Sana Wireless Technology

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Outline

- Why mobile health care?
- Role of mobile health in Brazil
- Sana projects
- Sana Brazil
  - São Paulo
  - Natal

A **lack of trained physicians** is one of the largest issues facing healthcare in the developing world.

Patients often make long journeys to clinics, only to be referred to **expensive and far away** medical centers for a diagnosis.

Paper based medical records further contribute to inefficiencies.

sana

Bigger Systems Problems

- Care provision is fragmented: providers work independently
- Absence of or inadequate documentation of care (paper-based)
- Lack of process standardization and outcomes tracking – “ad hoc” care -> care variability
- Weak system for quality assurance and improvement

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Traditional Tele-Medicine

- Scalability an issue
- Reliance on fixed and expensive infrastructure
- Limited broadband connectivity

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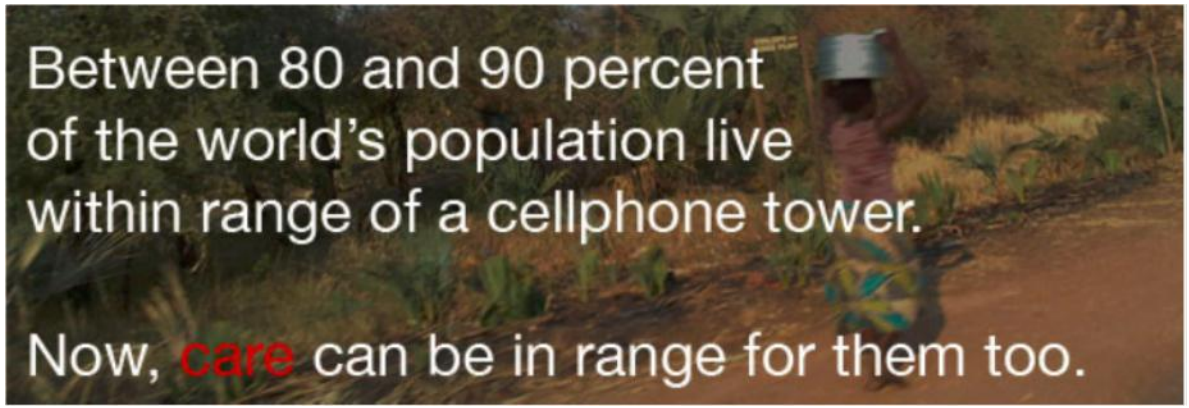
mHealth



Cloud Computing

mHealth Applications

- Education and awareness
- Remote data collection
- Remote monitoring
- Communication and training for healthcare workers
- Disease and epidemic outbreak tracking
- Diagnostic and treatment support


5.0 MHz


2 of 2 files
Depth: 15 cm
FPS: 4.35
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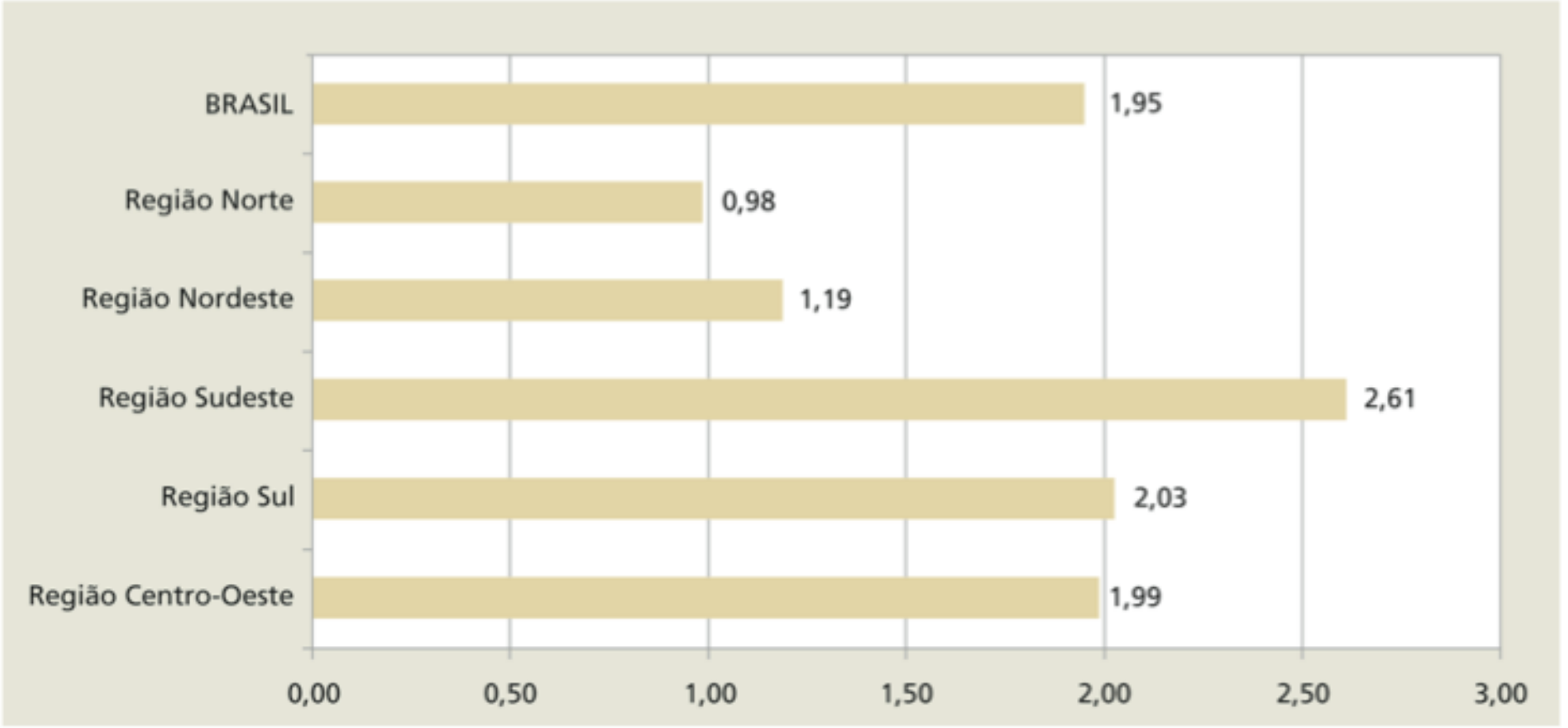
mHealth and Brazil

- Lack of MD and specialists in remote areas

Distribuição de médicos registrados por 1.000 habitantes, segundo Grandes Regiões – Brasil, 2011



Fonte: CFM; Pesquisa *Demografia Médica no Brasil*, 2011.

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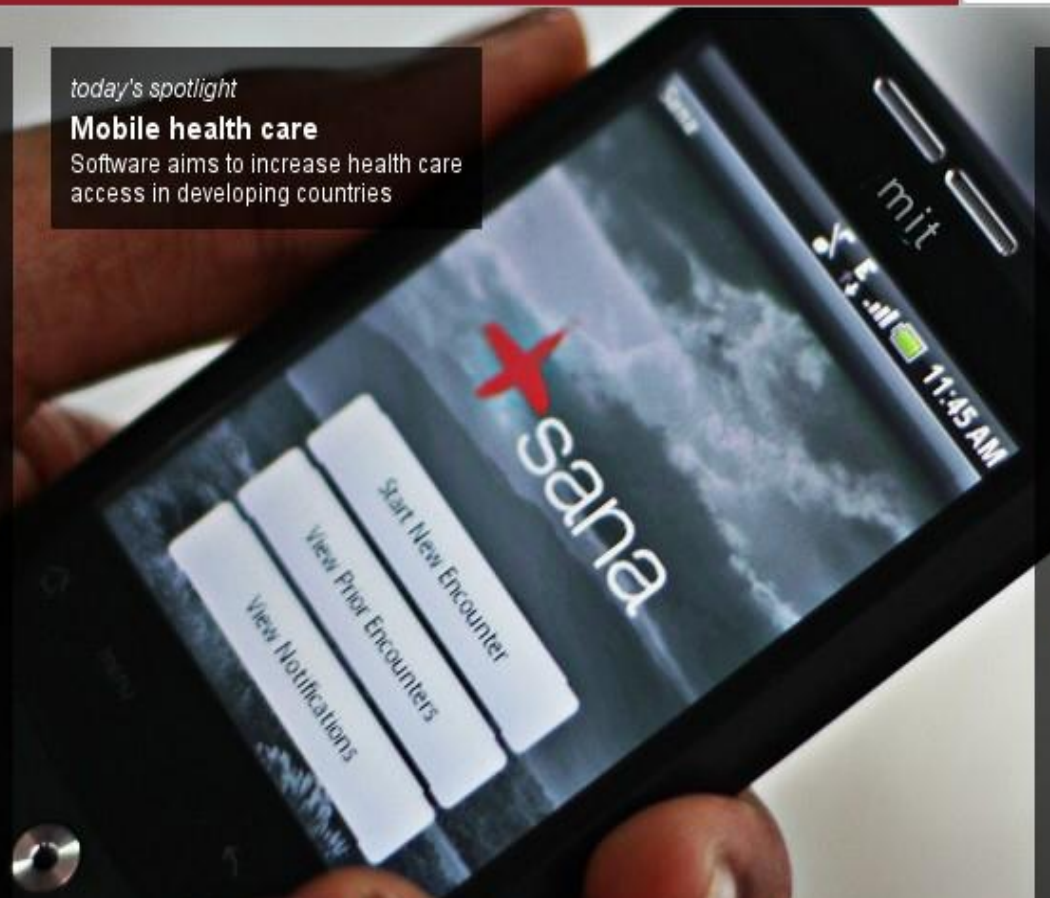
today's spotlight

Mobile health care

Software aims to increase health care access in developing countries



news

Unexpected finding at the Large Hadron Collider

Explained: How recessions are really identified

Study ties airplane emissions to deaths on the ground

NRC rankings reaffirm MIT's leadership role in science, technology

research | campus | press

events

State of the Institute, community social (today)

Of Note: MIT VPF Provider Fair (tomorrow)

Join MIT Entrepreneurship Review's Board of Topic Experts

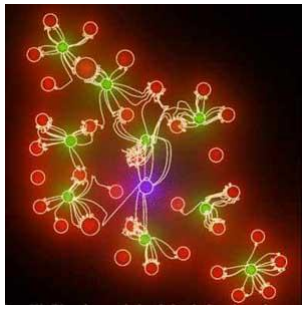
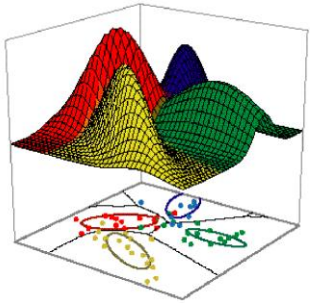
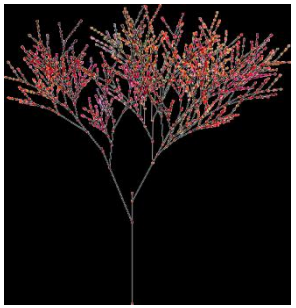
today's image:
RJ Ryan

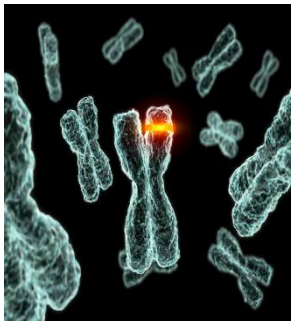
Sana

- Volunteer organization hosted by the Computer Science and Artificial Intelligence Laboratory consisting of students and alumni of MIT, Harvard Medical School and Harvard Business School
- Offers a mobile tele-health platform for resource-poor settings

Sana Mission

- Our mission is to revolutionize healthcare delivery in remote areas through innovative mobile information services that improve patient access to medical specialists for faster, high quality, and more cost effective diagnosis and intervention.

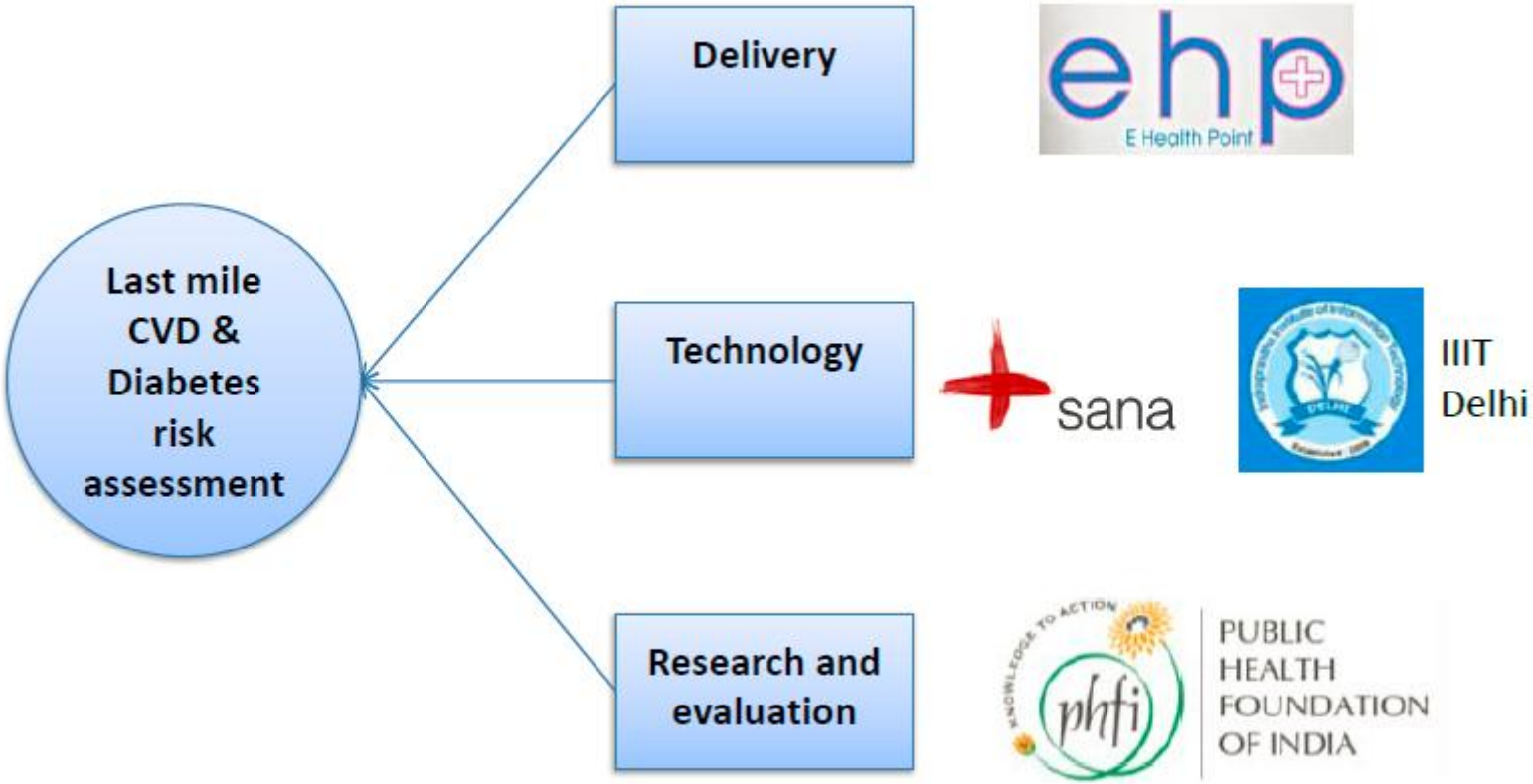

Political Map of the World, April 2006
AUSTRALIA Independent state
Bermuda Dependency or area of special sovereignty
Sicily / ASTURIAS Island / island group
Capital
Arctic Circle (66°33')
Tropic of Cancer (23°27')
Equator
Tropic of Capricorn (23°27')
Antarctic Circle (66°33')
NORTH PACIFIC OCEAN
NORTH ATLANTIC OCEAN
SOUTH PACIFIC OCEAN
SOUTH ATLANTIC OCEAN
INDIAN OCEAN
SOUTHERN OCEAN
ARCTIC OCEAN
Greenland (DENMARK)
CANADA
U.S.
UNITED STATES
RUSSIA
CHINA
INDIA
BRAZIL
AUSTRALIA
ANTARCTICA
April 2006


WORLD HEALTH ORGANIZATION
GENEVA
SONY

Sana India

- Screening of oral cancer and chronic diseases (heart disease, diabetes)
- Early detection: less costly care, better outcomes

Sana Delhi


Last mile CVD & Diabetes risk assessment
Delivery
Technology
Research and evaluation
ehp
E Health Point
sana
IIIT Delhi
PUBLIC HEALTH FOUNDATION OF INDIA

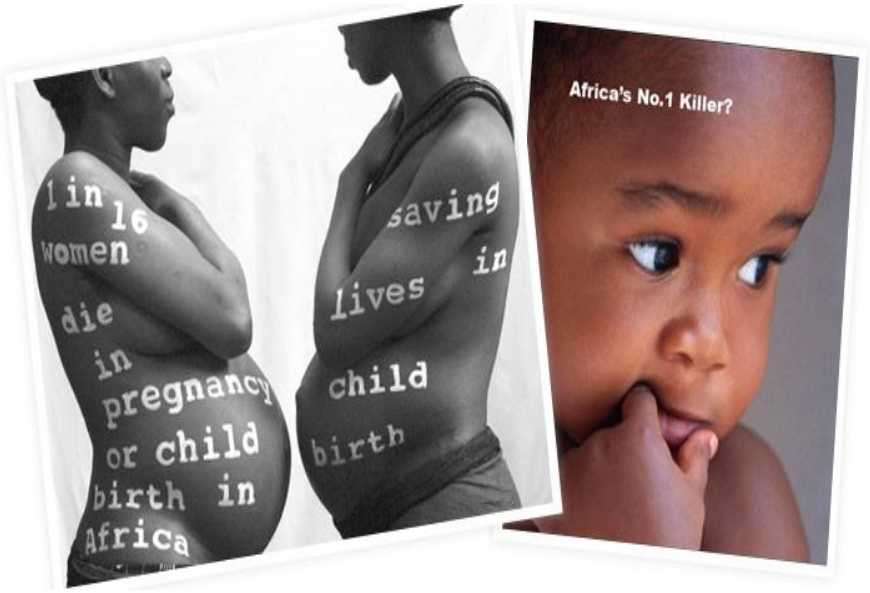
Sana Philippines

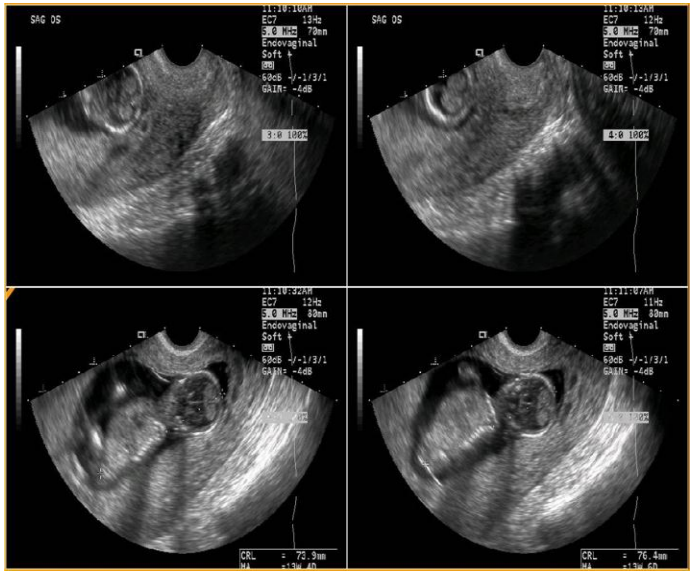
- Primary care application
- Partners:
  - National Telehealth Center
  - University of the Philippines
  - Integrated Open Source Solutions
  - Department of Health DTTB Program

Sana Taiwan

- Assist Taipei Medical University to implement mHealth in Swaziland as part of Taiwan Medical Mission, established in 2008

Prenatal Ultrasound Screening





Women in least developed countries are 300 times more likely to die in childbirth.

Every year, more than half a million women die as a result of pregnancy or childbirth.

Postnatal System

- Provide care to mother and infant during the critical period of 1 hour to 1 week after delivery
- Hardcode WHO recommendations into the phones of birth attendants and CHWs

Sana Greece

- Greece – diabetic foot ulcer detection

Sana Brazil

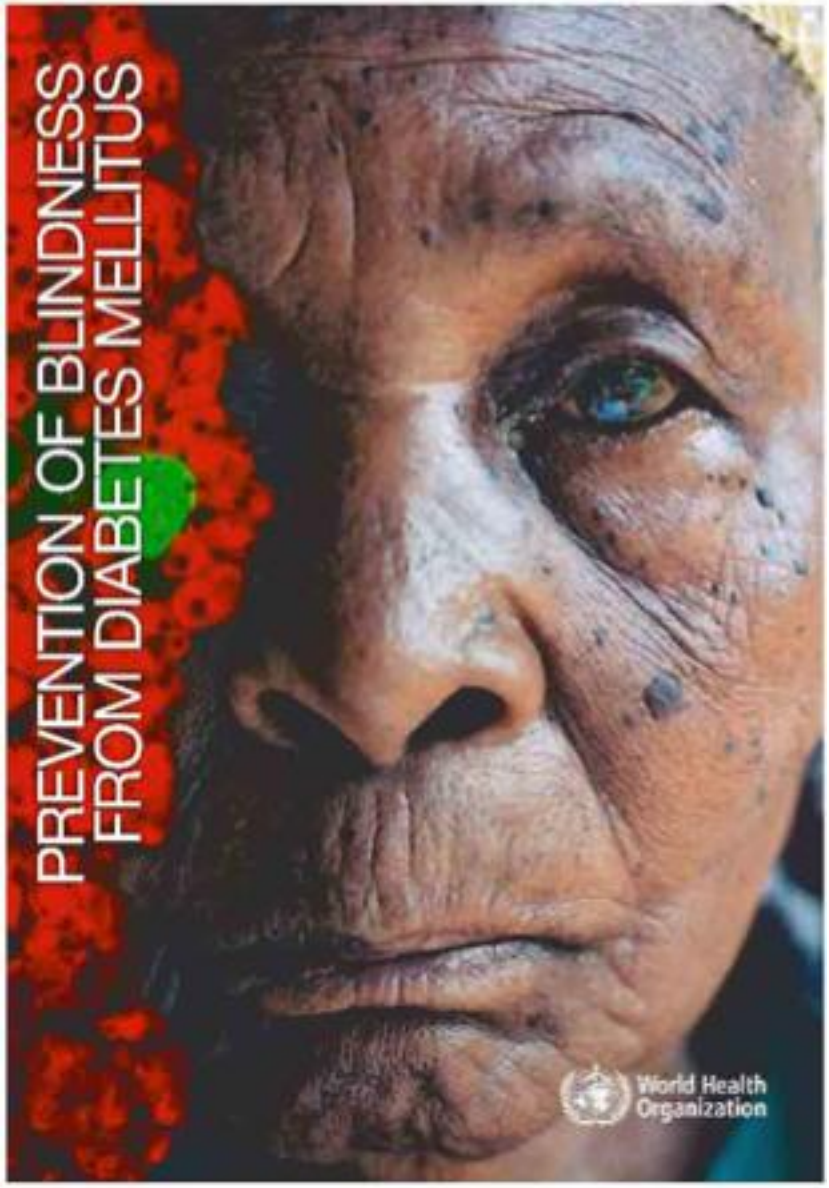
- Screening for common eye conditions

Population (millions)	(A) Blind (millions)	(B) Low Vision (millions)	(A+B) Visually Impaired (millions)
6,737.50	39.365	246.024	285.389

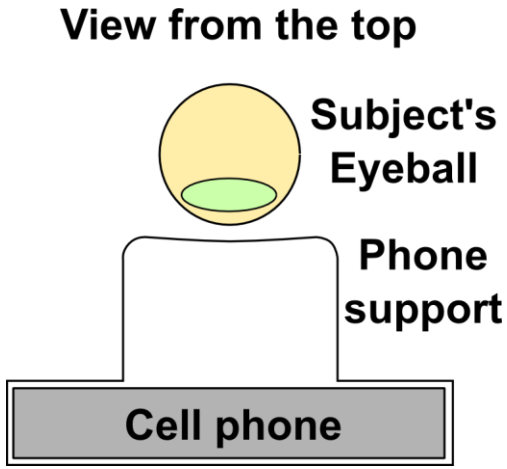
Source: WHO 2010

Sana Brazil

- Leading causes
  - Refraction errors
  - Cataract
  - Diabetes



Devices

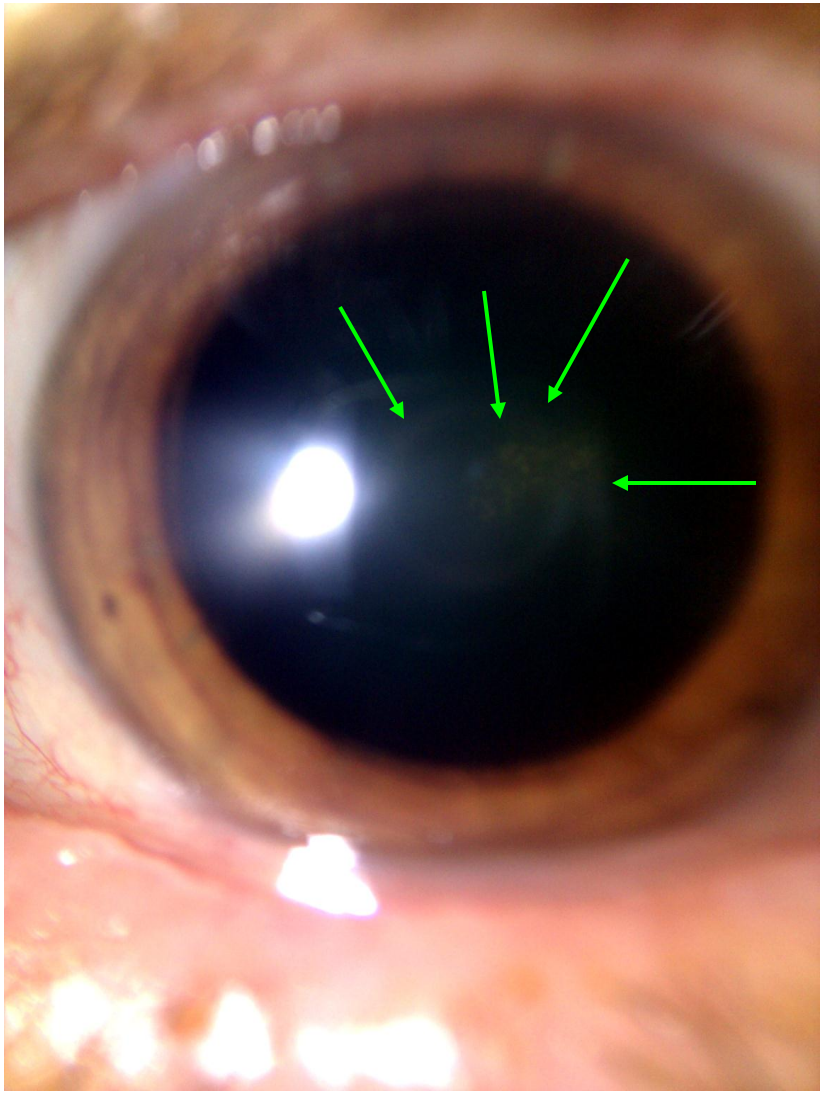

View from the top
Subject's Eyeball
Phone support
Cell phone

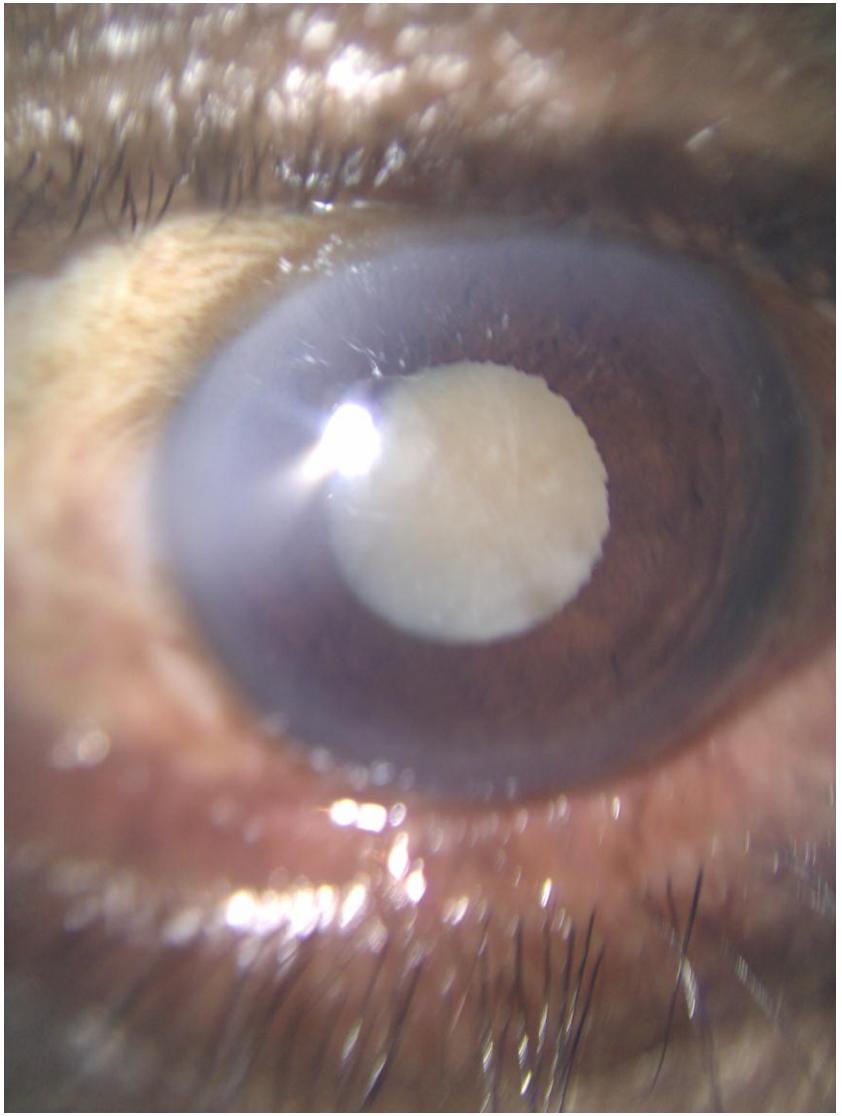

Canon


Introducing NETRA+CATRA
An Eye Exam for Everyone

Anterior Segment Screening

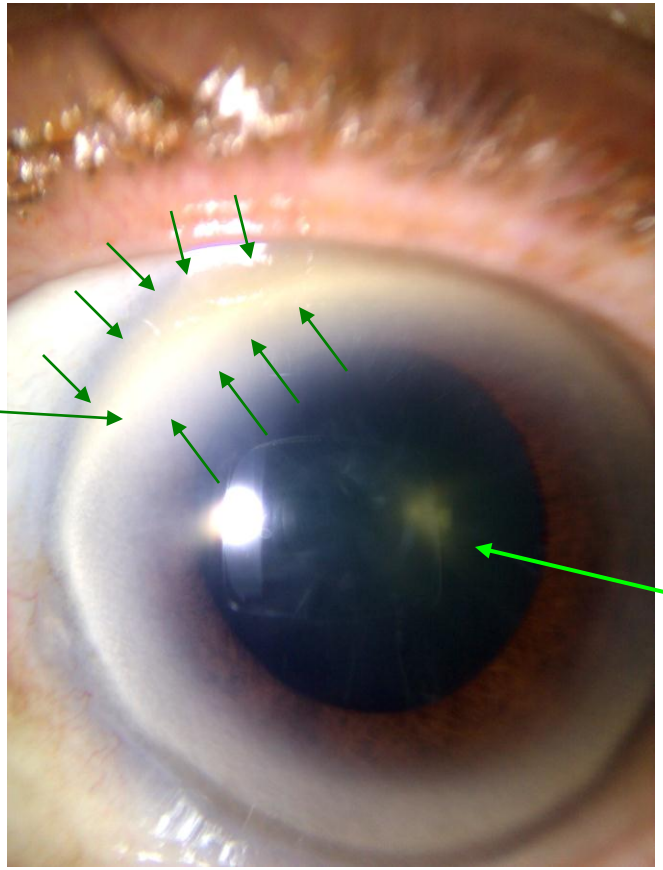
Cataract



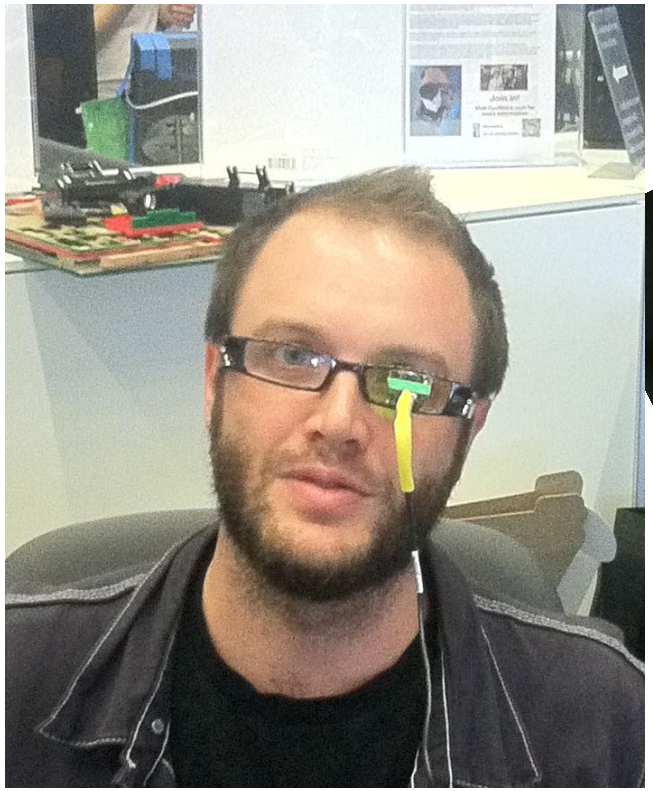


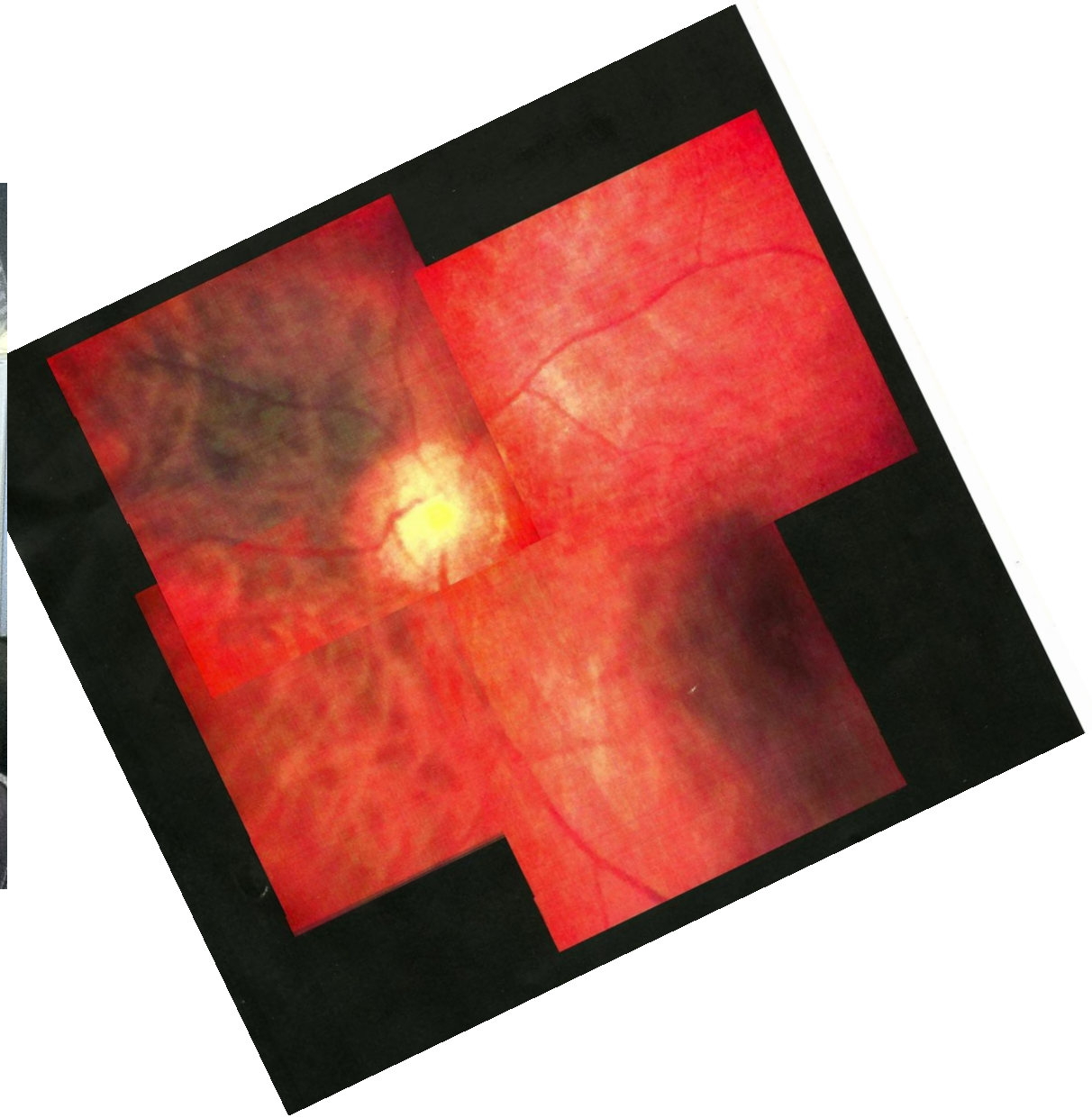
Corneal Diseases

Corneal
Thinning



Mild
Cataract


Join in!



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BLOG

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MORE ABOUT SANA AND MOBILE HEALTH

The Summer 2010 issue of *AQ* includes a case study on Sana, a team of MIT and Harvard School of Public Health students who have developed award-winning technology that enables mobile phones to capture and send medical data, even in areas with poor cellular coverage.

The platform allows rural practitioners to connect in real time with trained experts for diagnostic and treatment assistance, and after successful projects in Bangalore, India, they are getting ready to launch an eHealth training program in Monterrey, Mexico, next January.

Since the Summer issue went to press, Sana has expanded its work in several countries, including Brazil, where Sana Brazil was launched in partnership with the *Universidade Federal de São Paulo* and the National Telecommunications Institute to design and deploy a system to help community health workers provide comprehensive eye examinations.

For more information about Sana, please visit the links below:

1. Video: Mobile Health in Developing Societies at the Asia Society
2. Exhibit: MIT Next Billion Network at the Cooper-Hewitt Museum
3. Video: Using Cellphones to Change the World: Mobile Care for Remote Diagnosis and Screening

BLOG

FROM PUYO, ECUADOR. STABILITY AT ANY COST?
October 20, 2010
by Lindsay Green-Barber

WEEKLY ROUNDUP FROM ACROSS THE AMERICAS
October 20, 2010
by AS-COA Online

National Design Triennial

WHY DESIGN NOW?

EXHIBITION THEMES

Energy
Mobility
Community
Materials
Prosperity
Health
Communication
Simplicity

MIT Next Billion Network

MIT Next Billion Network. Concept: Jhonatan Rotberg, Lecturer, MIT Engineering Systems Division. Partners: MIT NextLab Program, Fundación Carlos Slim (Javier Elguea), Telmex (Andrés Vázquez del Mercado), MIT Media Lab (Luis Sarmenta, Luis Blackaller, Rich Fletcher, Sandy Pentland, Frank Moss, Mitch Resnick, John Maeda, Nicole Prowell, Max Wagenblass), Harvard-MIT Health Sciences and Technology (Gari Clifford, Leo Celi), MIT Center for Transportation and Logistics (Edgar Blanco, Jen-Hao Yang). Conceived Mexico, 2006, launched United States, 2007

Sana Approach

- Multidisciplinary and collaborative to enable
  - Technical innovation (based on an open source platform)
  - Business innovation (based on models being designed and tested with partner organizations)
  - Development of value-creating networks by building coalitions of local and international academic and provider organizations to identify and share examples of best practice and to pool resources


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5:40 PM
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View Prior Encounters
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menu

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