctor launched a new platform in Sichuan province which allows patients to actually get medical services, make payments, and receive their medication in the comfort of their own homes. In the next two years, most parts of China will be able to enjoy similar systems.

In the near future, WeDoctor aims for more than 50% of healthcare to be delivered in the comfort of patients' homes, more than 35% to be completed from community hospitals, and only 15% of healthcare to be performed in major hospitals.

The need to travel for treatment would then be reserved for people who live in remote areas, who do not have the option of visiting healthcare facilities near them.

Day 2 - Opening Keynote

The road to "Healthy China" - Development of Big Data Healthcare & Medical Industry



Prof. Han Demin

Chairman

China International Exchange & Promotive
Association for Medical and Healthcare

EXECUTIVE SUMMARY

- Big data and artificial intelligence are key to China's healthcare strategy
- Advanced technologies will be trickled down from medical specialists to general practitioners
- Insights and experiences will be shared with countries along the Belt and Road

In the Healthy China 2030 plan, China introduced what they call the National Development Plan for People's Health Information. In other words, China intends to use big data and artificial intelligence to provide medical treatments and to help their people keep healthy lifestyles.

China will also be using this plan as the basis for the development of their medical sciences, and has already developed many applications for electronically filing health records, medical histories and other related data. China considers these technological initiatives of great importance because of its overwhelmingly large population.

Big data, big impact, big populations

Big data has had an outsized impact on the world so far, and health big data in particular is one of the fastest developing industries in China. China's own big data market is seen as instrumental in helping China to satisfy its healthcare challenges, and better manage its healthcare systems. China is hoping to develop better communications between providers and patients, as well as truly intelligent artificial intelligence through its shared platforms.

China also wants to share its experience with other countries, especially countries in the developing world. It will be aiming to learn lessons from the developed world as well to help in the development of China's healthcare industry.

One Belt, One Road, One Health Platform

As part of the One Belt, One Road Initiative, China will be sharing its experiences and technologies in the medical industry. One new model of service that the country wants to eventually bring abroad is called 'Hua Tuo'.

There are three aspects to Hua Tuo. Firstly, it can be used to spread advanced medical technologies downwards to general practitioners as a whole. Secondly, health records of China's entire population can be collected and integrated into one big data pool. Thirdly, it will promote the use of traditional Chinese medicine. To this end, Hua Tuo is composed of three platforms: a medical platform, a technology platform, and also a financial support platform.

The Future is Now - Digital Disruption for Better Healthcare

Building an Evidence Base for the Future of Genomics

**Dr. Robert C. Green, MD, MPH**

Director,
Genomes2People
Professor,
Brigham and Women's Hospital &
Harvard Medical School

EXECUTIVE SUMMARY

- Genetic profiles are not yet popular today because of certain preconceptions surrounding their usage
- Studies have found that people who received their own genetic profiles are more likely to take preventive action, while useful, actionable information has been extracted from mass genetic profiling, and medical costs have not gone up for people who asked for and received their genetic profiles
- Hence the prejudices surrounding genomics use have largely proved to be unfounded.

Genomics has been around for quite a long time. Many people have asked, "Why aren't we using this in our day to day health care today?" Why don't doctors say, "Here's your genome. Let's talk about how it influences your health."

There are four main reasons: the fear that genetic information is toxic, the fear that there's just too much information to handle, the fear that healthcare providers might completely misunderstand genomic information, and the fear that the harms and costs simply outweigh the benefits.

Genomic information not toxic, not unusable

Is genomic information toxic? The Genomes2People Research Program conducted more than four separate trials, using randomized clinical trial methodology and involving over a thousand individuals, on the impact of knowing that they had a genotype that increases their risk of Alzheimer's Disease. The studies found no difference in overall distress. People who learned they were at risk tried to exercise, take vitamins, and help themselves.

Another project called the MedSeq Project was performed. In it, several hundred people had their genomes sequenced.

One page reports were created and doctors trained to read them. Researchers found that primary care doctors who had never done genomics in their life, were actually able to use these reports.

Genomic information has practical, accessible use cases

The Genomes2People Research Program also found that 92% of people are carrying at least one carrier or recessive condition and that 80% of people will be exposed in their lifetime, to a medication which has a genetic association with side effects. With this information, the program concluded that polygenic risk can be assessed, and that risk curves can be computed for everyone.

The program, and others like it, has shown that people who get personalised genomic information will do something about it. The studies have been able to demonstrate that healthcare costs are not significantly different between those who volunteered to get sequencing, and got it, versus those who volunteered to get sequencing and didn't get it.

In short, disclosure of genetic information creates preventive behaviour, and there are many benefits from genomic studies that have found practical uses. Healthcare providers are able to understand and use genomic information, and so it is possible to say that the fear of harm and cost of genetic information outweighing its benefits is unfounded.

The Future is Now - Digital Disruption for Better Healthcare

Robotic Futures



Dr. Catherine Mohr
Vice President
Intuitive Surgical

EXECUTIVE SUMMARY

- Recent advances in robots have resulted in the possibility of incision-less lung biopsies
- Digitized data from robotic surgery, AI and data links mean that surgeons can now be trained remotely
- The challenge of training ever more surgeons can now be solved through technology

Although laparoscopy was introduced in the eighties, there wasn't a huge penetration of minimally invasive surgery into the very complex parts of surgery. But along came the idea that robotics could be combined with small camera chips, and do a lot more with small incisions.

That, in a nutshell, is the Davinci. The surgeon sits at a console and manipulates an instrument which follows every single movement that that surgeon is making. The instrument goes inside the body, superimposed on where the surgeon sees his hands to be, and is precise enough to give him the ability to repair a heart valve from the inside of the heart.

Today, there are surgical robots that have multiple entry points, robots that are tailored for general surgery, and single port robots. The single port robot brings all the instruments together in a little cluster, and the instruments then spread out inside the body so that surgeons can work towards a central point and do a dissection. The robot can pivot around so that surgeons can work anywhere within the abdomen.

Latest advances in robotic sensors

A new technology that has come out recently is shape sensors. These are glass fibers that can measure spaces within the body and be positioned to within millimeters and degrees. They allow robotically controlled catheters to perform deep exploration all the way out to the alveoli in the lungs, creating the ability to biopsy lumps without the need to first make incisions.

Additionally, by placing a robot between a trainee's hands and a patient, or between a master's hands and a patient, surgery can be digitized. This enables surgery to be turned into data, which means artificial intelligence tools can be applied. These tools include robot-to-robot remote mentoring, which allows expert surgeons to mentor junior surgeons over a real time data link, helping meet the rising demands of training new surgeons.

The ability to gather and inject data for better training, using platforms that allow communication of this nature over long distances, will not only lead to better outcomes for individual patients, but influence the way healthcare systems are built in future.

The Future is Now - Digital Disruption for Better Healthcare

Redefining Healthcare Innovation



Mr. Navi Radjou

Fellow
Judge Business School University
of Cambridge

EXECUTIVE SUMMARY

- Frugal innovation in healthcare is the result of a frugal mindset
- The focus is on delivering the same results or meeting new goals, at a fraction of the current costs and resources
- The frugal mindset requires changes to conventional models of patient care delivery

Frugal innovation is a disruptive approach to creating more value while managing scarce resources. Value in this context simultaneously means economic value, social value and environmental value. It has a moral dimension. At the same time, entrepreneurs and innovators have to learn to minimize scarce resources, resources such as energy, capital, and time. Time of course is of essence because there is going to be an explosion of debilitating chronic disease around the world.

Frugal innovation is what happens when innovators come up with a solution that delivers 100 times more value, using 100 times fewer resources.

For example, Embrace is a portable infant warmer designed like a small, mini sleeping bag. Inside, there is a wax-like material which when placed on a heating pad, melts and can keep a baby at constant temperature for six hours straight.

This simple solution costs only \$200: 1% of the cost of an incubator. It has added value as well because the mother can actually hold her baby while it is being used, which is important not only for the physical survival of the baby but for its long-term emotional wellbeing.

This simple solution has saved the lives of 250,000 babies, and is on track to save one million babies in the next five years.

Three principles of a frugal mindset

Creating frugal innovations like this means choosing to prioritise certain attributes: affordability, simplicity, economic, social and environmental sustainability, uncompromising quality, and lastly, purpose. All these have to serve a larger purpose, like saving lives and maximizing joy in the world. Together, they form a concept known as a 'frugal mindset'.

The first principle of a frugal mindset is prevention is better than cure. The second principle requires innovators to focus on not reinventing the wheel, but instead reusing and recombining existing hardware and software technologies. The third principle of a frugal mindset concentrates on changing the way we look at patients, who today are still seen as a passive recipients of care.

With a frugal mindset, healthcare innovations can truly be disruptive even while using very little of the world's scarce resources.

The Future is Now - Digital Disruption for Better Healthcare



Day 2 - Lunch Keynote

Healthcare Perspectives in the Global Economy



Dr. Victor Fung
Group Chairman
Fung Group

EXECUTIVE SUMMARY

- Digital health is going to be essential for cutting healthcare costs and delivering universal healthcare
- A new paradigm based on untried technologies and financing is needed to reduce global inequalities of access to basic healthcare services
- A self-enrolled One Belt One Road universal healthcare alliance can be the starting point for global universal healthcare

Universal healthcare for everyone is still in the distant future. Right now, only about half the world's population is covered, leaving billions without access even to basic healthcare services. Money is scarce, and governments do not have the resources to provide needed services indefinitely.

Therefore, to provide universal health coverage on a sustainable basis, a new paradigm that is based on a completely new mindset has to be designed, based on technologies and financing that have not been tried and tested before.

The summit's keynote speaker for Day 1, Mr George Papanderou, has outlined some interesting initiatives that could help abate the rising healthcare costs and improve access to healthcare globally. Digital health can serve as another option to achieve these goals. According to McKenzie, digital health has the potential to cut healthcare costs by an estimated 7 billion dollars a year in the United

States alone.

Other summit speakers have also mooted the idea that the world needs a new multilateral system built on a new social contract, which is an idea that carries great merit. A new social contract can begin to address the most important and fundamental aspect of inequality in the world: access to affordable healthcare.

Perhaps healthcare can be used as a fundamental building block to build people-to-people connections, and begin inclusive growth that really addresses some of the blatant inequalities in the world today. Eventually, this may lead to a new global social contract and to the updates to our multilateral systems that the speakers have alluded to.

Developing a new global social contract based on healthcare

One way to kickstart a new paradigm shift is to consider forming a new, self-enrolled One Belt, One Road universal healthcare alliance. With this alliance, healthcare can be made more accessible to people along the 65 countries of the Belt and Road, which comprises two thirds of the world's population.

This initiative could be even an opportunity for people with diverse interests, governments, NGOs, and the private sector, to come together and develop together.

As such, the One Belt, One Road universal healthcare alliance is a platform for the future, and is something that is worthy of due consideration.

Day 2 - Lunch Keynote





Total Wellness - Holistic Wellness for Mind & Body

Ayurveda: The Original Lifestyle Medicine



Dr. Suhas Kshirsagar

Founder & Director
Ayurvedic Healing Inc.

EXECUTIVE SUMMARY

- Ayurveda is an ancient system of traditional practices and wisdom aimed at helping people live happy, healthy lives
- Sleep, diet and their correct timing have important roles in Ayurveda medicine
- Education in Ayurveda can empower people to take charge of their lifelong well-being

There is a need to change discussions in conventional healthcare from talking about the causes of disease to talking about the causes of health. It is this wisdom and tradition that Ayurveda is primarily concerned about.

Ayurveda is one of the most ancient and comprehensive systems of health care known to humanity, dating back to 6,000 years ago. Ayurveda is all about the environment, and the body's response to it in terms of physiological and biochemical changes as people go through life.

According to Ayurveda theory, genes are like loaded guns, and it is our lifestyles which pull the trigger - about 70 to 90 percent of the chronic diseases are due to the way we live our lives.

Ayurvedan nutrition, exercise and rest for balanced lifestyles

Eating close to the source is important in Ayurvedan nutrition, but it is equally important to make sure that you are able to digest those foods properly. So, eating right at the right time, is very important.

It is also important to realise that exercise and sleep feed off each other. If people are pleasantly tired, then they will get a good night's sleep. When they then wake up at a proper time in the morning, it resets their bodies so that they have enough energy to function throughout the day.

If people are able to break the jinxes of eating late and sleeping late, they will be able to not only fully lose and normalize weight, but also improve their quality of functioning and the vibrancy of their physical and emotional health.

Ayurveda: a model for attaining good health and lives

With Ayurveda, we will be able to pay attention to how we are leading our lives and whether we are making the right kind of choices for good health to happen.

Getting there is a matter of education. That education has to be empowering, personalized, and take place at an individual level so that everyone can understand how to empower themselves to participate in their own health and wellbeing.

Total Wellness - Holistic Wellness for Mind & Body

Generation Rx and the Health Crisis Happening in American Families



Ms. Robyn O'Brien

Founder
AllergyKids

EXECUTIVE SUMMARY

- The United States has an unprecedented rate of food allergies versus other countries
- This might be because the safety of food produced in the United States has been compromised by the use of genetically modified crops and artificial growth hormones
- The United States should have a more participatory food system, and stands to benefit from adopting the food production practices used in other countries

In the United States, the rate of food allergies is 35%, versus 20% in other countries. If you move to the United States, your likelihood of developing a food allergy increases, and today in the United States at least two children in every classroom has a food allergy: 1 in 13 kids.

Additionally, from 1997 until 2007, there was a 265% increase in the rate of hospitalization relating to food allergy reactions. 1 in 3 children in the United States now have what is referred to as the "Four A's": allergies, autism, ADHD, and asthma.

Not only that, the United States has seen a 400% increase in food allergy insurance claims, and it is not just children who are affected. 66% of those food allergy insurance claims are people over the age of 18. Across the board something is happening which is making Americans increasingly allergic.

Artificial hormones, genetically engineered crops, and (lack of) food labelling

America fundamentally changed how it produced food in the 1990s. In 1994, Recombinant Bovine Growth Hormone (RBH) was used to help their dairy cows produce more milk. America remains the only developed country in the world to introduce this growth hormone into its dairy cows and into their food supply. No other developed country adopted the use of RGH.

On top of that, in the mid-1990s, genetically engineered crops were also introduced into the food production system.

Moreover, American food labelling practices do not require the presence of these foreign proteins to be disclosed. Consumers have no way of telling whether their food contains foreign proteins. Thus, America's food production system has managed to avoid accountability, traceability, and liability.

To change this situation, Americans will need to become better informed as consumers, and participate in their food production system in ways that they haven't before. The American food production system also has much to learn from other countries, and the solutions that they have for improving America's food production practices.

Total Wellness - Holistic Wellness for Mind & Body

Chinese Medicine for Mind and Body Wellness



Dr. Mao Shing Ni

*Co-Founder & Professor
Yo San University*

EXECUTIVE SUMMARY

- Western medicine is fragmented, episodic in nature, and lacks patient education and empowerment
- In contrast, health-coaching, or life-coaching, is an essential element of Chinese medicine
- Empowering and educating people to take charge of their health is the missing link needed to make people healthier today

Yo San University is a Chinese university that teaches Chinese medicine, and the Tao of Wellness is a center for acupuncture and integrative medicine that has clinics throughout Southern California.

Together, they provide over 50,000 treatments a year. Although they practice Chinese medicine, what they deliver is actually evidence-based medicine - albeit an ancient, 5,000 years old form of it. Today, close to two billion people use Chinese medicine or indigenous medicine around the world.

Chinese medicine is notable for its ideological contrasts to Western medicine, which is interventionist and uses medicines with many side effects. The world's reliance on the Western medicine model of health has resulted in a fragmented and problematic approach to medicine today.

Most pertinently, Western medicine does not empower its patients to take care of themselves. There is a lack of patient education on the best health prevention practices, and change is needed. That change can come from understanding the different approach that is used in Chinese medicine.

Enumerating the holistic nature of Chinese medicine

Chinese medicine has five branches: diet/nutrition, herbal medicine, the practice of qi-gong, tai chi and meditation, acupuncture, and coaching. This last process of health-coaching is the missing link in Western medicine today.

In Chinese medicine, the person is treated, not just the disease. Chinese medicine aims to assist and help the body along its healing path. The message of Chinese medicine is this: the body has amazing self-healing abilities.

Empowering the body and patients to self-heal means educating them about the importance of eating well, exercise, and all the things they can do to help themselves.

By empowering self-care and personal responsibility, patients can be enabled to actively pursue their best level of functioning and balance their body, mind and spirit through good diet and nutrition, regular exercise, bodywork, and mind-body practices.

Total Wellness - Holistic Wellness for Mind & Body



Quality of Life - A New Era of Health Longevity

How face-to-face contact can make us healthier



Ms. Susan Pinker
Psychologist & Author

EXECUTIVE SUMMARY

- Close relationships and social integration are strong predictors of mortality
- Face-to-face contact – “the village effect” – is an antidote to the ills of modern living
- In-person interaction should be designed into healthcare systems and as part of overall healthcare strategies

“When am I going to die, and how can I put that day off?” Julianne Holt-Lunstad is a social scientist at Brigham Young University in Utah in the United States, and she addressed this very question with a series of ongoing studies involving tens of thousands of villagers.

She found that while the second strongest predictor of mortality was how many close relationships a person already has, and how strong they are, the strongest predictor of all was social integration.

This refers to the relationships that people have with the people they meet throughout their days: colleagues, neighbours, not-so-close friends, the people that they may play cards with, or maybe the postman and the person from whom they buy the daily paper.

We also know from Joan Silk’s work that female baboons with at least three close female friends live longer with less stress and more surviving offspring. These in-person friendships create a biological force-field against disease, inoculating them and us, not just against illness, but loneliness, psychological distress, and physical decline.

Face-to-face contact protects and prolongs life

The protective power of face-to-face contact is why there are the lowest rates of dementia in people who are socially engaged in person. It is why women who have breast cancer with tight, in-person social circles are four times as likely to survive that disease. And it is why many who have had a stroke who meet with friends for coffee or to play cards, are better protected by social contact than they are by medication.

There’s a mountain of evidence showing face-to-face interaction provides tangible benefits, but how can policy makers introduce more face-to-face interaction to reap its benefits?

The answer is designing in-person interactions into our education systems, healthcare systems, business meetings, and agendas. This bolsters the immune system, sends feel-good hormones surging through our bloodstreams and brains, and boosts our resilience.

This is called the “creating a village” effect, and building and sustaining this village is a matter of life and death.

Quality of Life - A New Era of Health Longevity

Caring for the Elderly



Ms. Meena Ganesh

Co-founder, MD & CEO
Portea Medical

EXECUTIVE SUMMARY

- Elderly or sick care often takes place in the home setting, for the long term
- This form of care not only requires training, it requires compassion
- Getting care to people at the right time and place is important, but getting carers with the right attitude is equally important

Portea Medical's primary objective is to provide a platform by which care can be provided to people at their convenience, and at the place that they want it. A big part of what they do is work with the elderly to help them get the care and support that they need, preferably in their homes.

Portea Medical has presence all over India in 16 locations. The company started in late 2014, and now has 4,000 employees, providing about 120,000 home visits every month.

Delivering care at the right time lowers overall healthcare costs

Each of us has different health requirements over our lifetime, and Portea Medical believes that being part of that and ensuring that care gets delivered at the right time at the most appropriate place is important. By helping people with care at regular times, and making sure that their illnesses or lifestyles don't get out of hand, the overall cost of care for the individual, as well as for the country, can be lowered.

There are however, some unique challenges when it comes to elderly care. Elderly care has to be delivered with compassion. Skills are important for caregivers, but just having skills alone isn't enough. Firstly, the carer needs to learn that elderly care is not just about doing a job skillfully, but actually trying to become part of the elderly person's household, making sure that the patient and family members are comfortable with them. This is such an important skill that it has to be taught.

Resilience and re-training key to elderly care success

Carers also have to learn how to deal with patients who are stressed because they have been sick for long periods of time. They not only have to make sure that the patient is cared for but also endure being continuously on-call and sometimes being shouted at by the family or by the patient. As time goes on, this stress becomes like a toxin that is built up, so carers are often given time off, and taught de-stressing methods to help them cope.

A lot of training is needed, and much of it needs to be repeated. Many carers have, after working for two weeks, said "It's just not for us." Recruiting the right people with the right attitude is therefore just as important as training.

Quality of Life - A New Era of Healthy Longevity

How is redefining healthy ageing going to redefine quality of life?



Mr. Colin Milner

CEO

International Council on Active Ageing

EXECUTIVE SUMMARY

- Retaining functional abilities at a high level is one way of defining active ageing
- The way we look at the older population is flawed and should be changed to recognise their innate potential
- Enabling elderly people to live the lives they want should be at the heart of medical practice

The World Health Organization has a new global framework for active ageing, which is concerned more about staying healthy and keeping people's functional abilities at a high level, and less about the absence of disease.

This framework addresses the raw reality that as human beings, our bodies are capable of more than we thought possible. How people challenge their bodies also drives how well they may age once we have incorporated socialization and all the other elements that influence health.

According to Mr. Milner, the executive director or director general from the World Health Organization has said that we must change the way that we look at the older population, that our thinking is flawed and there is instead all this potential within us. To change the way we age, we must change the way we view ageing.

Redefining active ageing as quality of life

To change the way we view ageing, healthcare leaders and professionals can do more than just speak to people about the medical side of healthcare. That's only one side of a conversation.

The other side is about enabling people to live the lives they want, whatever their ages. Whether it's as an artist, a photographer, or a marathon runner, we have to remember that staying functional as we age isn't just about staying physically active. It is also about retaining social connections, which helps us keep our cognitive abilities.

As we look for a new definition of healthy ageing, we should also look at how we can incorporate function into our practices and assess it throughout life.

When and how often we assess function in older populations, and how we can make these assessments into engaging experiences instead of a medical experience, will then become the next questions to tackle in the ongoing conversation about healthy ageing.

Quality of Life - A New Era of Healthy Longevity



Our Sponsors

Victor and William Fung Foundation



Victor and William Fung Foundation

Victor and William Fung Foundation was established in 2006 to commemorate the centenary of the Fung Group by Dr. Victor Fung, Group Chairman and Dr. William Fung, Group Deputy Chairman with their personal funds to promote leadership development, through scholarships, fellowships and educational programmes in partnership with universities, and thought leadership, through research and innovation, with think-tanks and tertiary education institutions.



The Fung Scholars Programme

The Fung Scholars Programme nurtures future world leaders through supporting university students to experience different cultures and environments early in their careers. The recipients of the Fung Scholarships are known as Fung Scholars (or Fung Fellows for the post-graduates) and they are chosen on the basis of their academic excellence and leadership potential. As of July 2018, the Fung Scholars Programme is established in 31 universities worldwide with more than 5,400 Fung Scholars. To maintain and energise the network of Fung Scholars and Fung Fellows, the Foundation organises an annual Leadership Conference as well as other activities.



Partners

The Foundation partners with universities, think-tanks and tertiary education institutions worldwide, including Harvard University, Massachusetts Institute of Technology, Princeton University, Conservation International from the US; Singapore Management University and National University of Singapore from Singapore; Oxford University and University of the Arts London from the UK; Koç University from Turkey; Asian University for Women from Bangladesh; The University of Tokyo from Japan; The Chinese University of Hong Kong, The Hong Kong Polytechnic University, The Hong Kong University of Science and Technology, The University of Hong Kong, The Fung Global Institute, The Asia Global Institute, The Youth Foundation from Hong Kong; as well as Nanjing University, Peking University and Tsinghua University from Mainland China.

Our Sponsors

WeDoctor



WeDoctor is an international leading medical and healthcare technology platform created by Jerry Liao and his team in 2010. With the mission of “Easy to see a doctor, Dignified to obtain health”, WeDoctor is committed to using science and technology to empower healthcare, driving the ecological upgrade of “medical insurance”, and creating an international leading HMO (Health Maintenance Organization) platform to provide its users with “Online+Offline, General+Specialized” new medical and healthcare services, becoming the safeguard of hundreds of millions of families.

WeDoctor started from Guahao.com, a registered network established in 2010. During its eight years’ development, WeDoctor pioneered a healthy community, organized a 7500 specialists team composed of academicians of the Chinese Academy of Sciences and Chinese Academy of Engineering and National medical masters, accurately matched doctors and patients and contributed to enhance the primary medical and healthcare capabilities.

WeDoctor created Wuzhen Internet Hospital, the nation’s first Internet hospital, and landed in 19 provinces and cities; WeDoctor cooperated with over 100 hospitals across the country and constructed medical partnerships, meanwhile it established 19,000 medical and healthcare service points covering WeDoctor Primary Care Centers, community healthcare service centers, and pharmacy clinics; through WeDoctor App and WeDoctor Link, the software and hardware terminals have made the full-time medical and healthcare services more accessible to hundreds of millions of families.

By the end of May 2018, WeDoctor has connected more than 2,700 hospitals and 240,000 doctors in 30 provinces and cities in China, setting up an integrated online-offline-general-specialized medical resources supply system whose real-name registered users exceeded 1.6 billion, cumulative services 580 million.

WeDoctor won investment from famous organizations including Tencent, China Development Bank, Fosun Pharma, Morningside Venture Capital, AIA Group, NWS Holdings and CICFH, etc. In the latest round of financing, WeDoctor had a valuation of US 5.5 billion dollar, becoming one of the most growing medical and healthcare technology companies in China.

*Investing
For Innovation
& Disruption*

IFC GLOBAL HEALTH CONFERENCE

March 25-27, 2019

Miami, Florida, USA

Early Bird Registration opens October 1, 2018

JOIN US

Now in its 8th iteration, the biennial IFC Global Health Conference is the premier private health event for emerging markets. The 2017 conference in Barcelona, Spain drew 500 delegates from 64 countries, 70 percent at senior executive level. As more governments pledge to deliver Universal Healthcare for their citizens and with a renewed emphasis on access, affordability, and quality, what does this mean for health systems of the future, and what opportunities does this present for the private sector?

The Miami conference will explore the latest innovations in building sustainable health systems. Topics include: expanded use of technology and digital health; new models of service delivery; improved access to affordable drugs; better utilization of the limited supply of health professionals; and harnessing Big Data to better plan and monitor. Please join us on March 25–27, 2019 to network and share knowledge on the investment potential offered by the private health sector in emerging markets.

ABOUT IFC

IFC (International Finance Corporation) is a sister organization of the World Bank and a member of the World Bank Group. IFC is the largest global development institution focused exclusively on the private sector in developing countries. IFC's committed portfolio in healthcare is \$2.2bn distributed across 106 projects in

Africa, Asia, Eastern Europe, Latin America, and the Middle East. IFC's debt and equity investments and advisory services span the full range of healthcare activities, including hospitals, laboratories, medical equipment, pharmaceuticals production, and retail pharmacy.

CONTACT US

Charles Dalton, Senior Health Specialist, IFC | cdalton@ifc.org
Chris McCahan, Global Lead for Health, IFC | cmccahan@ifc.org
Alexandre Oliveira, Chief Investment Officer (Asia), IFC | aoliveira@ifc.org

BEST BUSINESS MOBILE BANKING. INNOVATING FOR YOUR BUSINESS SUCCESS.



OCBC Bank
BUSINESS



ocbc.com/business-banking

OCBC Business Mobile Banking

OCBC Business Banking

What does it mean to be a pioneer?



It's that courage to leap into the unknown.

That constant thirst for a challenge. And we love a good challenge.

—— The spirit within us.

www.mitsubishicorp.com

Our Sponsors

About IDS Medical Systems Group



The IDS Medical Systems Group ("idsMED Group") is a leading integrated medical supply chain solutions company in Asia. It has a comprehensive distribution and value-add service network across Asia with access to over 10,000 healthcare institutions, including government and private hospitals, day surgery centres, specialist and primary care clinics, laboratories and nursing homes. idsMED represents over 200 global medical brands in equipment and medical consumables, with a focus on many specialty segments including Intensive Care, Infection Control, Surgical Workplace, Diagnostic Imaging, Patient Support System, Cardiovascular, O&G and Peri-natal.

Supported by a workforce of 1,600 employees including 700 highly experienced field medical and sales specialists and over 300 professional bio-medical engineers across the region, idsMED offers a one-stop solution covering marketing and sales, biomedical engineering services, clinical support, effective inventory management as well as logistics services. The idsMED Group is a member of Fung Investments.



idsMED Education & Training Academy

Continued medical education is one of idsMED's main priorities and key aspects in delivering added-value solutions and services. With a strong focus on healthcare education and training, the Group has also established idsMED's Education and Training Academy with state-of-the-art Education Centres to provide learning and development opportunities to the region's healthcare practitioners.

Apart from the Asian Healthcare Leadership Summit, which involves business leaders and healthcare professionals from the regional networks of the Group, idsMED also organizes regular country-based healthcare forums that facilitate local academics, healthcare professionals and practitioners as well as policy makers to network and conduct interactive knowledge and experience sharing on current medical affairs and issues in seminars and workshops. The idsMED Healthcare Forums have been held annually in Singapore, Indonesia, Vietnam and Malaysia and will continue to be rolled out throughout the region.



Expansion in Scope of Services

In recent years, idsMED has focused on developing new services to provide more value-added solutions to the healthcare industry. The Group has formed idsMED Servizi Plus, a joint venture between idsMED and Servizi Italia - a publicly listed Italian based company and leader in integrated services for hire, washing and sterilization for hospitals, to provide sterilization and wash-hire services in the Asia-Pacific region.

The Group has also partnered with WeDoctor, China's leading technology-enabled medical and healthcare solutions platform, to form a joint venture idsMED WeDoctor China Ltd, China's first smart medical supply chain solutions and procurement company. The joint venture aims to connect medical manufacturers and service providers with hospitals and care institutions in China to procure medical devices, consumables and services centrally.

Participants' Thoughts

Robyn O'Brien

*Founder
AllergyKids*

Your work, planning, kindness, intelligence and the beauty of Singapore are extraordinary.

From start to finish, I enjoyed every moment of the conference and being with all of you. It was an incredible event, with brilliant, thought provoking speakers. Not a detail was missed, and I will recommend the event to absolutely everyone for years to come.

Thank you for welcoming me with such grace and kindness. I truly did not want to leave. It was a wonderful experience!

Colin Milner

*CEO
AllergyKids*

The programming and the logistical arrangements of the event were top notch. Well done.

Meena Ganesh

*Co-founder, MD & CEO
Portea Medical*

Many thanks for ensuring that the conference experience was great. The arrangements and hospitality were great, and I thank all of you for the that.

I enjoyed the content of the sessions, and took away many interesting ideas.

Loved the entertainment as well.

Many congratulations for arranging an engaging and valuable event.

Navi Radjou

*Fellow
Judge Business School,
University of Cambridge*

I enjoyed my time at Asian Healthcare Leadership Summit: the logistics was masterfully handled and the content being presented was top-notch.

Kevin Caldwell

*Co-founder & CEO
Ossium Health*

The Summit was a terrific experience. Thanks you all for making it happen. It was truly an honor to attend as a speaker.

John Petrovich

*President & CEO
Alfred Mann Foundation*

I wanted to thank you and all the others involved for a spectacular conference. It was first-class from start to finish, I've never been to a conference where the attention to detail was so thorough. I can't think of anything now that I'd change, but if I do I'll be sure to let you know.

Thilo Hoeslcher

*Co-founder, CEO & CMO
Burl Concepts*

The AHL Summit was, in the literal sense, an eye-opening event !

In my past 20 years career as a clinician and researcher and I cannot recall being more motivated, more intellectually enriched after similar events. I came back to San Diego with numerous high impact contacts and introductions. Practically all of them are active as we speak and several phone conferences and meetings took already place. All of them foster our ambitions to enter secondary markets in Asia once we are ready to commercialize.

I am truly grateful for having had this unique opportunity.

Veronica Chew

*Chief Marketing Officer
Jana Care Inc*

Thank you for having Jana Care and me at the event!

The event was very professionally organized. The speakers are impressive topics were curated very well and covered wide range but relevant topics. Unlike some of the other large healthcare events I went to, I am very impressed by the quality of the participants and content of the events. Most participants that I interacted with were relevant and the interactions had prompted many ongoing follow-up discussions.

Ayman Salem

*Founder & CEO
Ikioo Technologies*

That was an incredibly organized meeting and it was a true honor for us at ikioo to be represented at AHLS. The only observation I have, is that for us entrepreneurs we learn a lot from each other, and I could not attend the other entrepreneurs presentations. I would recommend that the entrepreneur sessions would be staggered instead of simultaneous. I will watch the different entrepreneurs presentations of course, once they are available online.

Other than that, I was truly impressed by the tremendous effort, generosity and incredible attention to minute details by idsMED and INK teams.

www.ahlsummit.com