When Technology empowers Healthy Longevity

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Healthy Longevity

- Longevity is an age-old quest
- Physical Longevity is pegged somewhere between 125-150 years old for humans (given current assumptions)
- We are already racing towards our theoretical maximum

So, what is the **real** opportunity?
And how can Microsoft uniquely contribute?

It is all about Empowering Quality of Life

better experiences,
better insights,
and better care

Empowering every person
to achieve a more healthy, productive and happy life given the years we do have at any given point

Empowering every clinician
with cloud and AI tools to support healthy longevity while facing a critical gap between demand and supply

Empowering every researcher
to accelerate discoveries and deliver on the promise of precision health
AI enabled tools that speak the language of healthcare

- Conversational AI for medical triage
- Decision forests for automatic semantic segmentation of medical images—anatomy and pathology
- Cognitive speech services for medical documentation
- Cloud-scale machine learning to translate T-cells to antigens
- Predictive models of vision impairment and eye disease
- Machine reading of clinical documentation for trials matching
Empowering Healthier Longevity

Digital-First Health Delivery

Precision Health & AI

Health Access & Equity
Ambient Clinical Intelligence helps clinicians to re-imagine the medical encounter, to liberate productivity, improve quality and enhance patient satisfaction.

- 76% believe it improved the patient experience.
- 9 min decrease in average waiting time in primary care.
- 24% increase in number of patients seen per day in primary care.
Delivering digital health in the living-room - enabling Continuous Patient Monitoring capabilities to extend patient care beyond the hospital walls—reducing re-admissions and supporting patients from the comfort of their home.
Reimaging Senior Care

Equitable & Accessible care
Empower care teams
Improve operational outcomes
Protect health information
Reimagine healthcare

EQUITABLE CARE
Address socio-economic barriers (affordability), Health disparities, Vaccination equity

PATIENT INSIGHTS
Transform data into prescriptive insights.

VIRTUAL HEALTH
Provide new avenues for care.

CLINICAL ANALYTICS
Access and securely share actionable data to help improve patient care.

IMPROVED ACCESS TO CARE
Broadband, digital literacy, Community Health Hubs

CARE TEAM COLLABORATION/COORDINATION
Develop systems of engagement with intelligent workflows.

CONTINUOUS PATIENT MONITORING
Combine IOT & analytics to optimize treatments.

DATA INTEROPERABILITY
Create new healthcare systems of engagement by connecting data from multiple systems of record

Better Experiences
Better Care
Better Insights

Better Insights

Operational Analytics
Gain actionable insights to optimize operations.
Virtual Reality enables Holomedicine - democratizing access to health expertise, transforming teaching and training, enhances safety and collaboration, as well as surgery preparation.

We had a French perspective, we had an American perspective and we had a Latin American perspective. We had one-quarter of the world inside the operating room.
Empowering Healthier Longevity

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Virtual Tumor Board
A partnership to decode the human adaptive immune system
to improve the diagnosis of disease

This announcement comes at a time of inflection in healthcare and biotechnology. We now have the technology to be able to do what we’ve been talking about for the past decade – develop a universal TCR antigen map that presents an opportunity to help patients at an unprecedented scale

-- Chad Robins, President, CEO and Co-founder of Adaptive Biotechnologies

We are very excited and inspired by our collaboration with Adaptive Biotechnologies, as it clearly advances our mission to use cloud and AI technologies to transform healthcare and improve the lives of people around the world.

-- Peter Lee, CVP AI & Research, Microsoft
Microsoft Immunomics

TCR - Antigen Map Project

Learning to decode the adaptive immune system to diagnose disease

1 M T cells, each genetically programmed to target a specific antigen that the body is trying to control.

Antigen specificity is determined by the T cell receptor (TCR). Adaptive efficiently sequences the TCRs of all 1M T cells.

Cloud-scale machine learning to map trillions of T cells to antigens

What’s missing: The tools to translate the TCR language to the antigen language.

Adaptive’s proprietary Immune Medicine Platform

Microsoft Immunomics

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Across the world, where are people living a higher proportion of years in good health?

- Low income
- Lower-middle income
- Upper-middle income
- High income

Hale, 2019

% of healthy years in life expectancy, 2019

[Graph showing distribution of healthy years across different income levels]
Seeing AI – narrates the world around you, designed for low vision community this service uses the power of AI to describe people, text and object.

In Pursuit of Inclusive AI
Start your accessibility journey today by learning how to build experiences that are accessible for people of all abilities.
Thank You

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