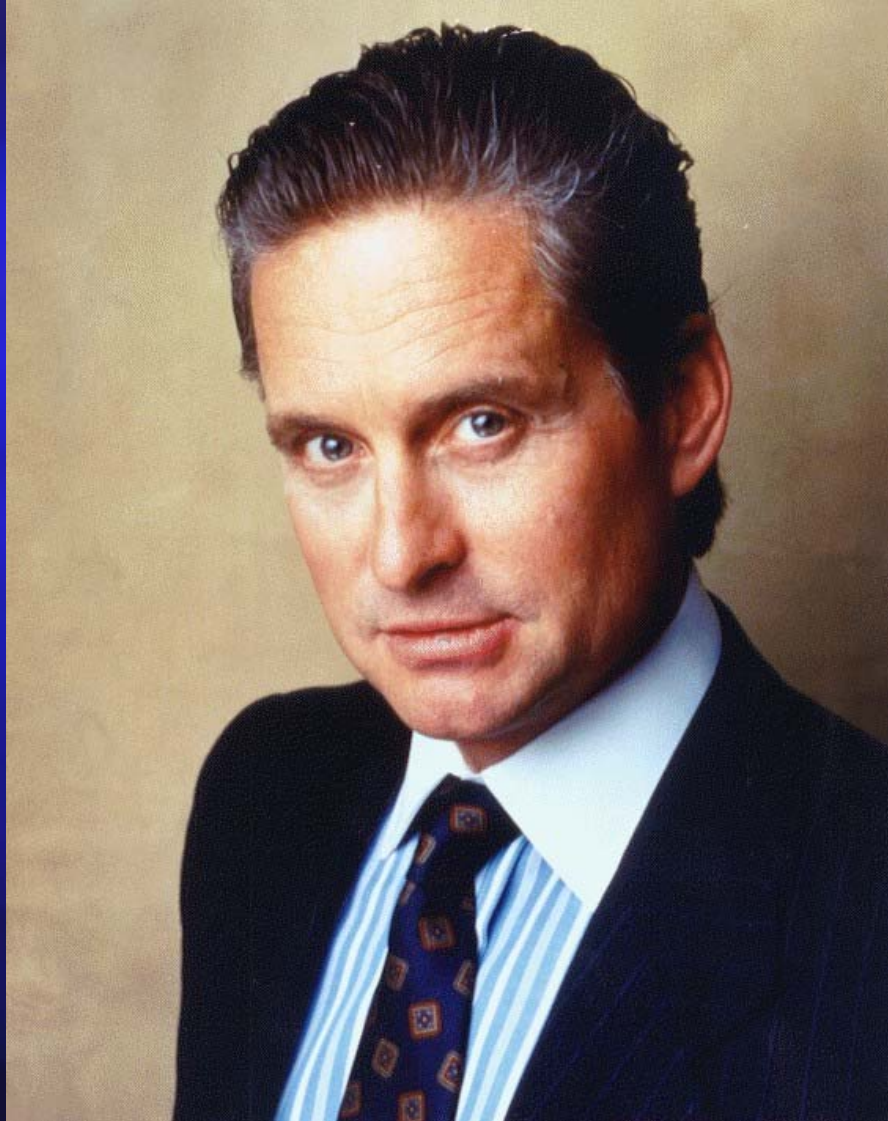


Mobile Health Technologies: Future Tools of Healthcare



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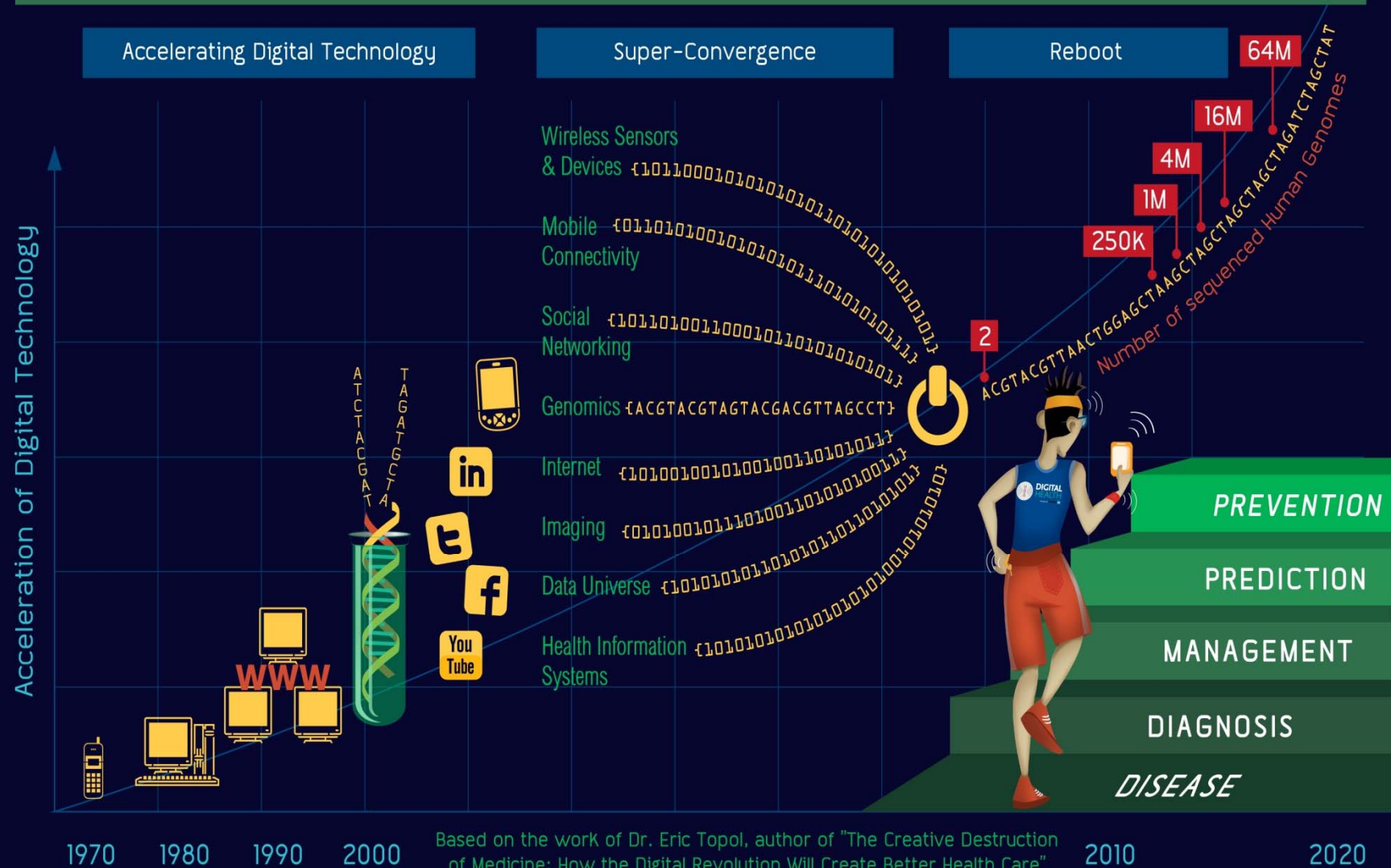
“The most valuable commodity that I know of is *information*”. —Gordon Gekko



6 CHARACTERS REBOOTING MEDICINE AND HEALTH

0, 1, A, C, G, T

Brought to you by MI2FIT and 
linkd.in/DigitalHealthGroup
www.misfitwearables.com/references



What is mHealth?

Diverse application of wireless and mobile technologies designed to improve health research, health care services and health outcomes .

Why is mHealth Good for Patients?

- SOMETHING **MUST** BE DONE to IMPROVE HEALTHCARE
- Promotes patient engagement (self-management)
- Provides educational resources
- Improves doctor-patient relationship
- Supports caregivers' mission
- Creates personalization of healthcare -> ?better outcome
- Convergence of many technologies -> simplification, convenience

Barriers to Adoption of mHealth

- Nebulous regulatory guidance
- Lack of reliability, security/privacy
- Lack of mobile strategy by providers (BYOB, M2M integration), payers
- Lack of smart phones by older, chronically ill pts
- Lack of business models
- Lack of proven ROI (except RPM)

Genomics



Genomics

- Digitization of a person's genetics: available for <\$2000 and sent to your smart phone.
- Personalized medicine:
 - patient susceptibility to specific treatments.
 - Predict susceptibility to specific diseases.
 - Pool data => population studies.

Genomics

- Challenges:
 - Most genetic predispositions require environmental influences.
 - Associated counseling needed.
 - Genetics may change over time.
 - Risks may change over time.
 - Many diseases not mapped.
 - Most physicians not prepared to address.

Benefits of Genomics

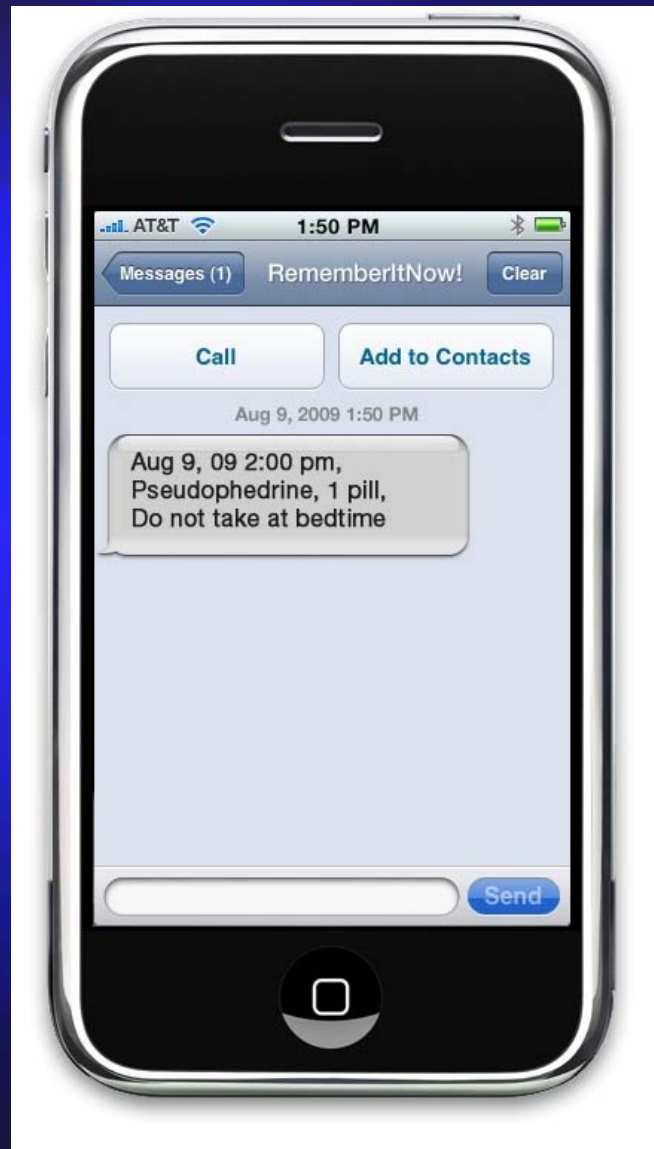
- Gives patients vision of future-> personalized life, treatment, family planning decisions.
- Crowdsourced clinical studies: ?less bias, better compliance (23andME, PatientsLikeMe).
- More comprehensive understanding of cancer, other complex diseases.
- Faster way to treatments of orphan diseases.

mHealth and Clinical Trials

Advantages of Mobile Clinical Trials

- Recruitment of patients via social media
- Instantaneous AE reporting
- Bidirectional interactions eliminate visits
- Easier communications among centers/sponsors/reg bodies
- Facilitates medication adherence (reminders, pill sensors)
- More efficient data collection, reporting, auditing
- **NO MORE FAXES!**

Medication Adherence and mHealth



Medication Adherence and mHealth



Patient Portals: Patients' Mobile Pathway to Records

Patient Portals: Intersection of Stakeholders

- Patients & caregivers
- Providers
- Payers
- Healthcare Social Media
- Pharma/Med Device Companies

Mobile Medical Applications

Guidance for Industry and Food
and Drug Administration Staff

Document issued on: September 25, 2013

Mobile Medical Application (Mobile Medical App)

A “mobile medical app” is a mobile app that meets the definition of device in section 201(h) of the Federal Food, Drug, and Cosmetic Act (FD&C Act)⁴; and either is intended:

- to be used as an accessory to a regulated medical device; or
- to transform a mobile platform into a regulated medical device.

DOWNLOAD A HEALTH APP AND CALL ME IN THE MORNING



89% of **PHYSICIANS** would **RECOMMEND** a mobile **HEALTH APP** to a **PATIENT**

93% believe that mobile health apps can **IMPROVE** a patient's **HEALTH OUTCOME**



find value in having a mobile **HEALTH APP** connected to **EHRs**

SIX OUT OF TEN



PHYSICIANS

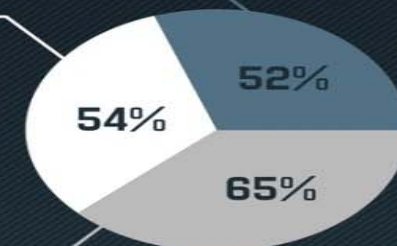
said a **TOP BENEFIT** was the ability to **PROVIDE PATIENTS** with **AUTOMATIC APPOINTMENT ALERTS** and **REMINDERS**

the **TOP THREE HEALTH ISSUES** where a mobile health application **LINKED** to an EHR could **MAKE** an **IMPACT**

PREVENTATIVE CARE

DIABETES

MEDICATION ADHERENCE



eClinicalWorks

eClinicalworks® conducted an online survey with responses from 2,291 healthcare professionals in the United States. All interviews were conducted between January 18 and 24, 2013. The sample included responses from 649 physicians.

Facts About Health Apps*

- 97,000 mHealth applications are listed on 62 full catalog app stores.
- 15% are designed for healthcare professionals (CME, RPM, healthcare mgt).
- 42% of apps: Paid business model.
- Top 10 mHealth apps generate 4 million free and 300,000 paid downloads per day.

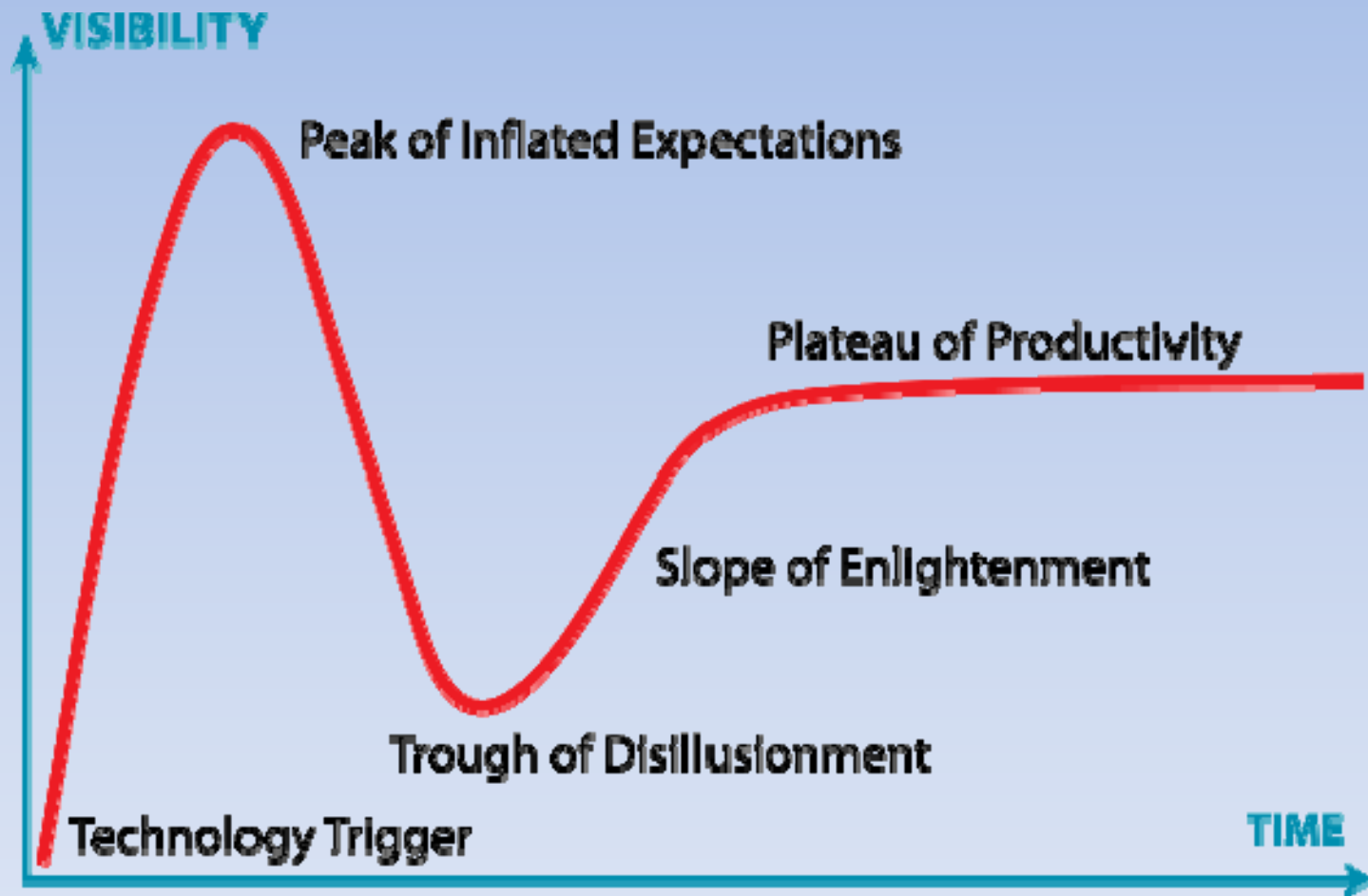
*Research2guidance, 3/13

Which Mobile Capabilities Patients Want Their Doctor to Have

- 42%: An app to see their test results.
- 33%: Remote monitoring devices.
- 30%: Access to patient health records via mobile device.
- 13%: Didn't think apps would help improve care at all.

Source: 2012 Ruder Finn mHealth Report

Gartner Hype Cycle



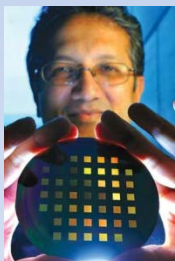
Certification Program



David Lee Scher, MD, Chair
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Franklin A. Shaffer, EdD, RN, FAAN
Head of the Nursing Advisory Council



Shuvo Roy, PhD
Leading biomedical scientist and researcher



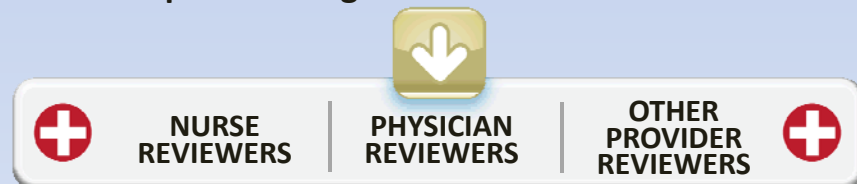
Dave deBronkart
ePatient Dave
Leading Patient Advocate

BLUE RIBBON PANEL

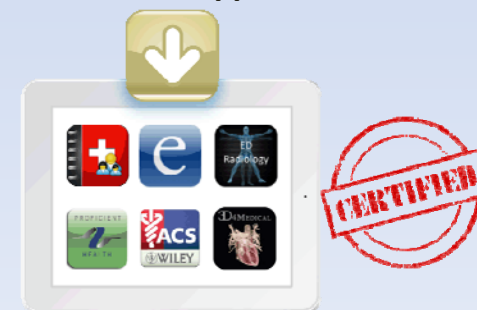
Set Standards for App Certification



Implement Program and Oversee Reviewers



Review Apps



Problems With mHealth's Clinical Evidence

- Not readily available—some in peer-reviewed literature, but much in blogs, presentations, and other sources.
- • Poor accepted by journals: confusion about whether mHealth is a “health” or “IT” intervention.
- • Usually small studies
- • The evidence base is growing rapidly and it is difficult for individuals to keep up-to-date

Challenges for mHealth

- Ministries of Health, institutions and donors unable to make informed decisions re: commercial and research investments.
- Implementers unsure re: best solutions to maximize effectiveness and produce the highest health impact
- Researchers have difficulty knowing where to focus their research efforts

JHU and USAID



Examples of Mobile Medical Apps



HEALTHCARE
CONSULTING, LLC



Not FDA Cleared













Ultrasound



Five Pitfalls of Designing a Medical App

- The motivation for the app development is misguided
- Lack of clinician involvement
- Poor attention to usability
- Not knowing the healthcare landscape
- Not building to regulatory specifications

<http://davidleescher.com/2013/01/31/five-pitfalls-of-designing-a-medical-app/>

Mobile Strategy Considerations

- Who is the customer?
 - Provider?
 - Patient?
 - Caregiver?
 - Partnering verticals
 - All of above!
- In-house or outsource?
- Potential partners: IT (EHRs, portals, analytics, app developers), OPCs, MDM companies, professional societies, advocacy gps.

The Future of Medical Apps

- Final Guidance just release by the FDA
- More apps developed by professional medical societies
- App formularies for hospitals and payers
- Prescribing of apps by providers
- Integration of apps into patient portals and EHRs
- App development by Pharma/Med Dev companies for disease management

The Future of Medical Apps

- New HIPPA rules will affect apps
- Clinical effectiveness studies need done
- More apps for the diagnosis and treatment of specific disease states
- Movement towards mobile by older people



Social is Mobile

- Five Benefits of online patient communities:
 - Provide education
 - Provide emotional support
 - Pipelines to resources
 - Provide tools and info to caregivers
 - Provide forum for patients and providers to interact
 - Better than in person support groups

Why Physicians Need to be in Social Media

- It's where the patients are
- It's where hospital systems are
- It's a venue for humanistic communication
- It makes for useful interactions with colleagues and vendors
- It's not mandated

Patient Advocacy in mHealth

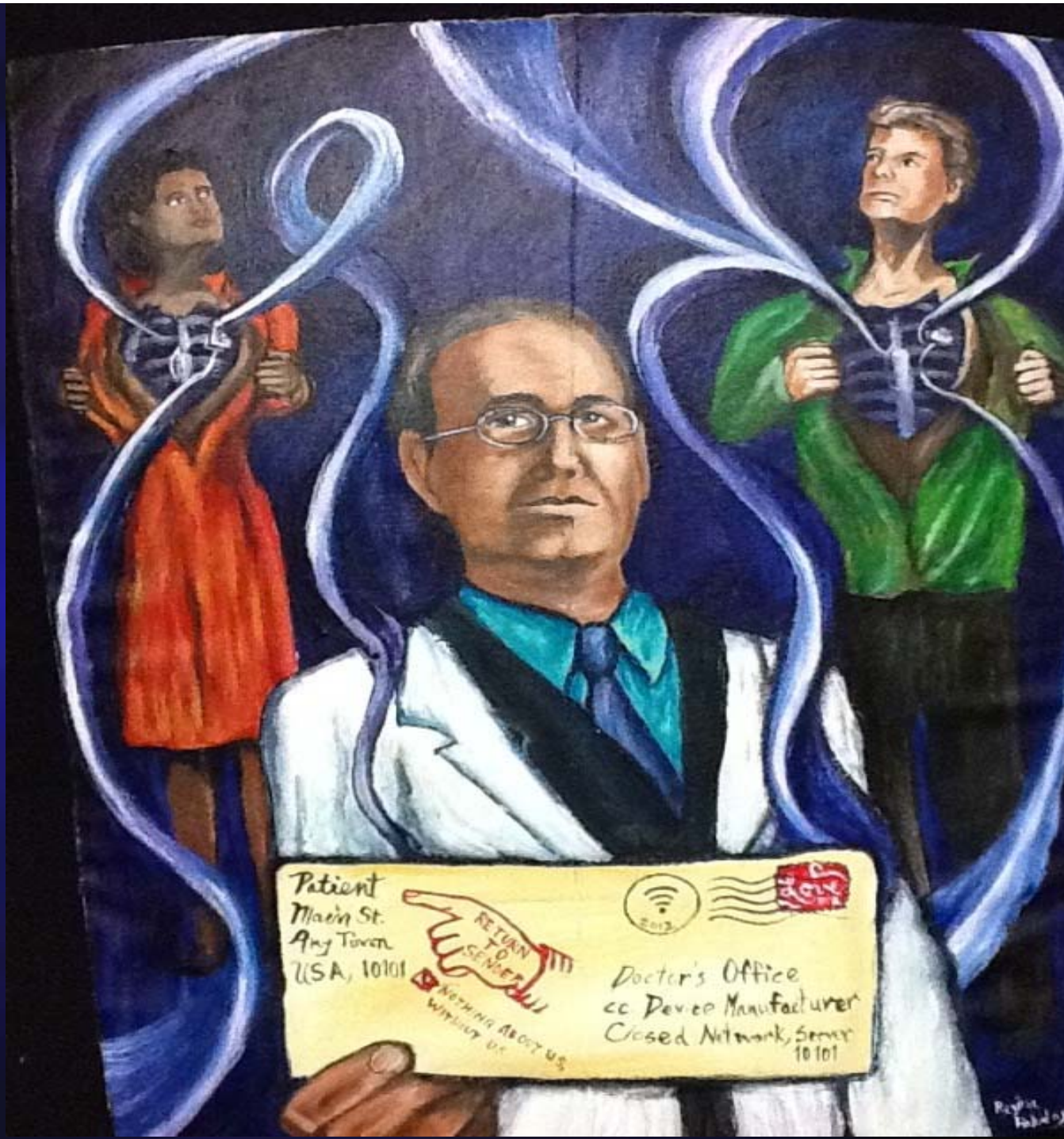


The Walking Gallery



#S4PM: Nothing About Us Without Us





Patient
Main St.
Any Town
USA, 10101

RETURN
TO
SENDER
Nothing About Us
Without Us



Doctor's Office
cc Device Manufacturer
Closed Network, Server
10101



Rafael
Lobato

“If you ask me a question I don’t know, I’m
not going to answer”



-----*Yogi Berra*