Designing Healthcare to Serve 1 Billion+ People

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ClickMedix
Mobile Healthcare by Experts

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Tonight's Journey

1. Discovery
2. Scaling
3. Consumerizing Healthcare
4. What you can do?

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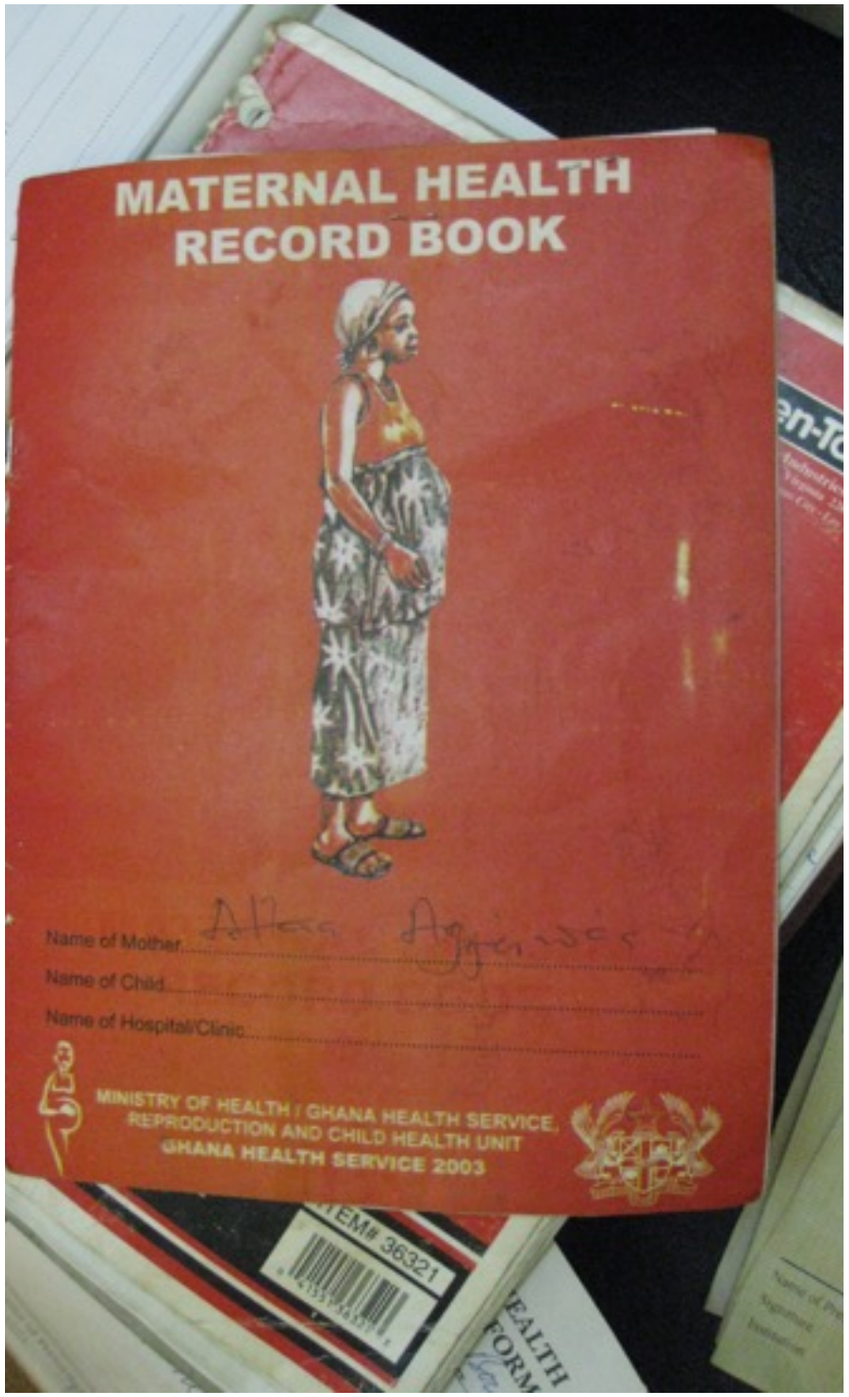
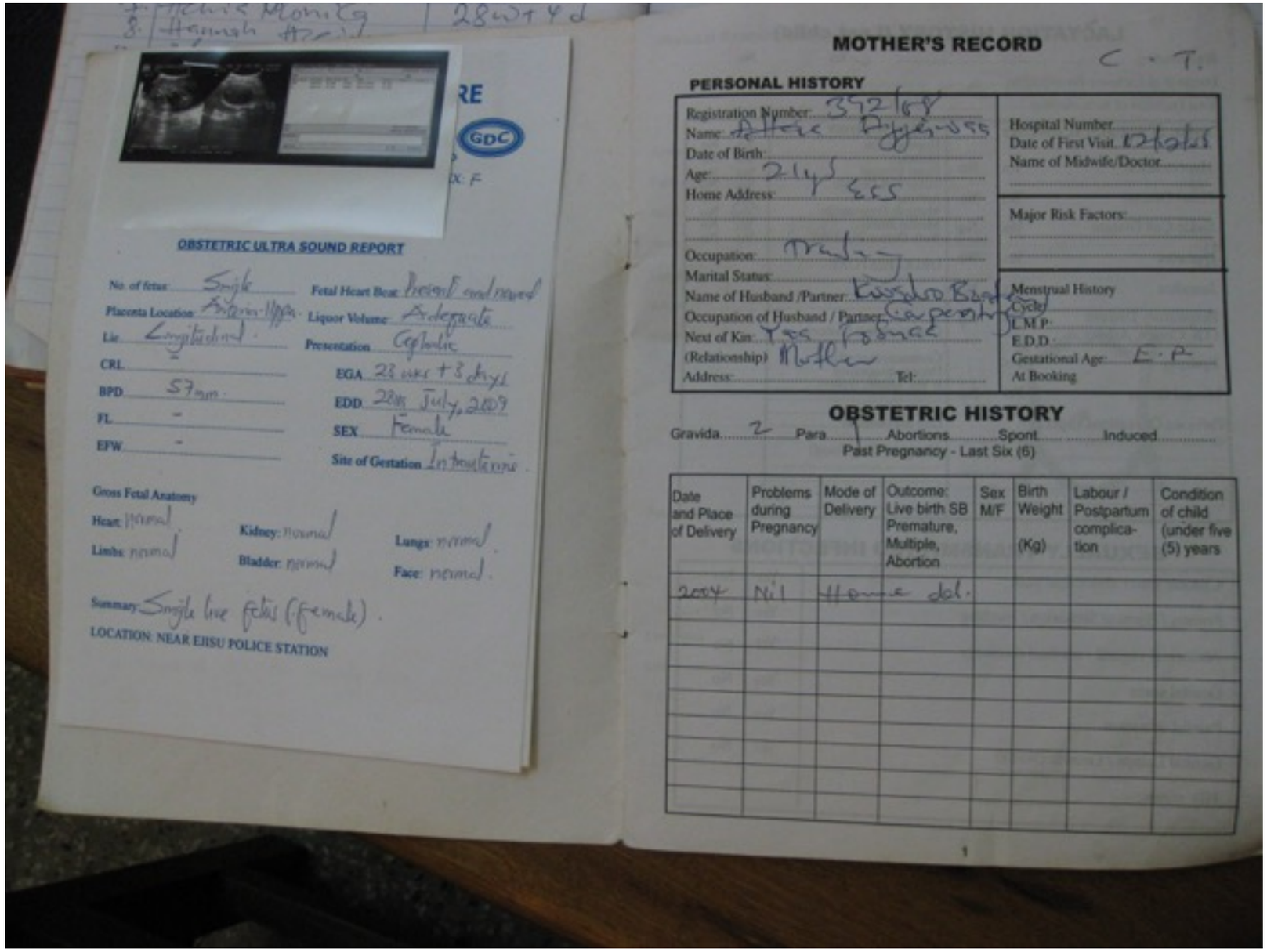
Discovery

How Doctors Help Patients





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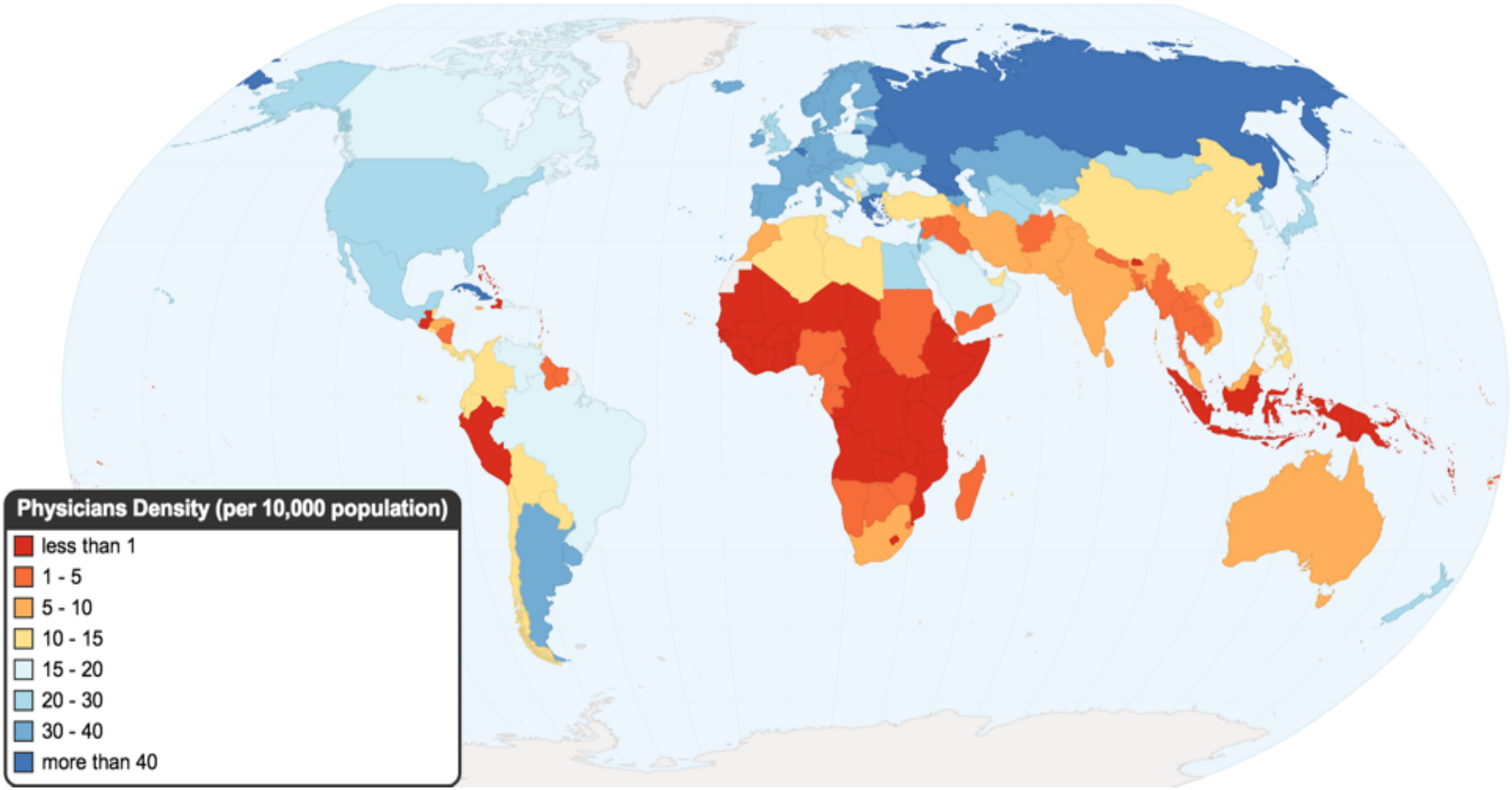
Physician Shortage Worldwide



Source: http://chartsbin.com/view/gcu

World Health Organization 2010, World Health Statistics 2010, ISBN 978 92 4 156398 7, World Health Organization, Geneva 27, Switzerland, viewed 16th September, 2010

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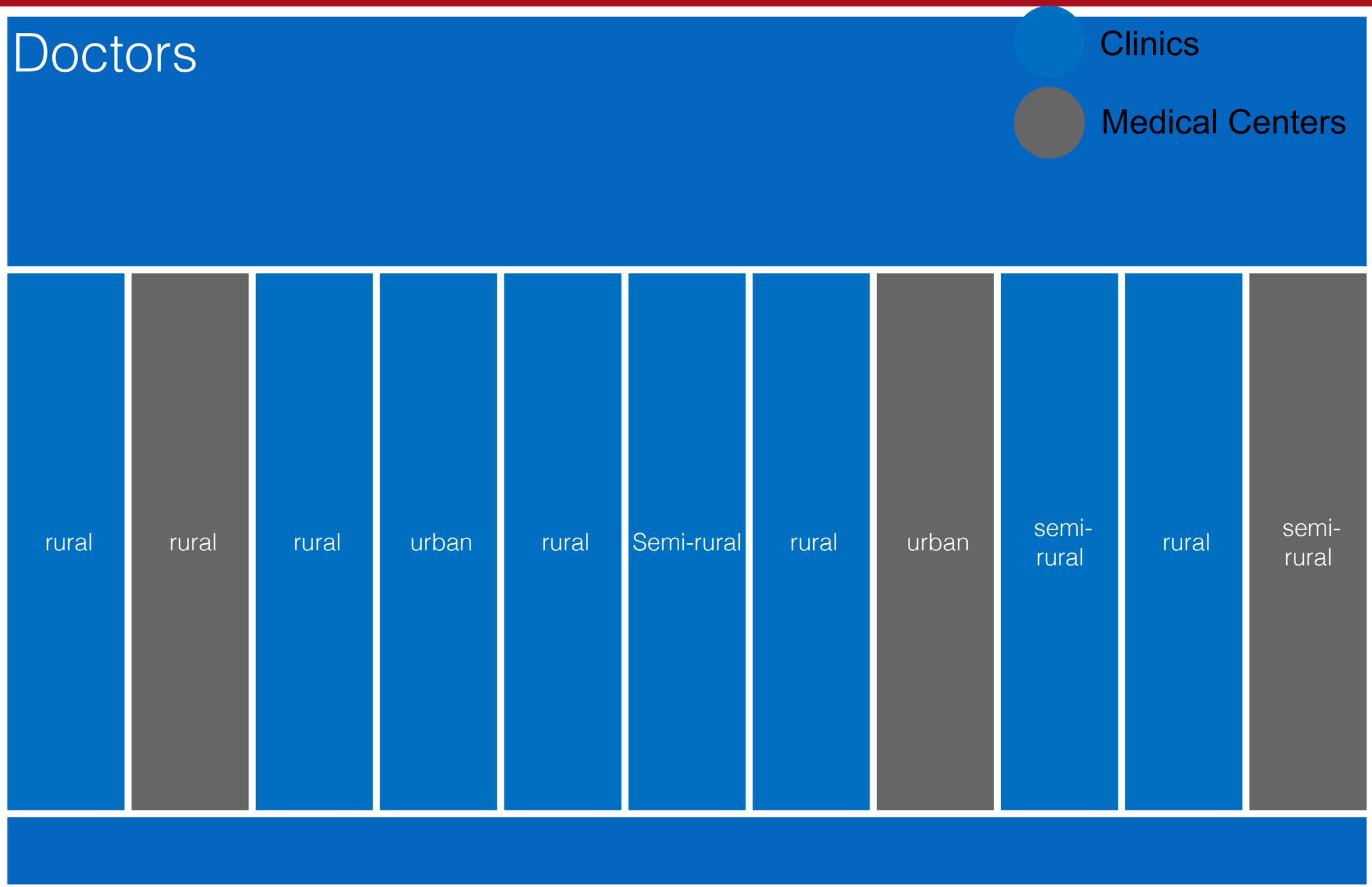
Design for Consumers?



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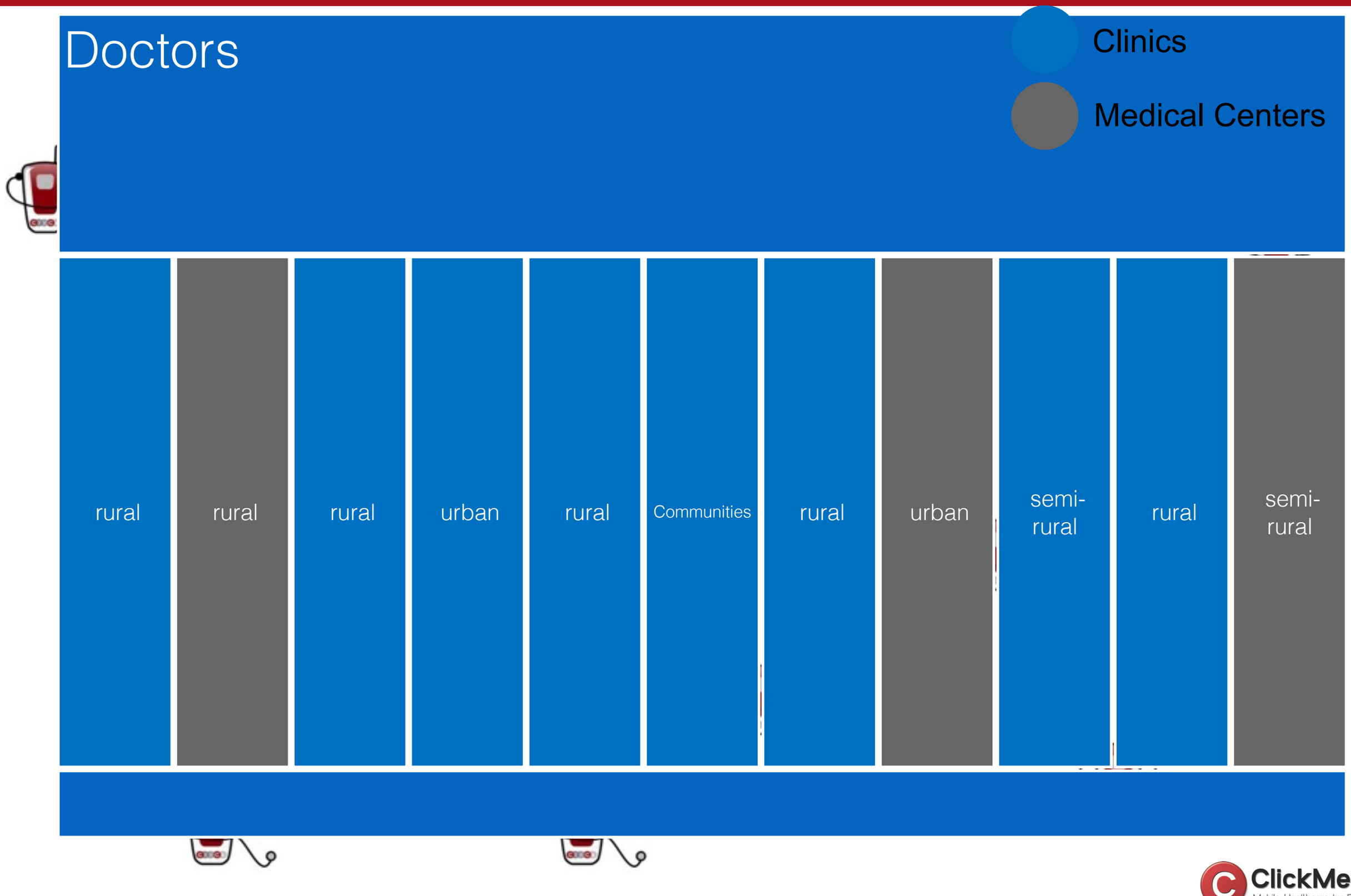
Design to Extend Reach of Doctors



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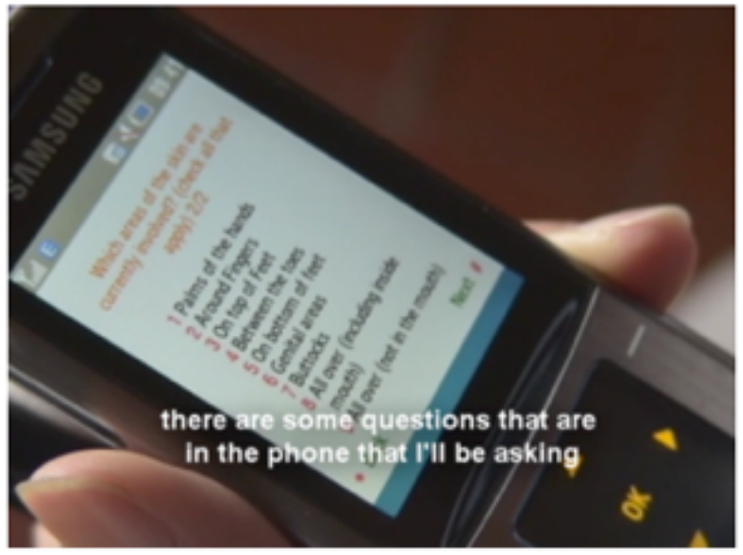
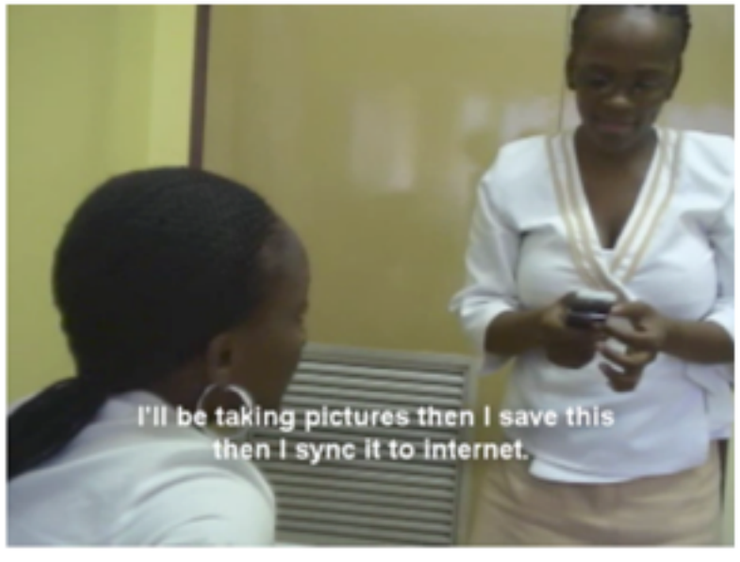
One Oral Surgeon for 1.8 Million People

2008: Tele-Consultation (HIV/AIDS, cervical cancer, pre/post oral surgery)

- >$1M USD saved from transportations per year
- >90 women treated for cervical cancer (in 3 months) through mid-wives screening for cancer





Lessons Learned

1. Health workers, nurses, and caregivers feel empowered to use technology
2. Health provider teams: specialists, doctors, nurses, health workers, and patients have strong need to work together – but can't
3. Bottom-line profit is a top-priority (more revenues / decreased costs

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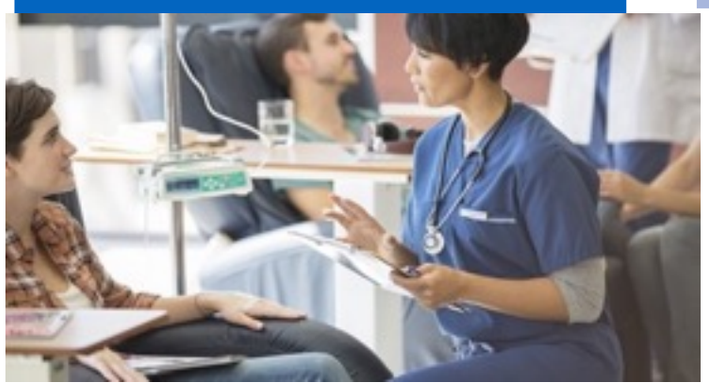
Scaling Solutions

Scaling Healthcare Innovations

1

Design service chain to enable



2

Connect doctors & community

3

Develop new services & revenue

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ClickMedix Has Been Deployed in 16 Countries to 250,000+ Patients

Specialists

Ear-Nose-Throat
Dermatology
Ophthalmology
EKG, Echo,
Ultrasound

Conditions

Heart Diseases
Diabetes
Cancer
Alzheimer's
Maternal/Child
Geriatrics

Customers

Hospitals/clinics
Health Insurance
Pharmacies
Home Care
Medical Devices

57%
Reduction in annual costs

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We Invent New Healthcare Programs

Medical

- Massachusetts General Hospital
- SUNY Downstate Medical Center
- University of Illinois Medical Center — Changing medicine. For good.
- Harvard Medical School
- Einstein — Albert Einstein College of Medicine of Yeshiva University
- Western University — Western Diabetes Institute
- Penn Medicine
- Cleveland Clinic
- Penn Dermatology
- United Family Home Health 和睦家家庭医疗
- Duke University Medical Center

Government

- Ministry of Health, Botswana
- Ministry of Health, Ministry of Education, Ministry of Technology, Egypt
- Mexican Social Security Institute

Mobile Tech

- mobinil
- orange
- Orascom Telecom
- GSMA Development Fund
- Massachusetts Institute of Technology
- Carnegie Mellon
- Qualcomm

Corporate

- Cigna
- Medtronic — When Life Depends on Medical Technology
- Grameen PrimaCare — Healthy Women. Healthy Family. Healthy Business.
- Farmacias Cruz Verde
- Invitae

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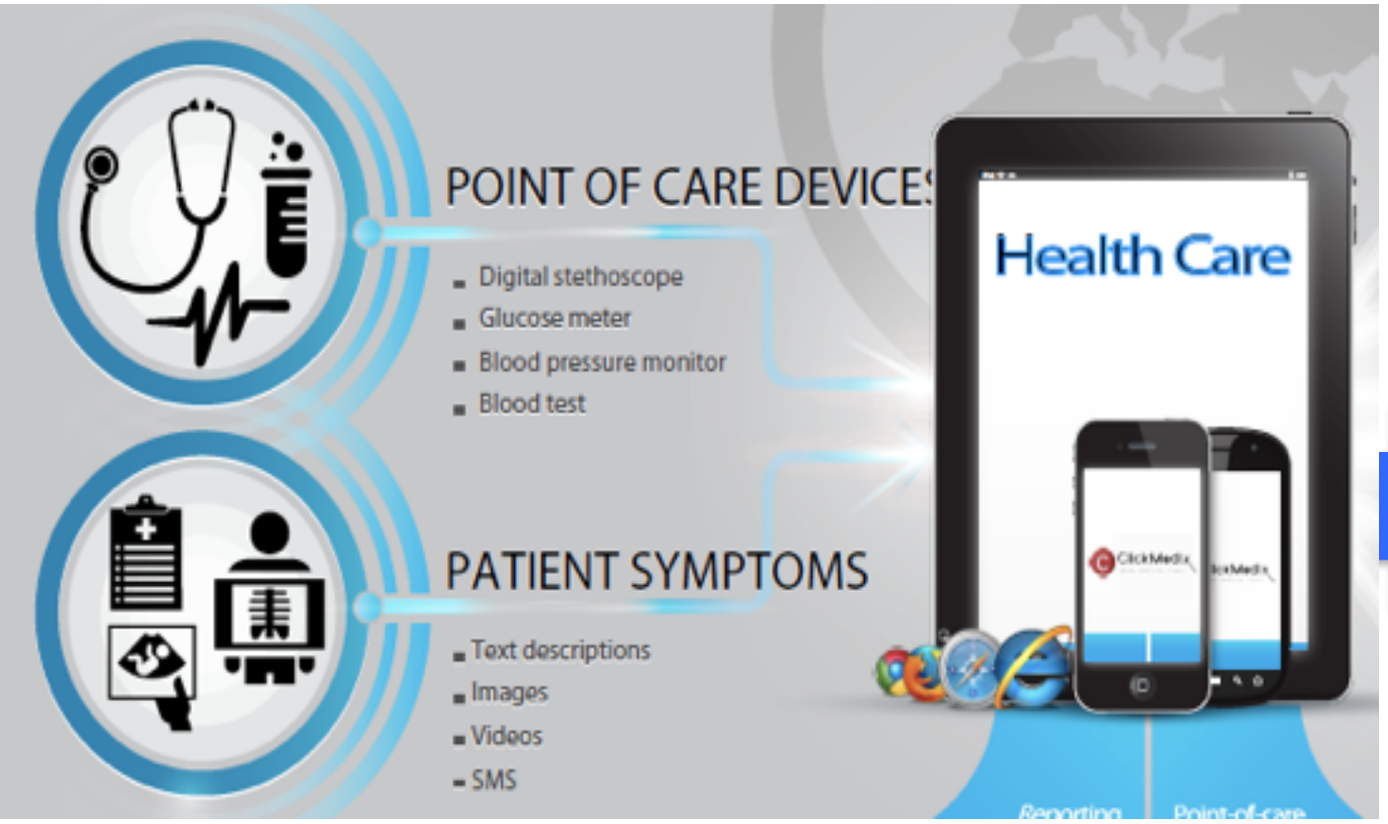
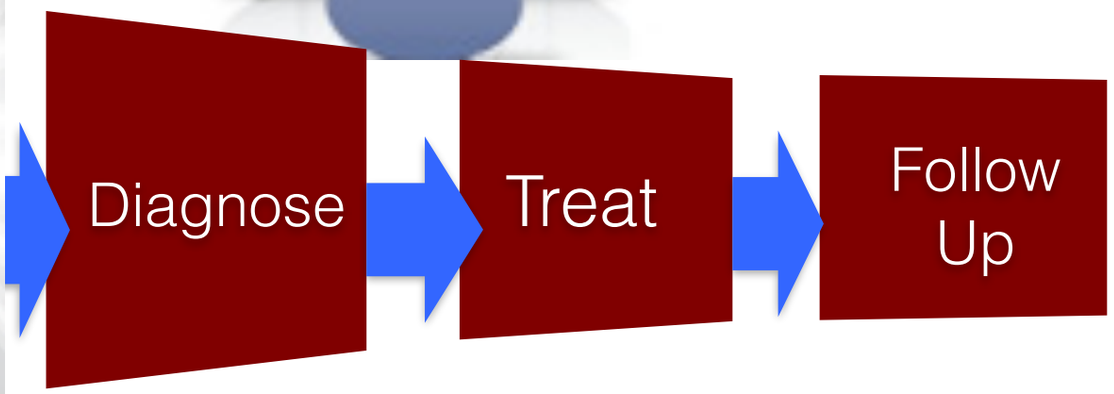
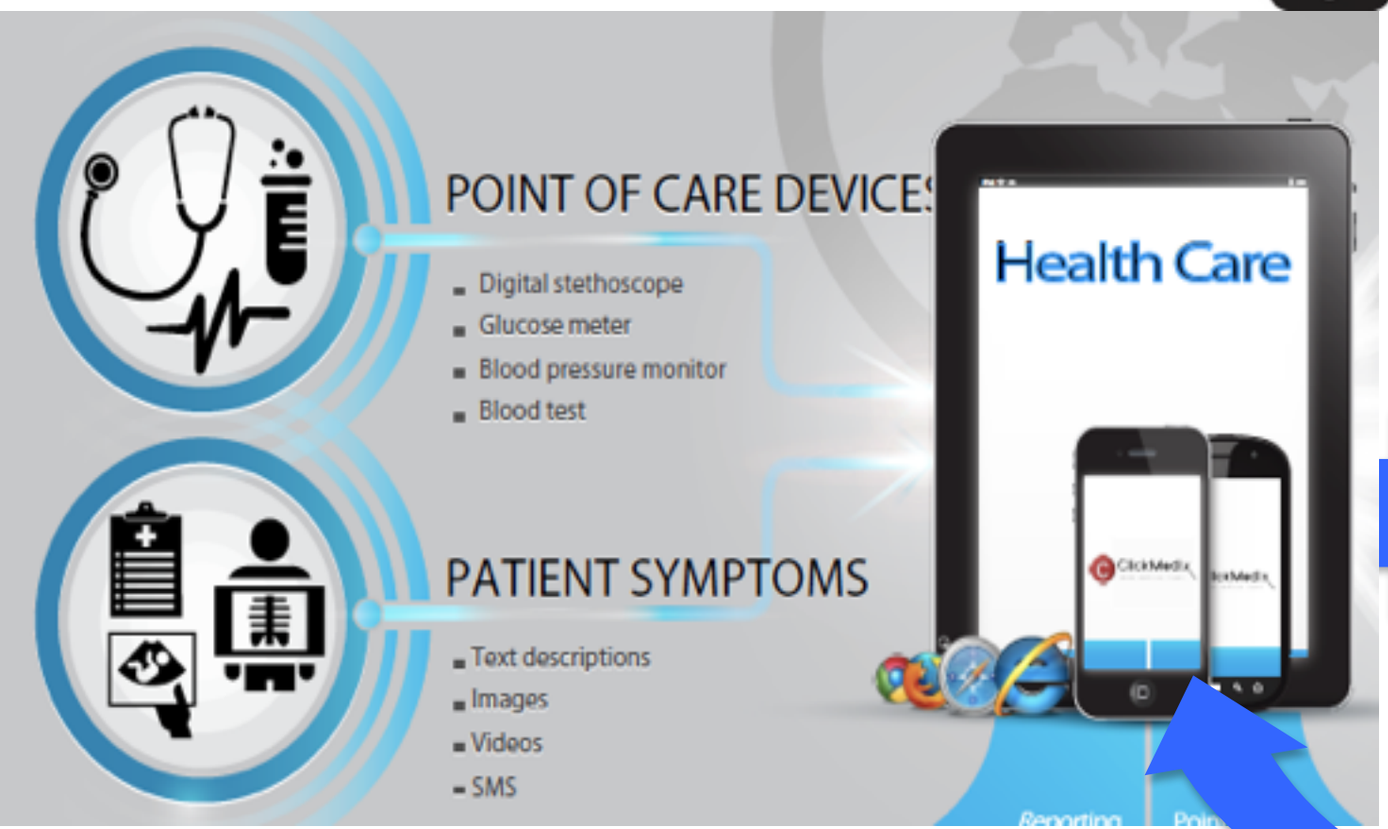
1. Design Service Chain to Fit Doctor's Workflow





2. Connect Doctors and Patient Communities



< 5 minutes per patient, 4-10X More Patients / Hour

Speedup Treatment < 3 days

Diagnose → Treat → Follow Up

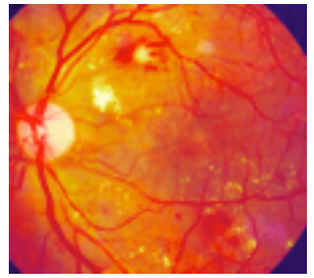
Integrate With Diagnostics Tools

Digital Stethescope

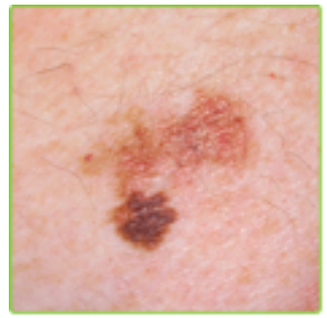
Otoscope

Fundus Scope for Diabetes Retinapathy

EKG



Dermatoscope



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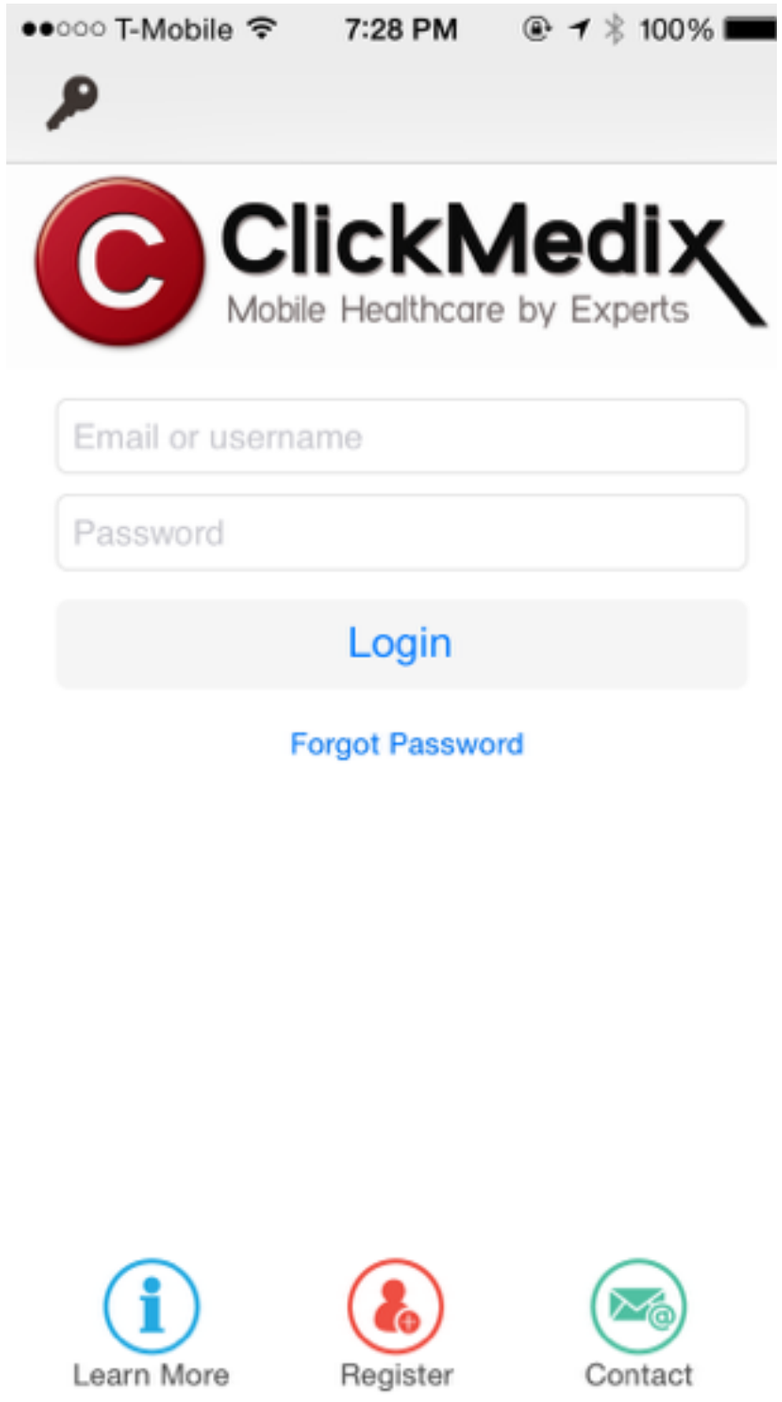
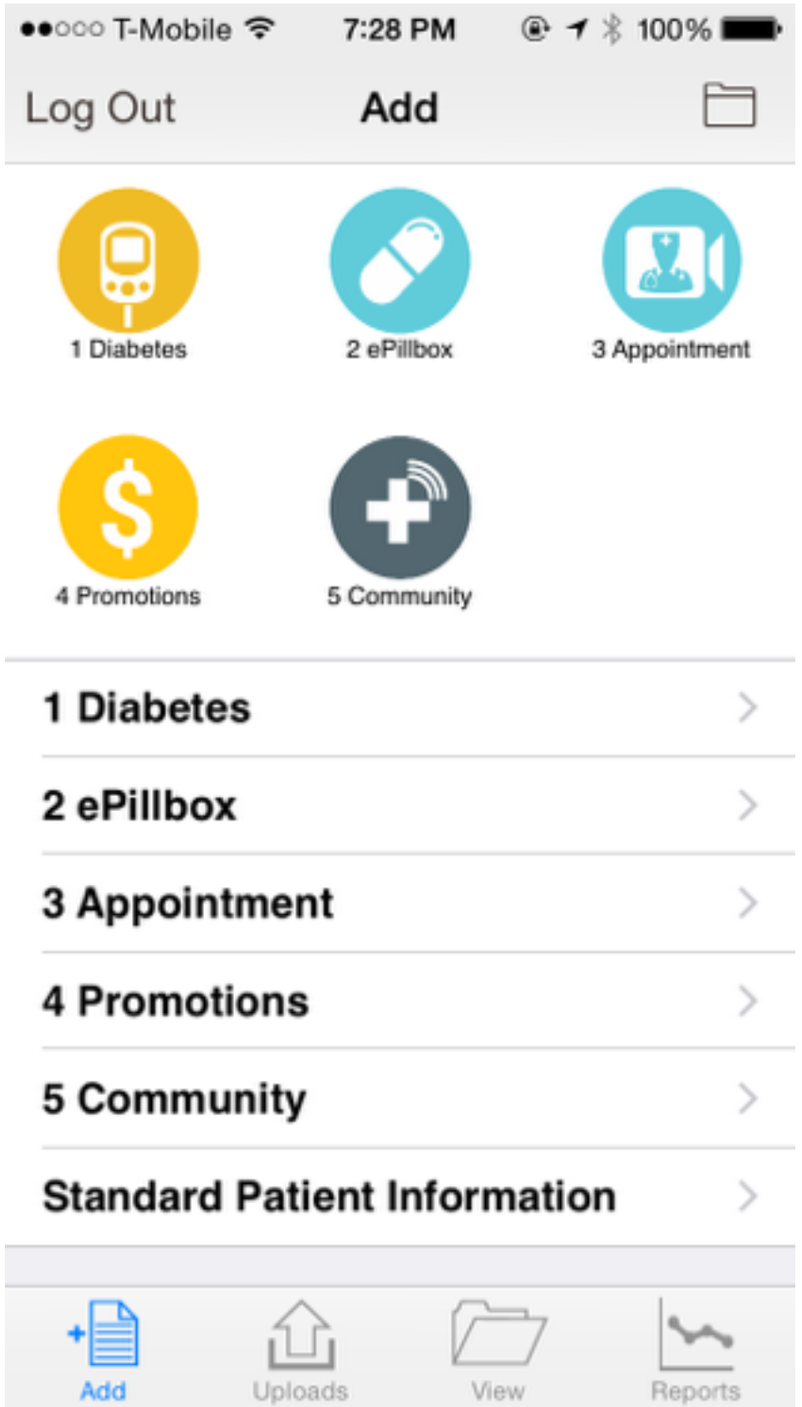
Triage with Risk Assessment and Tele-Consultation





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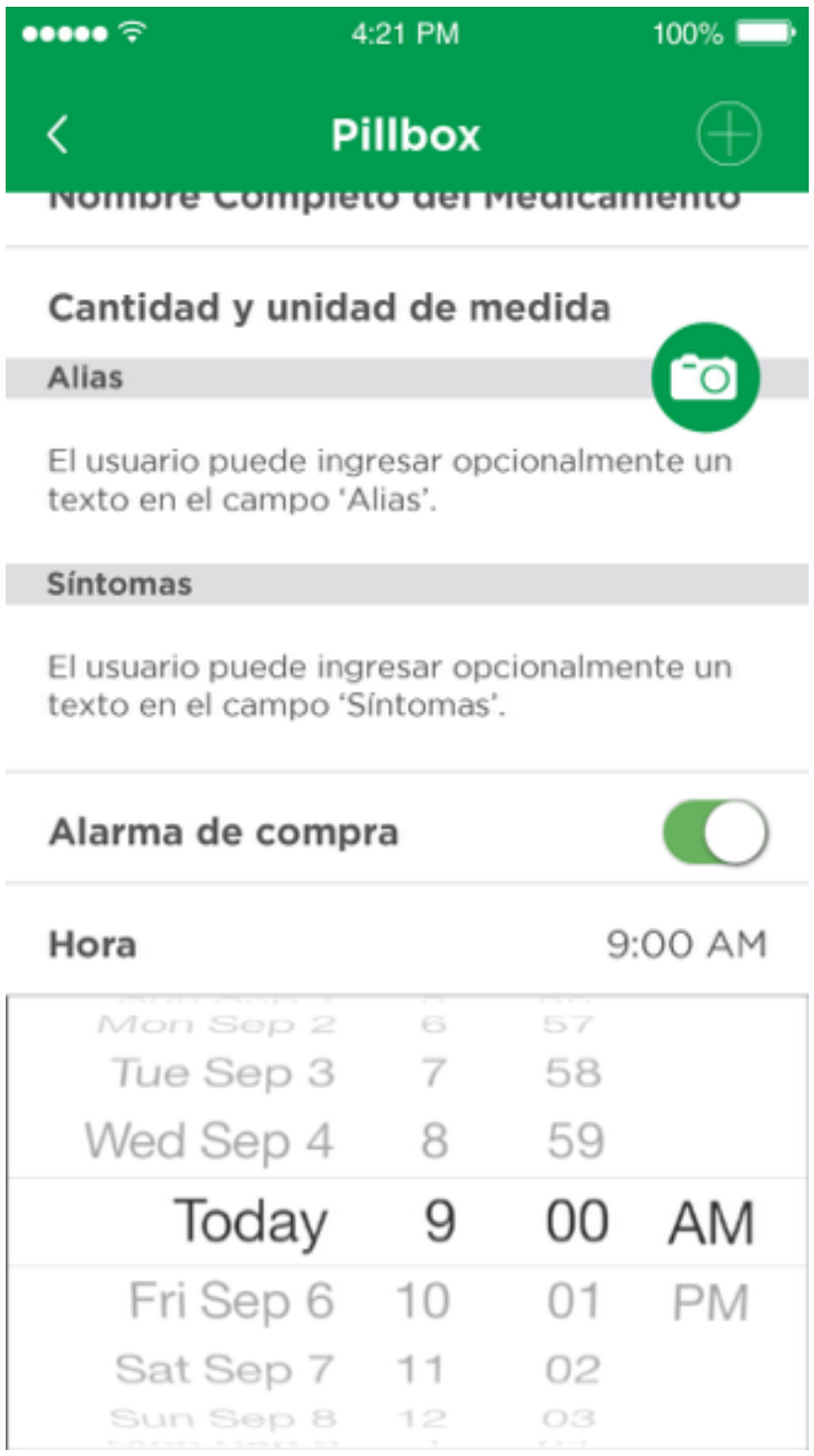
Customize Patient Mobile Apps to Empower Patients to Self-Manage



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3. NEW Services: Tele-Dermatology (3-5 minutes per consultation)

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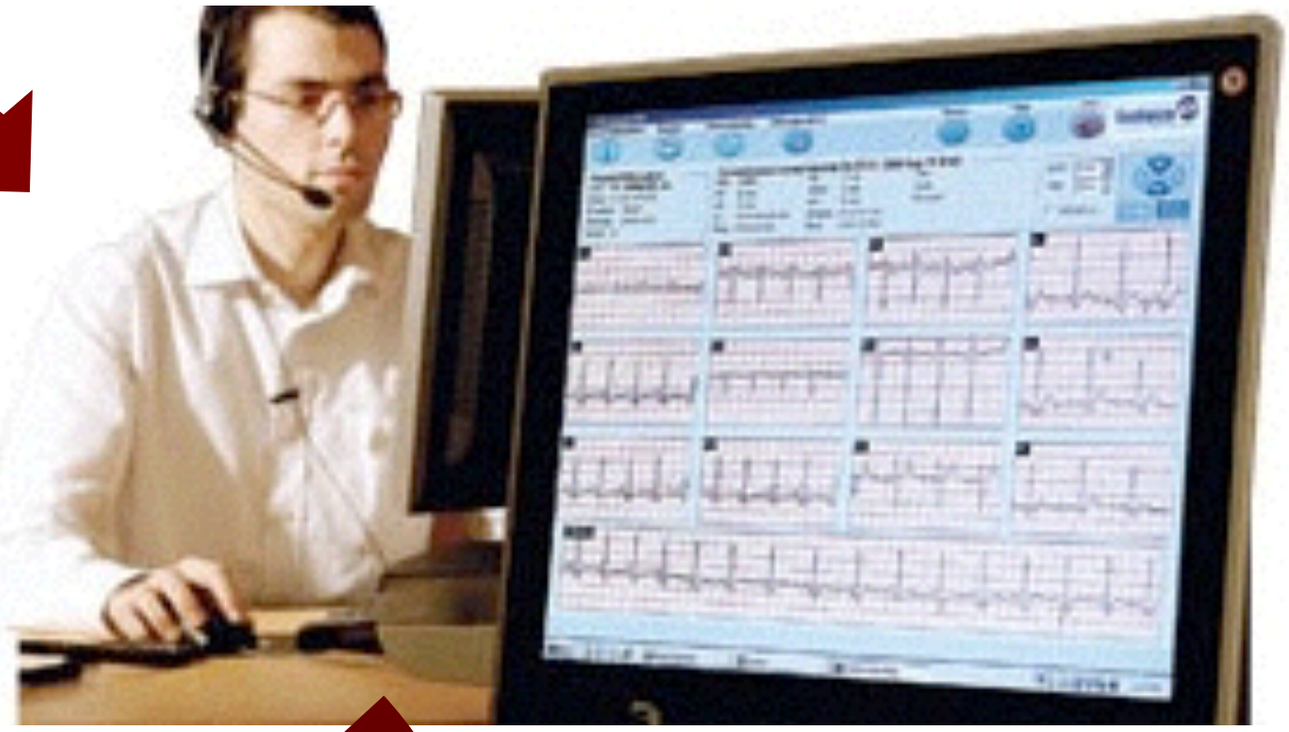
Tele-Cardiology (20 sec / EKG Reading)



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Consumerizing Healthcare: Ear Infections

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Medtronic
When Life Depends on Medical Technology

In the past 3 years, ClickMedix enabled Medtronic to **screen** **<u>200,000+ patients</u>** with just 9 health workers.

Health Worker Capturing Patient Symptoms Information

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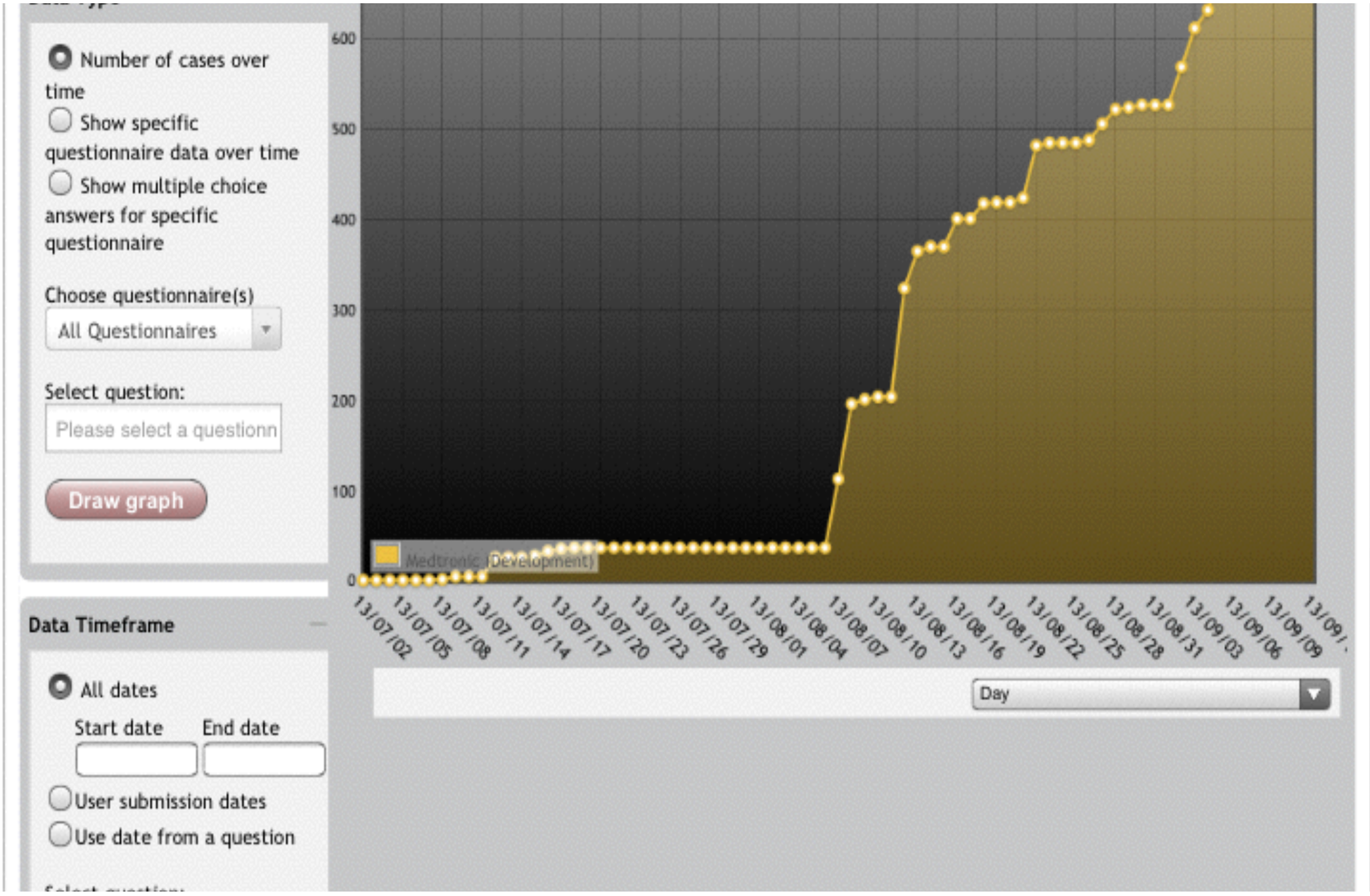
1 Health Worker Screens 500+ Patients / Month or 6,000+ / Year



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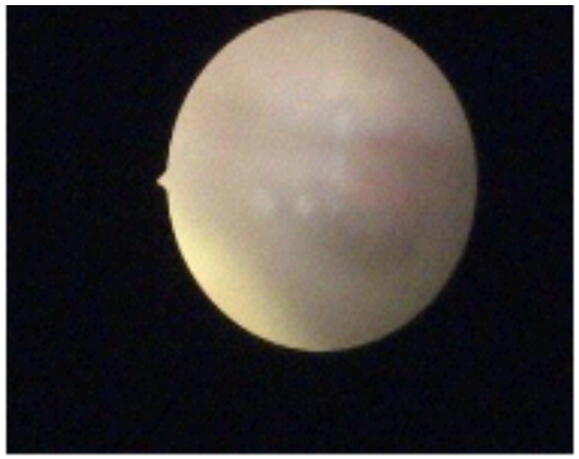
Images of Ear Infections Causing Hearing Loss Used for Training

Caption: r
Tag:

Caption: right
Tag:

Caption: laft
Tag:



Caption:
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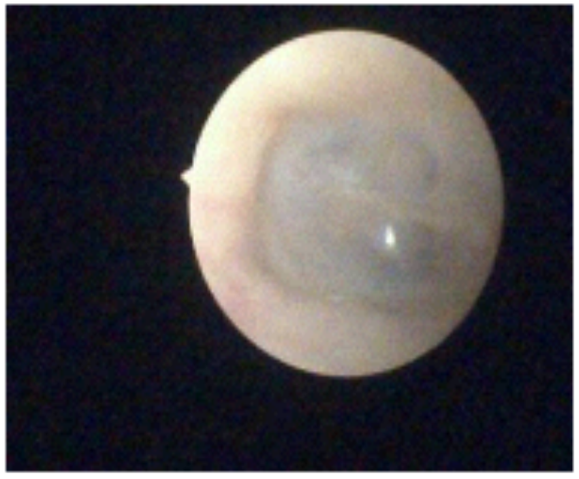

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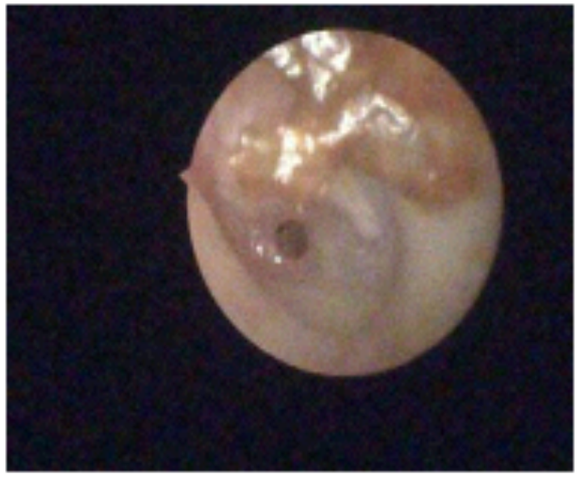

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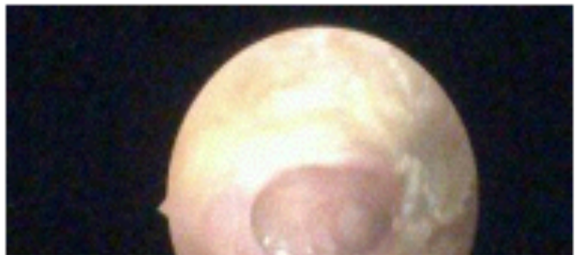

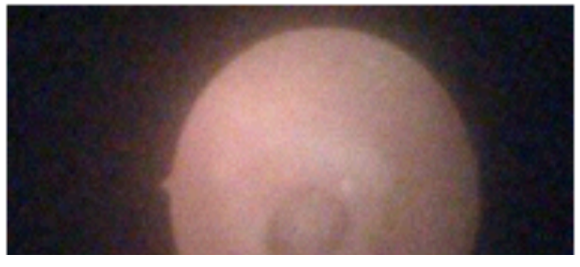

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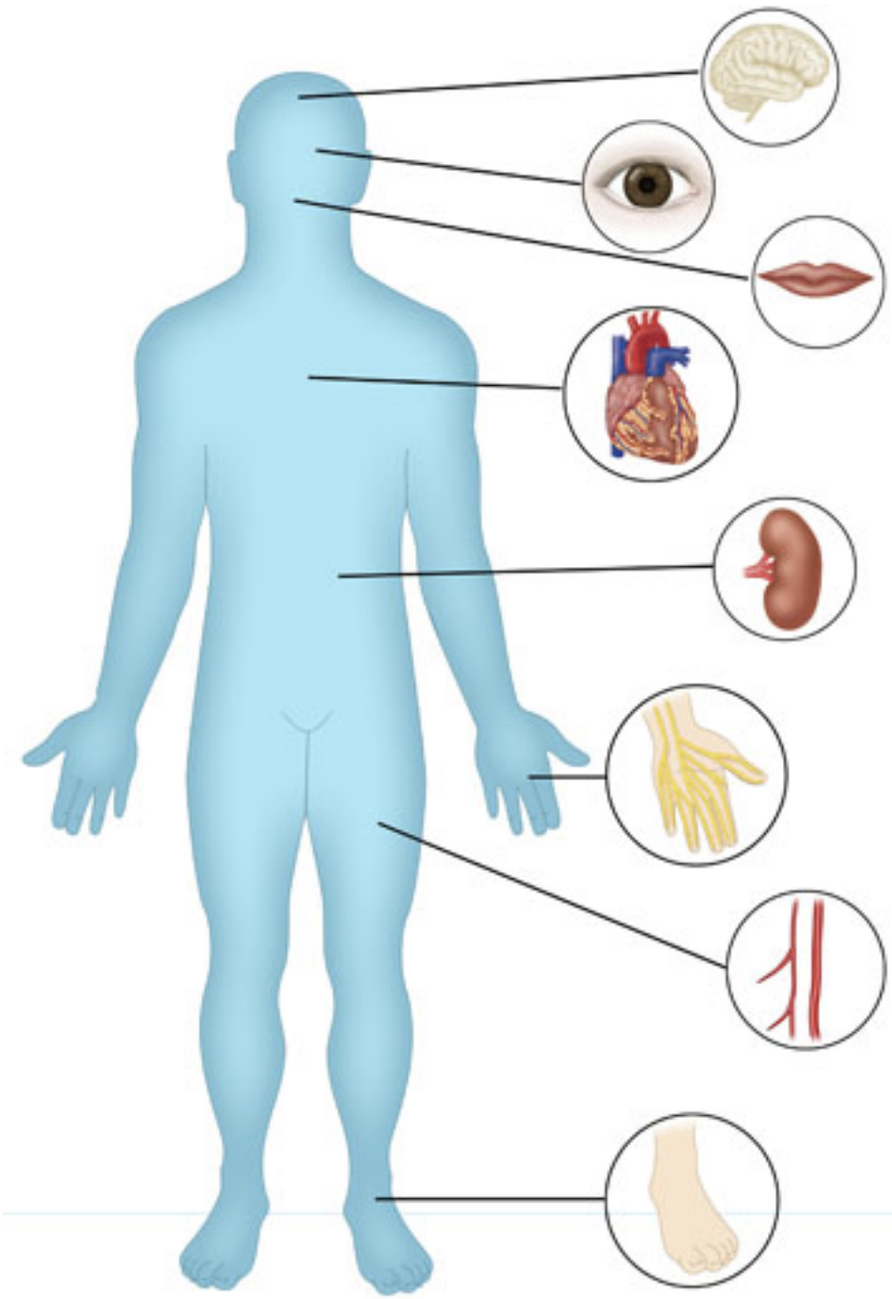
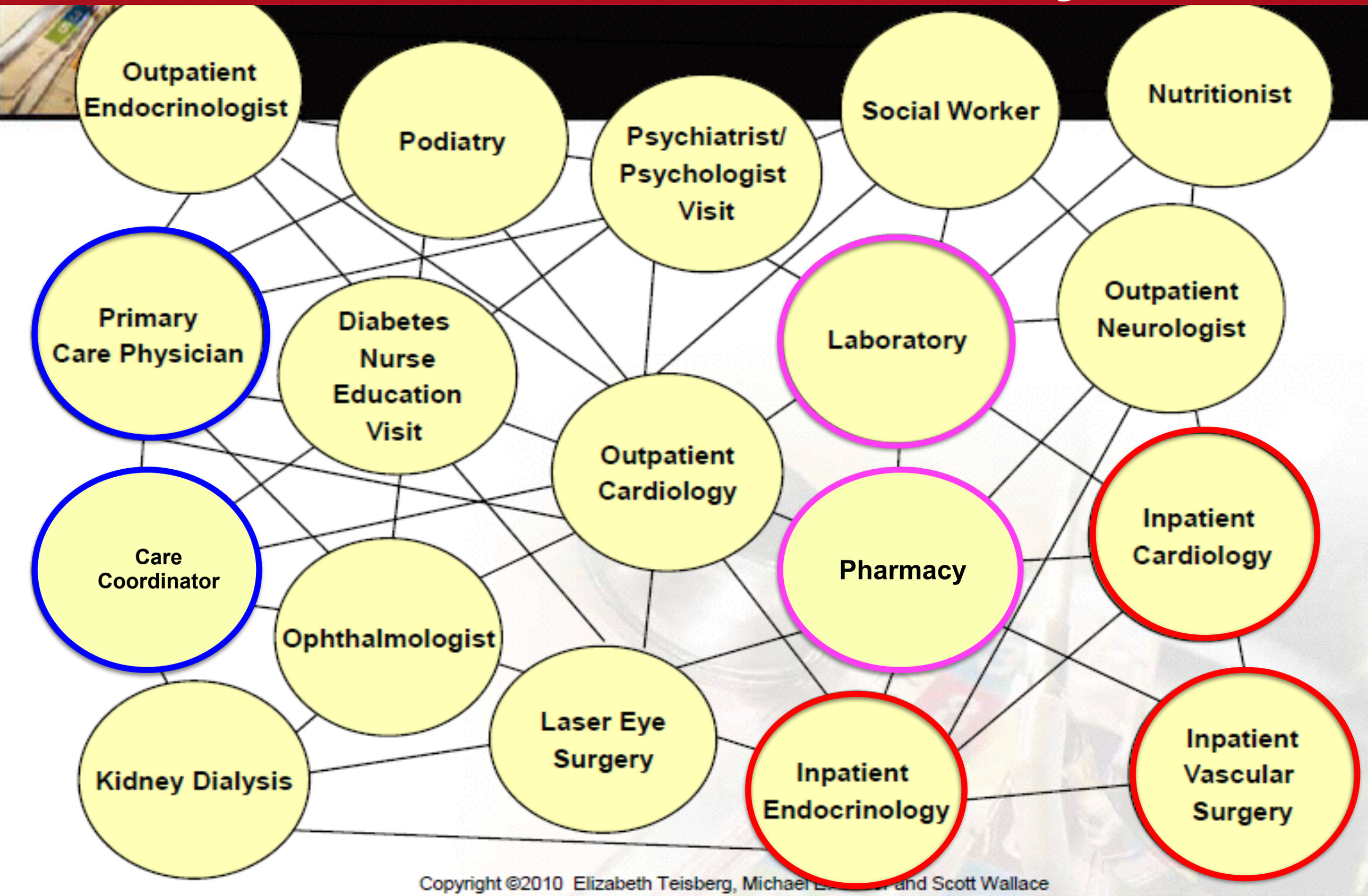
Consumerizing Healthcare: Chronic Diseases

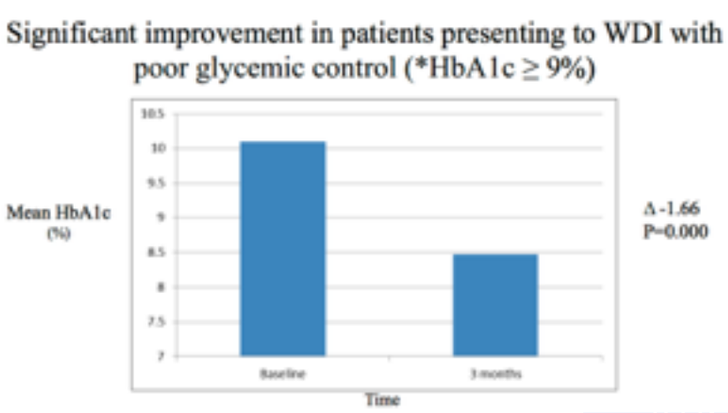
Full-Person Comprehensive Care



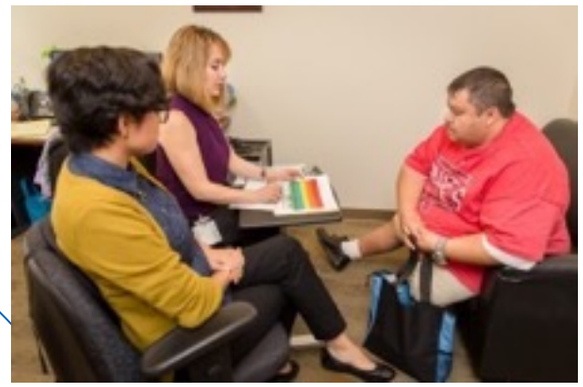
Current Patient Journey



How it Works: Guided Patient Journey



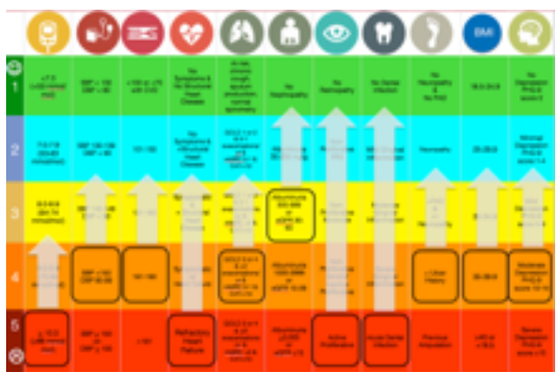
Discovery / Assessment



Understanding
Health worker helps patient understand their condition

treatment plan
Health worker use mobile

See Results
Track results and improvements



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Patient and Doctor on the Same Page

1	<7.0 (<53 mmol/ mol)	SBP < 130 DBP < 80	<100 or <70 with CVD	No Symptoms & No Structural Heart Disease	At risk; chronic cough, sputum production; normal spirometry	No Nephropathy	No Retinopathy	No Infection	No Neuropathy & No PAD	18.5-24.9	No Depression PHQ-9 score 0
2	7.0-7.9 (53-63 mmol/ mol)	SBP 130-139 DBP < 90	101-130	No Symptoms & +Structural Heart Disease	GOLD 1 or 2 & 0-1 exacerbations/yr & mMRC 0-1 & CAT<10	Albuminuria 30-299 mg/g	Non-Proliferative Mild	Mild Inflammation	Neuropathy	25-29.9	Minimal Depression PHQ-9 score 1-4
3	8.0-8.9 (64-74 mmol/ mol)	SBP 140-149 DBP < 90	131-160	Symptomatic & + Structural Heart Disease	GOLD 1 or 2 & 0-1 exacerbations/ yr & mMRC ≥2 & CAT≥10	Albuminuria 300-999 or eGFR 30- 60	Non-Proliferative Moderate	Med	+PAD & +/-Neuropathy	30-34.9	Mild Depression PHQ-9 score 5-9
4	9.0-9.9 (75-85 mmol/ mol)	SBP <150 DBP 90-99	161-190	Symptomatic w/ Heart Failure	GOLD 3 or 4 & ≥2 exacerbations/yr & mMRC 0-1 & CAT<10	Albuminuria 1000-2999 or eGFR 15-29	Non-Proliferative Severe/ Inactive Proliferative	Moderately high	+ Ulcer History	35-39.9	Moderate Depression PHQ-9 score 10-14
5	≥ 10.0 (≥86 mmol/ mol)	SBP ≥ 150 -or- DBP ≥ 100	>191	Refractory Heart Failure	GOLD 3 or 4 & ≥2 exacerbations/ yr & mMRC ≥2 & CAT≥10	Albuminuria ≥3,000 or eGFR ≤15	Active Proliferative	CSOM / ASOM /Foreign body	Previous Amputation	≥40 or <18.5	Severe Depression PHQ-9 score ≥15

See Progress that Everyone Understands

1	<7.0 (<53 mmol/ mol)	SBP < 130 DBP < 80	<100 or <70 with CVD	No Symptoms & No Structural Heart Disease	At risk; chronic cough, sputum production; normal spirometry	No Nephropathy	No Retinopathy	No Dental Infection	No Neuropathy & No PAD	18.5-24.9	No Depression PHQ-9 score 0
2	7.0-7.9 (53-63 mmol/ mol)	SBP 130-139 DBP < 90	101-130	No Symptoms & +Structural Heart Disease	GOLD 1 or 2 & 0-1 exacerbations/yr & mMRC 0-1 & CAT<10	Albuminuria 30-299 mg/g	Non-Proliferative Mild	Mild Gingival Inflammation	Neuropathy	25-29.9	Minimal Depression PHQ-9 score 1-4
3	8.0-8.9 (64-74 mmol/ mol)	SBP 140-149 DBP < 90	131-160	Symptomatic & + Structural Heart Disease	GOLD 1 or 2 & 0-1 exacerbations/ yr & mMRC ≥2 & CAT≥10	Albuminuria 300-999 or eGFR 30- 60	Non-Proliferative Moderate	Moderate Gingival Inflammation	+PAD & +/-Neuropathy	30-34.9	Mild Depression PHQ-9 score 5-9
4	9.0-9.9 (75-85 mmol/ mol)	SBP <150 DBP 90-99	161-190	Symptomatic w/ Heart Failure	GOLD 3 or 4 & ≥2 exacerbations/yr & mMRC 0-1 & CAT<10	Albuminuria 1000-2999 or eGFR 15-29	Non-Proliferative Severe/ Inactive Proliferative	Severe Gingival Inflammation	+ Ulcer History	35-39.9	Moderate Depression PHQ-9 score 10-14
5	≥ 10.0 (≥86 mmol/ mol)	SBP ≥ 150 -or- DBP ≥ 100	>191	Refractory Heart Failure	GOLD 3 or 4 & ≥2 exacerbations/ yr & mMRC ≥2 & CAT≥10	Albuminuria ≥3,000 or eGFR ≤15	Active Proliferative	Acute Dental Infection	Previous Amputation	≥40 or <18.5	Severe Depression PHQ-9 score ≥15

Nephrologist and Endocrinologist

Nutritionist

Western University

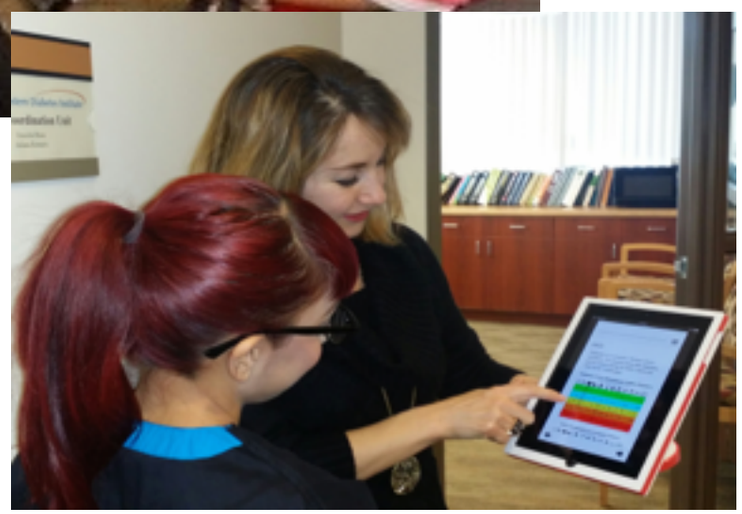
Western Diabetes Institute

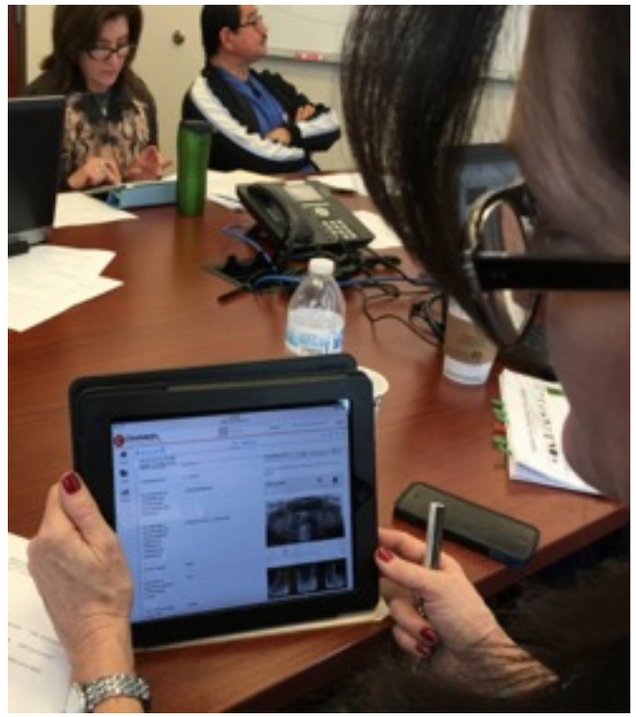
- 25% growth annually
- Contracted by Insurers
- Collaborate with primary care physicians

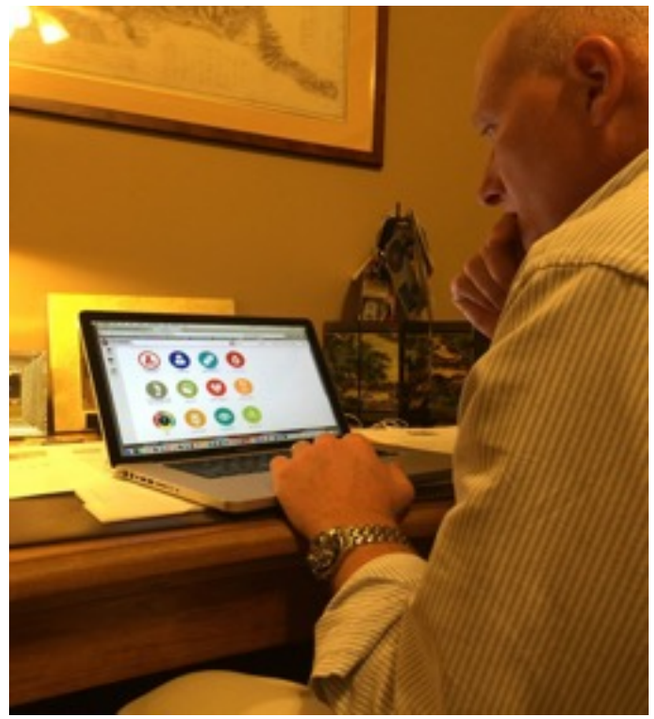
Pharmacist

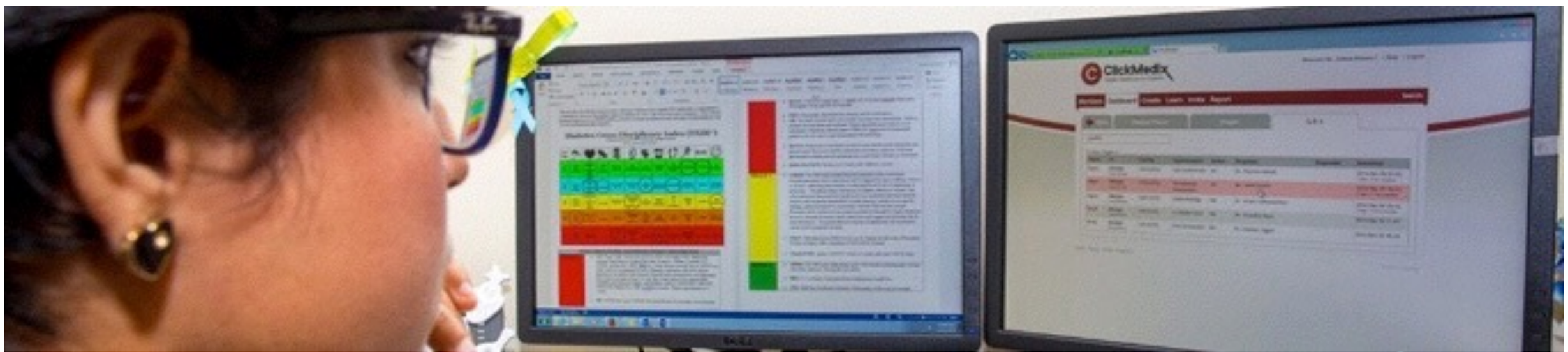
Patient Education

Live-Action Care Coordination Across Health System









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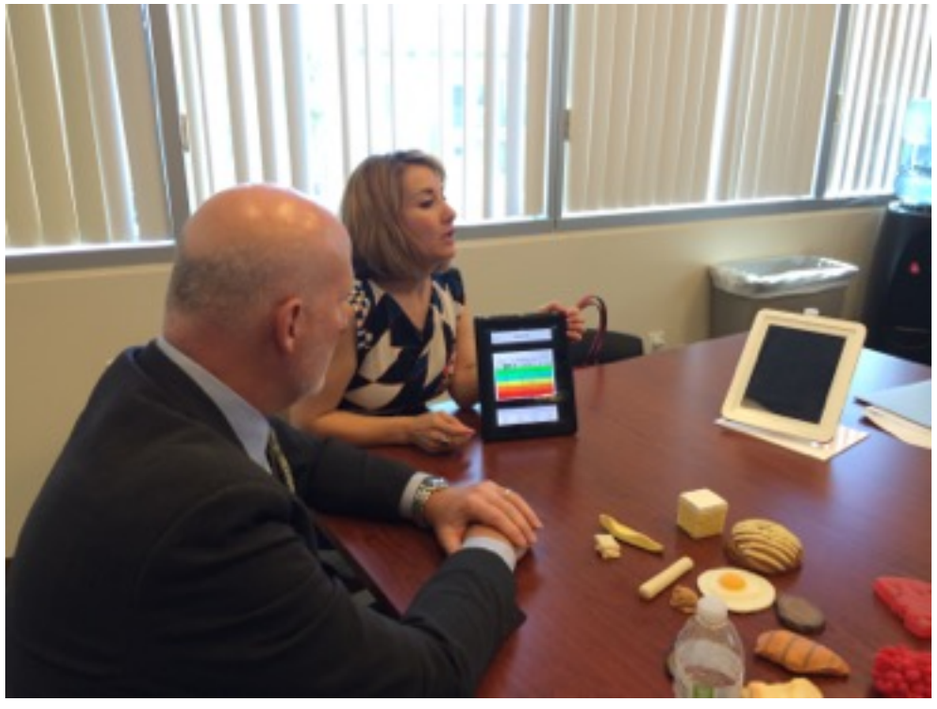
Community Pharmacist-Facilitated Chronic Disease Management



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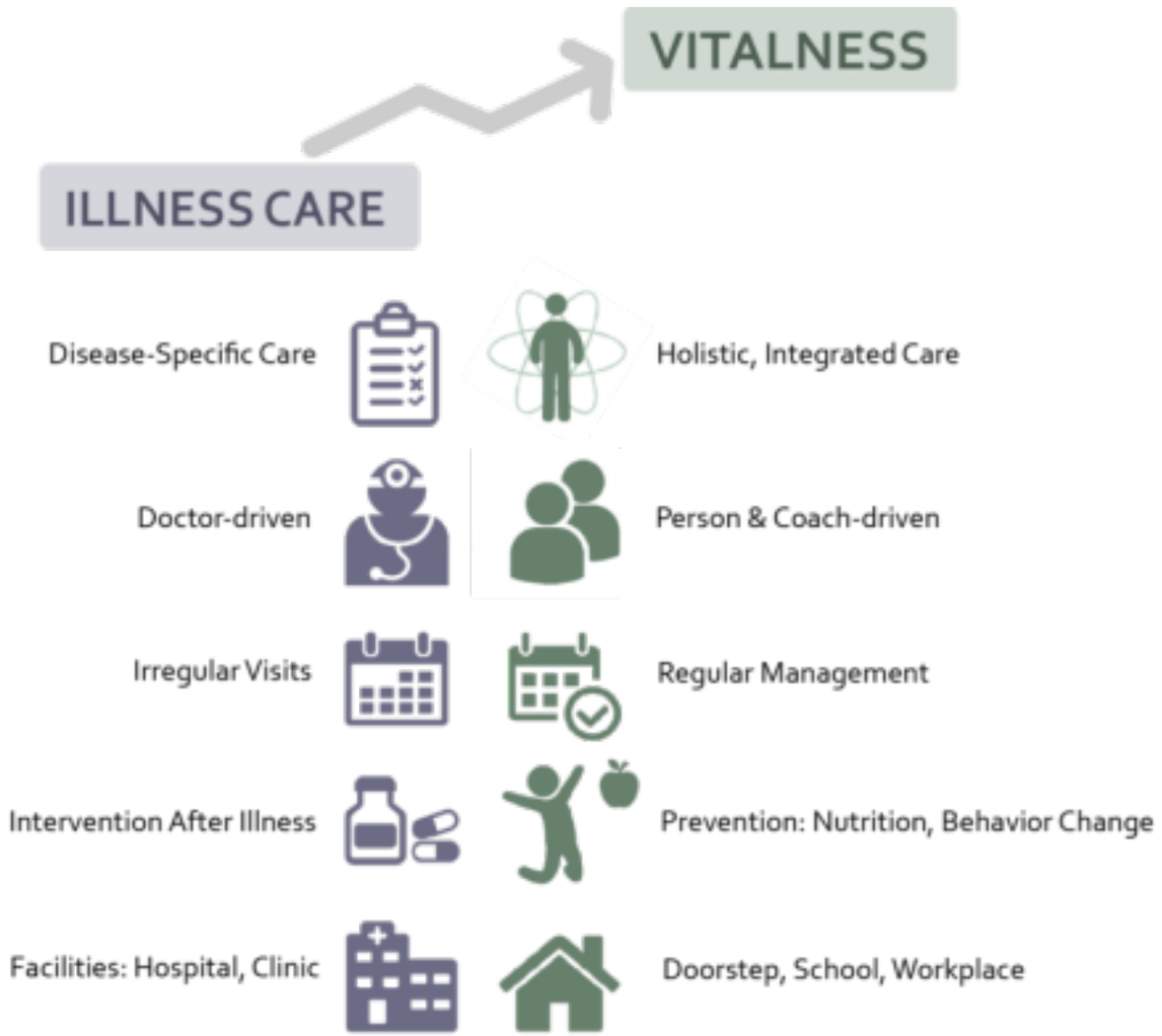
Consumerizing Healthcare: Work Place Vitalness

Transition to Vitalness



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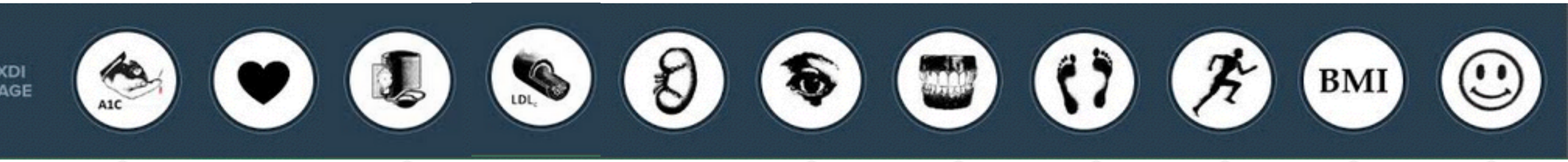
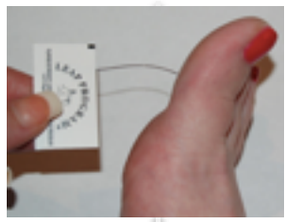
India Pilot Site

Easy-to-Use, Comprehensive Evaluation

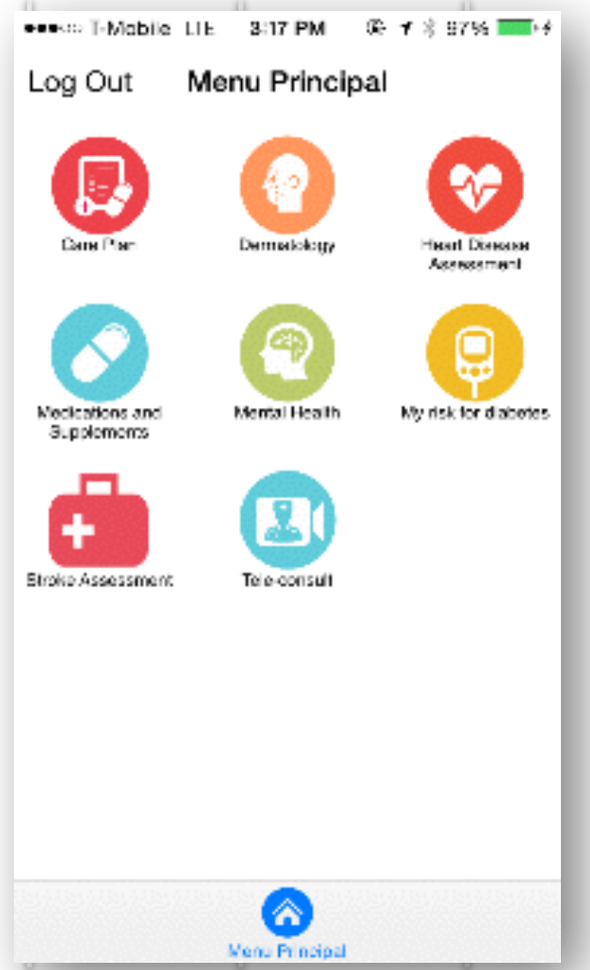
On-Screen Prompts Facilitates Vital Measurements





Filament

Dental probe



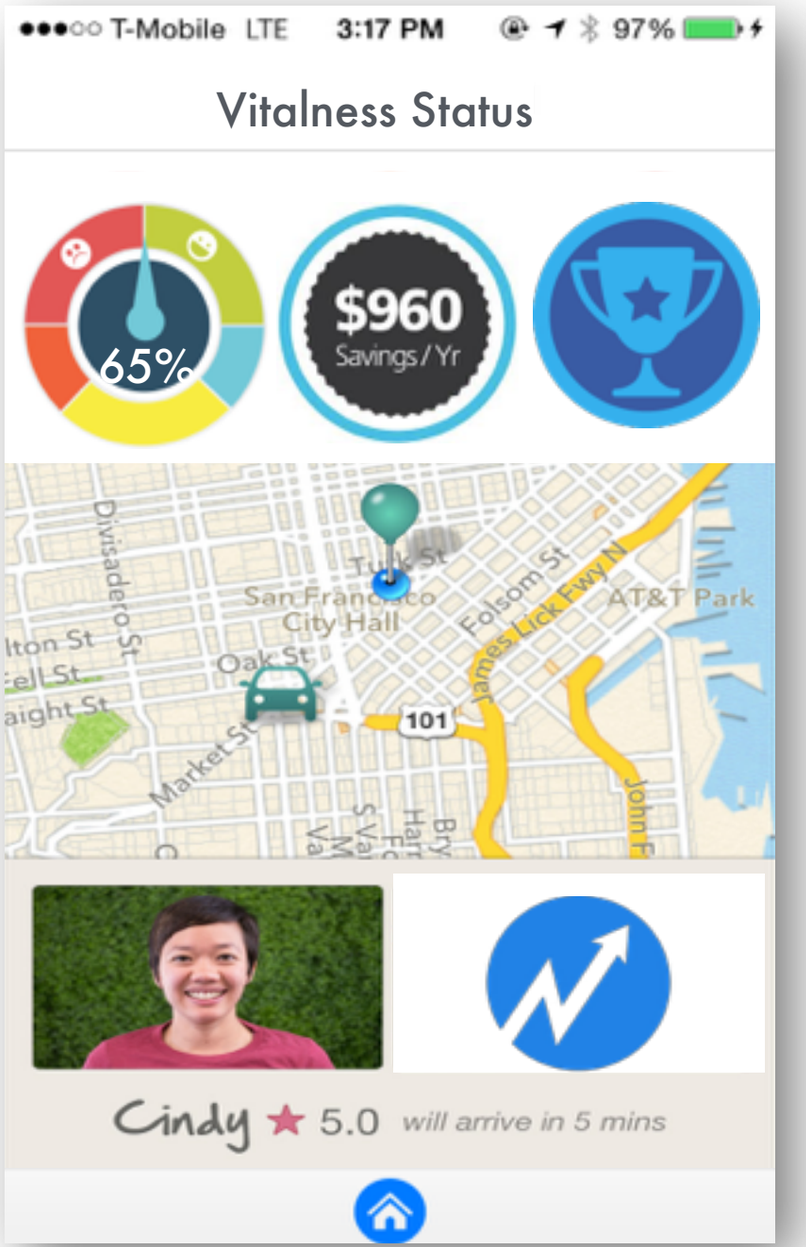
ClickMedix Application

Consumer Wellness AND Healthcare

Personalized Care

Data Transparency
On-Demand Services

Concierge-Service
(doctor or coach)



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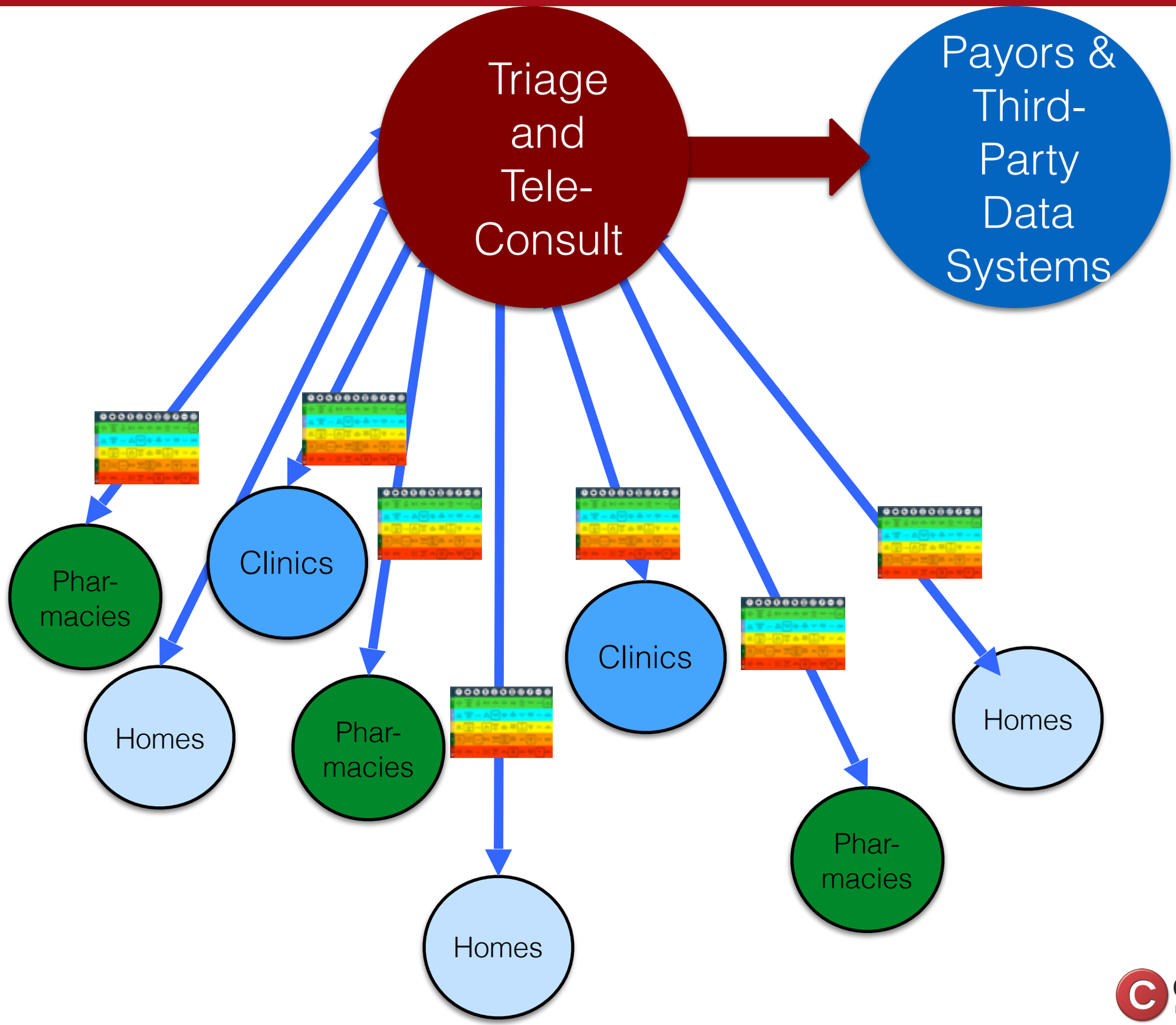
Big, Structured Data for Proactive and Predictive Healthcare



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What You Can Do

Design, build, imagine ???

Improve Health Status

Serve billions and make $billions

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Thank you!

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Consumerizing Healthcare: Screens

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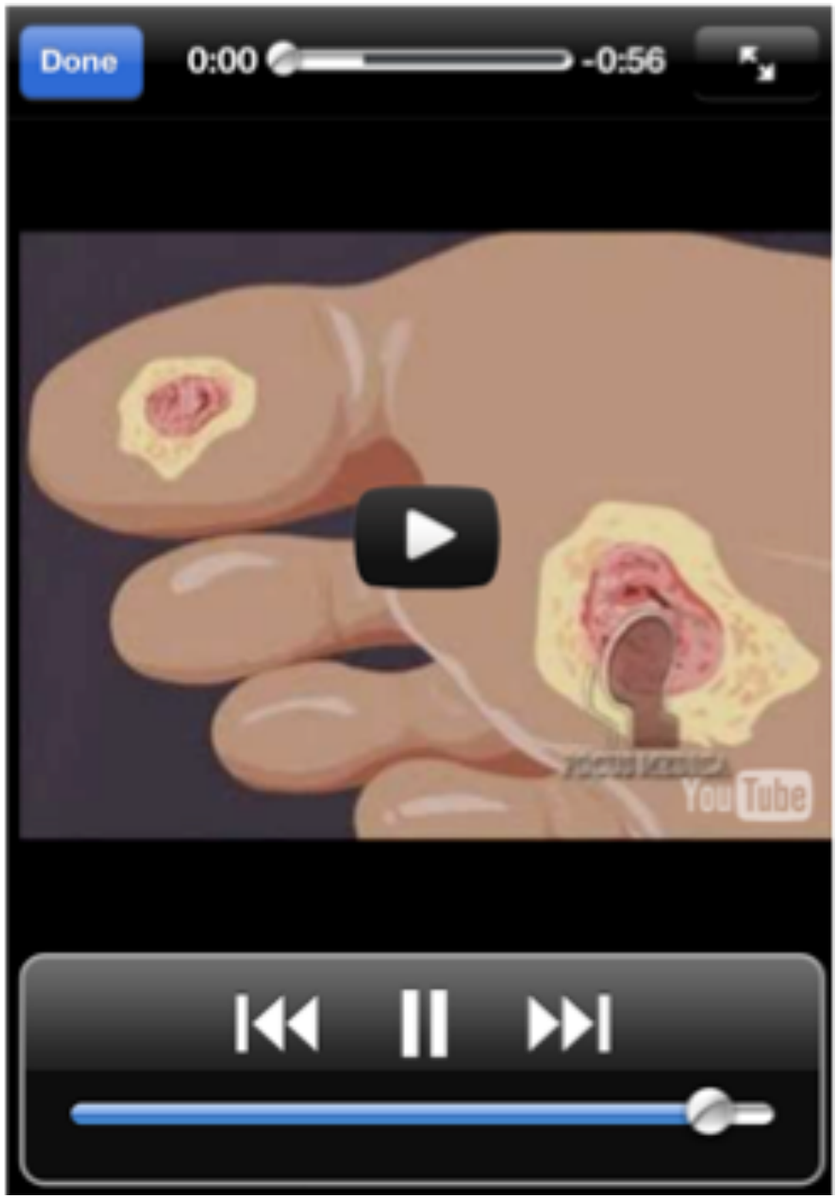
* My risk for diabetes

Diabetes is the #1 cause of death in Bahrain and the highest prevalence disease. What happens if I have diabetes? Watch the short video.

Open Link



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Risks

Diabetes is preventable and some times reversible if detected early. Answer the following questions to assess your risk level so we can begin your plan for prevention.

Are you < 45 years old?

- Yes
- No ✓

Does your mother, father, sister or brother have diabetes?

- Yes ✓
- No

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* My risk for diabetes

Symptoms may or may not be apparent even if you have diabetes. Answer the following questions to assess your risk of diabetes.

Symptoms

Are you experiencing any of these diabetes symptoms?

- Frequent urination ✓
- Unusual thirst ✓
- Extreme hunger
- Unusual weight loss
- Extreme fatigue and irritability
- Frequent infections
- Blurred vision

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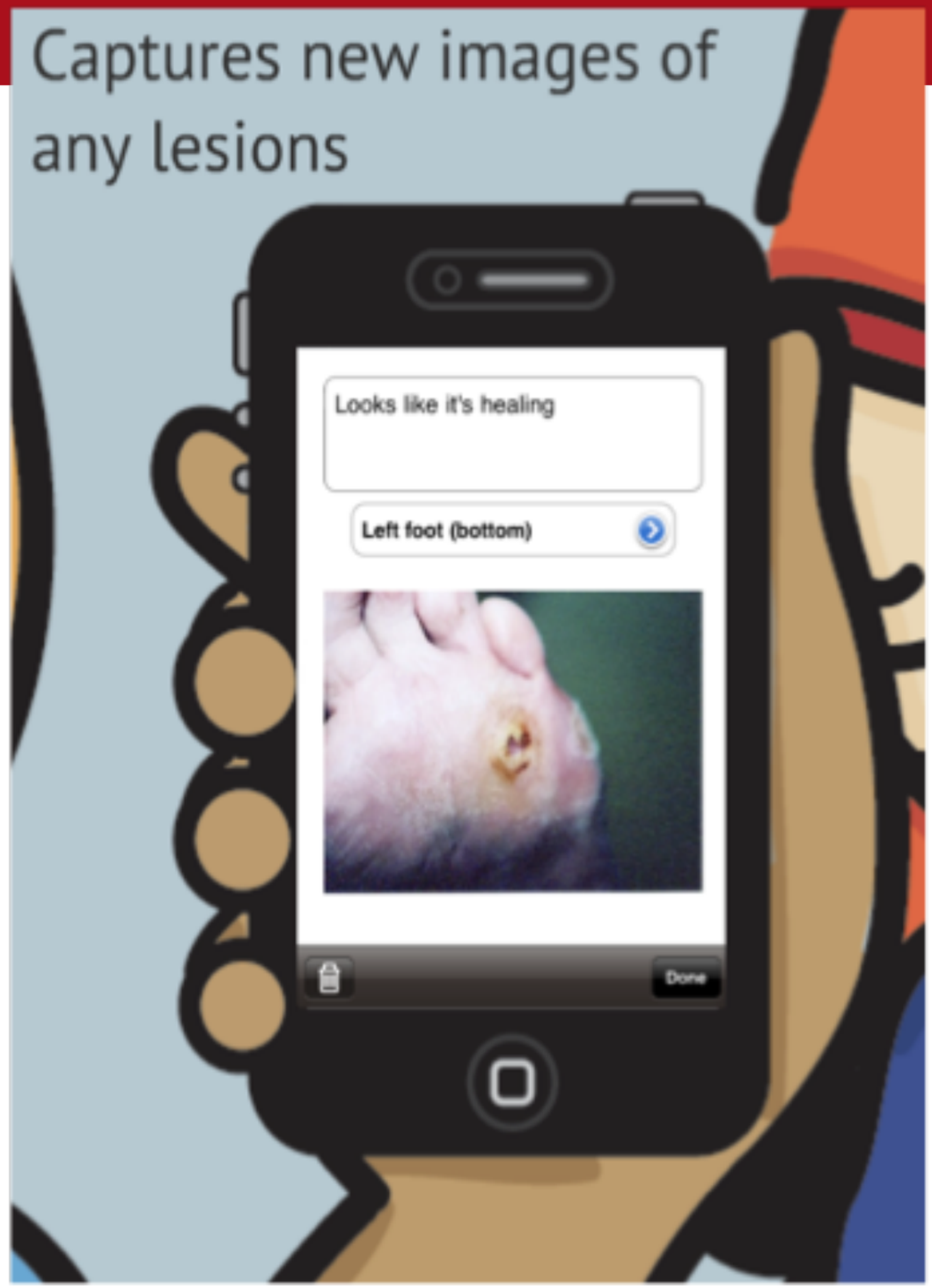
Patient takes a picture and fills out symptoms update from his phone and requests for a telemedicine consultation



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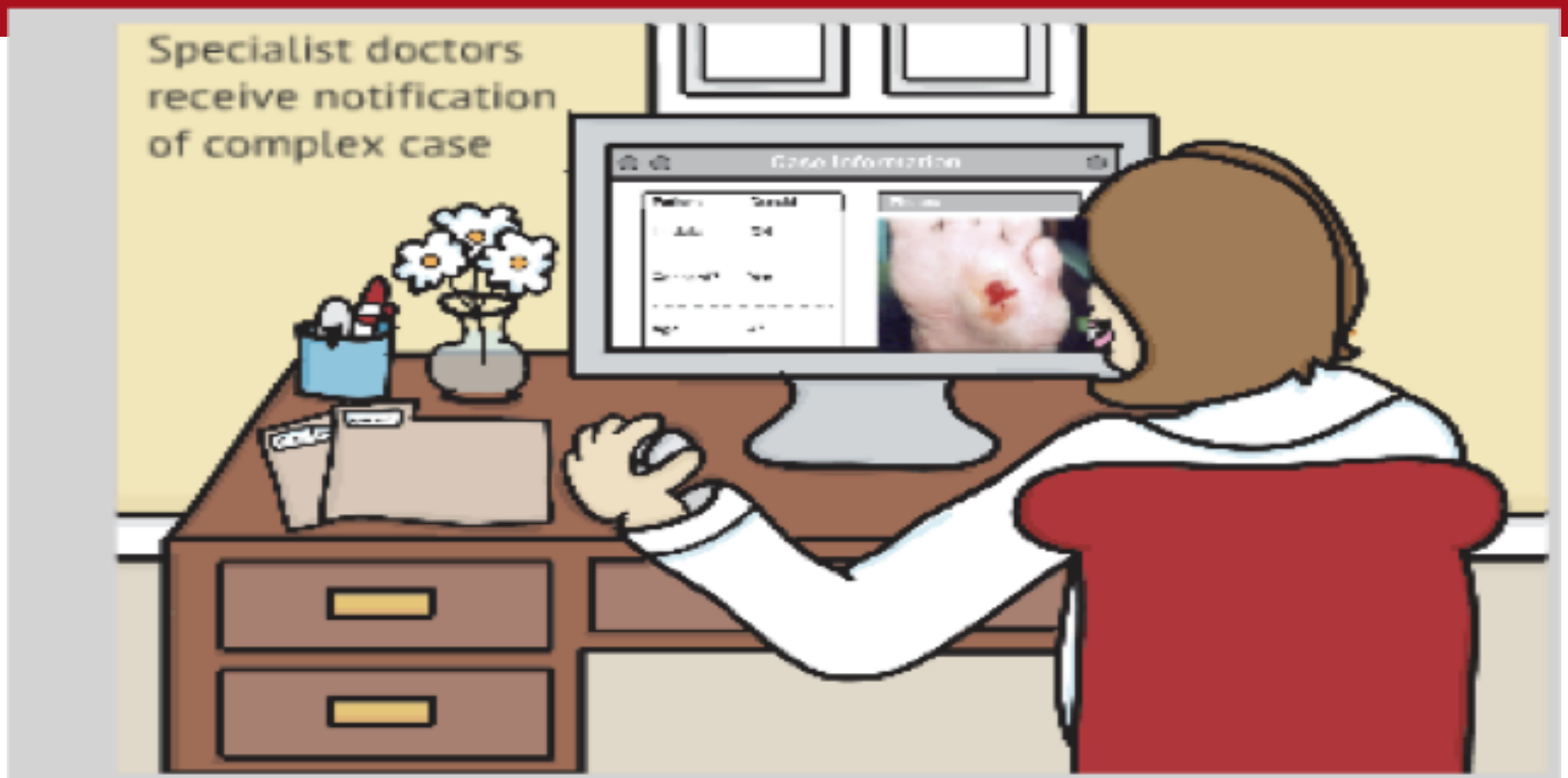

HIPAA-compliant, secure transmission of patient information to remote specialist.

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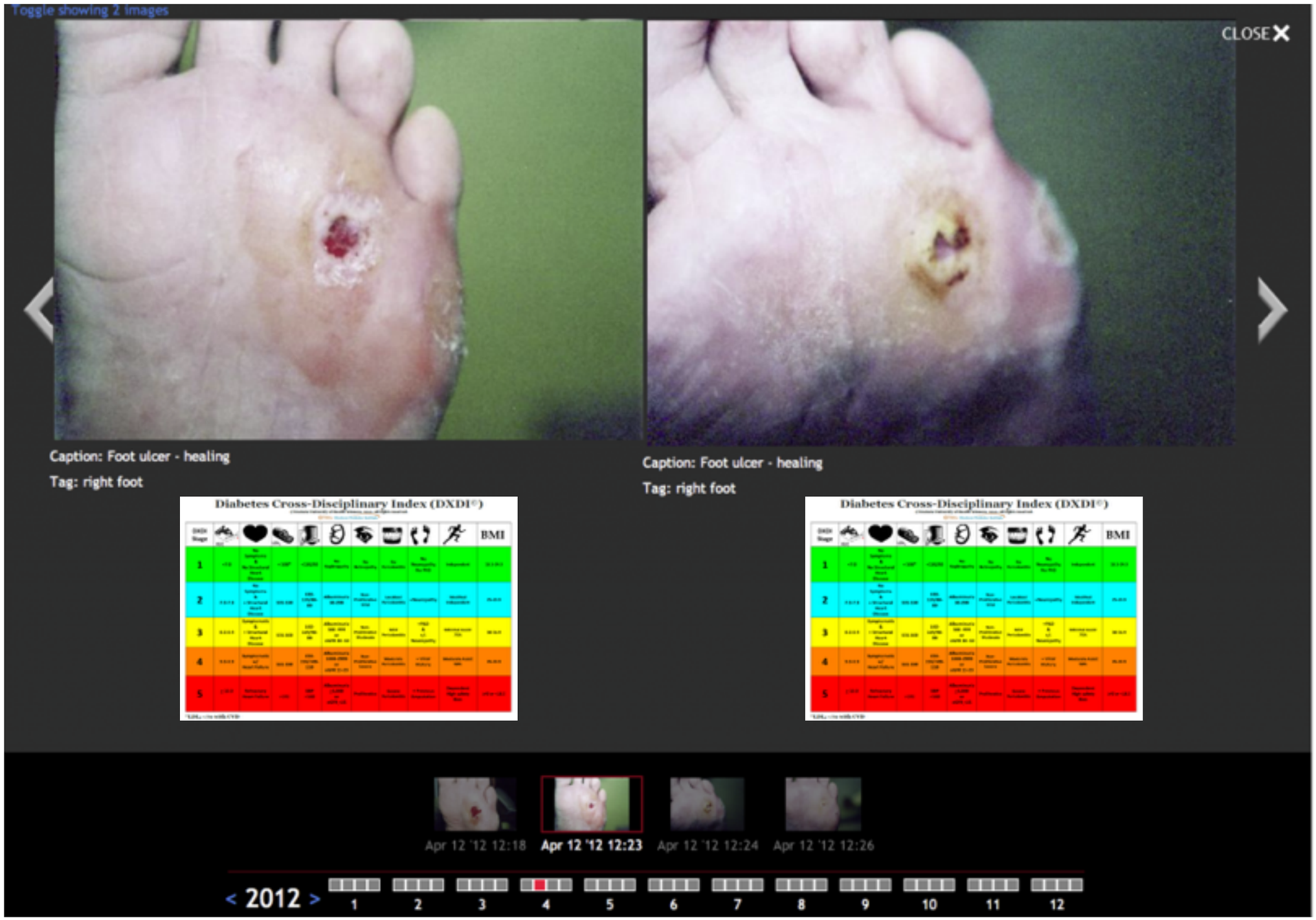
6. Contact Patient to Provide Results and Schedule Follow-Ups



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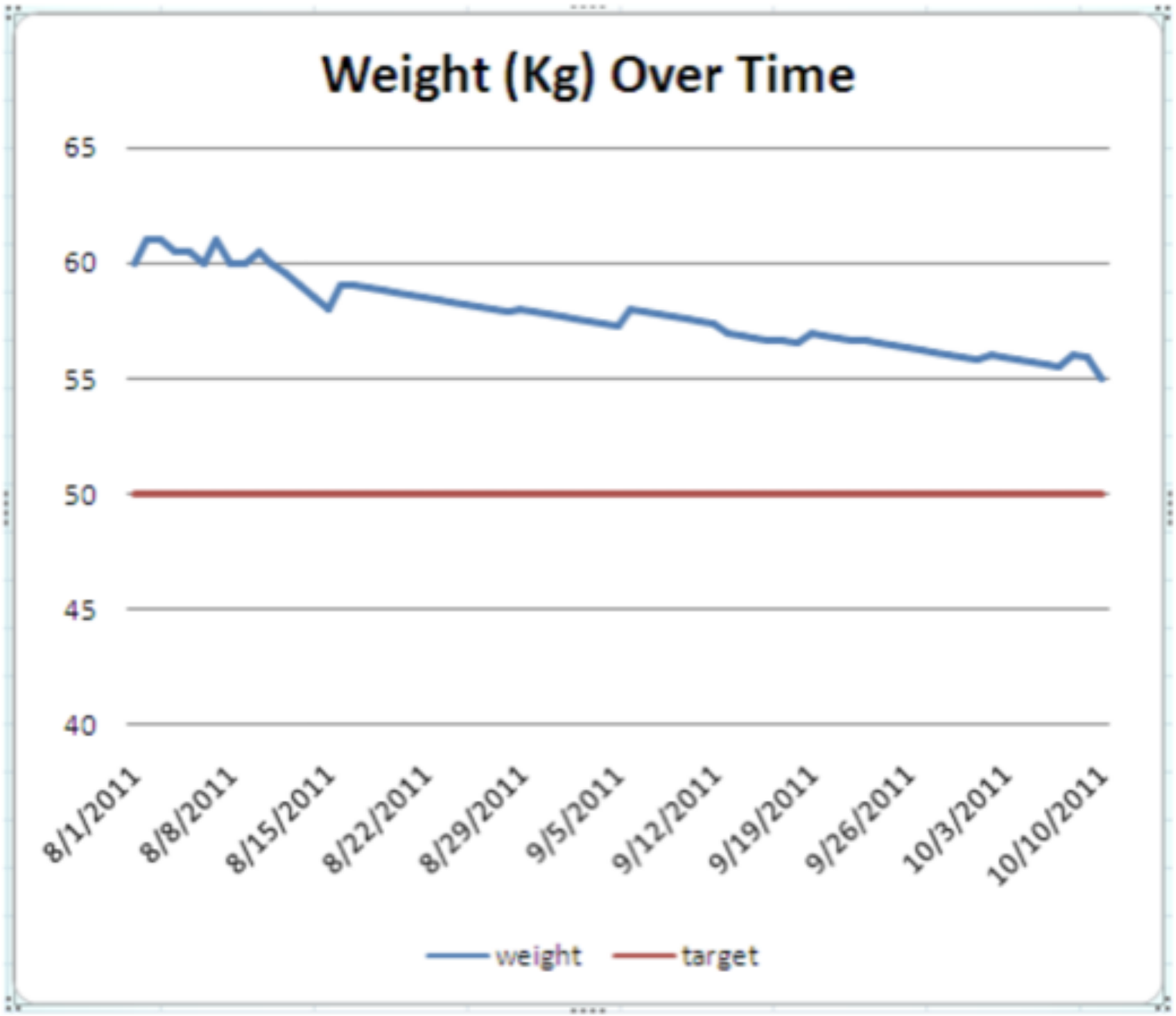
and trend data for additional information



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