HST.S14

Information Systems and Quality Improvement

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Information Systems

1. Sana - Open Source Telemedicine

Information Systems

Information Systems

2. The Challenge of Chronic Disease

Sana

✦ Multi-disciplinary research group at MIT CSAIL

✦ Free open source cellphone-based telemedicine platform

✦ Distributed network of volunteers

✦ Not just technology

sana.mit.edu

sustainable change

health system strengthening

quality improvement

capacity building

<hard coded> algorithms to empower front line health workers

Chronic

CV
Diabetes
Respiratory
TB/HIV/Malaria

Acute

ER Minors
Surgery Dx/Fu
TB/Malaria/HIV
Ca Screening

Child

IMCI
Development

Mental

Anxiety
Depression
Psychosis
Personality Disorder
Organic

Womens

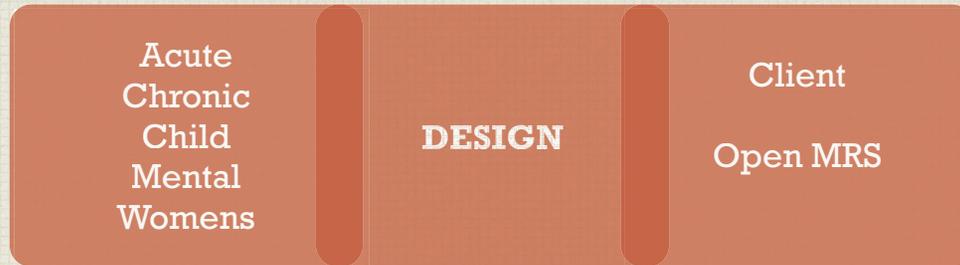Family Planning
Abortion
Antenatal
Delivery
Post Natal

Primary
Secondary
Tertiary

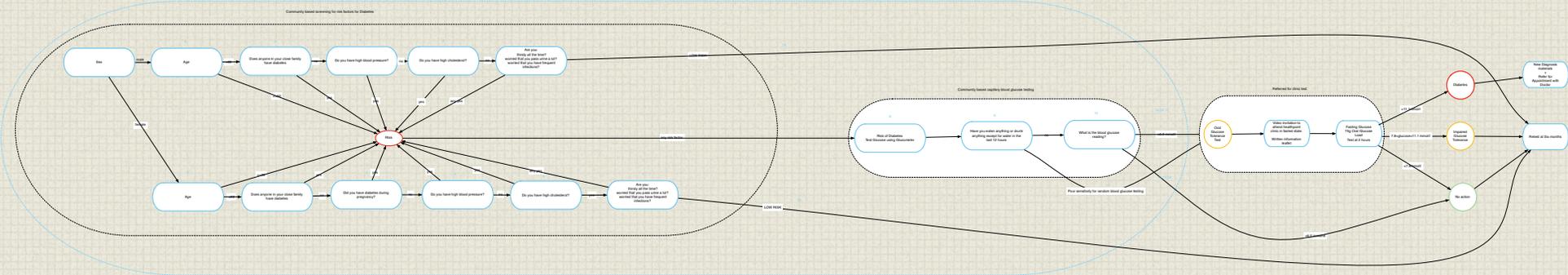# The process

What *Why*

An example

eHealthpoints

- Network of 38 clinics in rural Punjab, India

- Walk in primary care and clean water

- Currently acute walk in care. Want to move into chronic disease management

- First condition : Diabetes

- First challenge : Screening to find cases in community so they can be treated in clinic
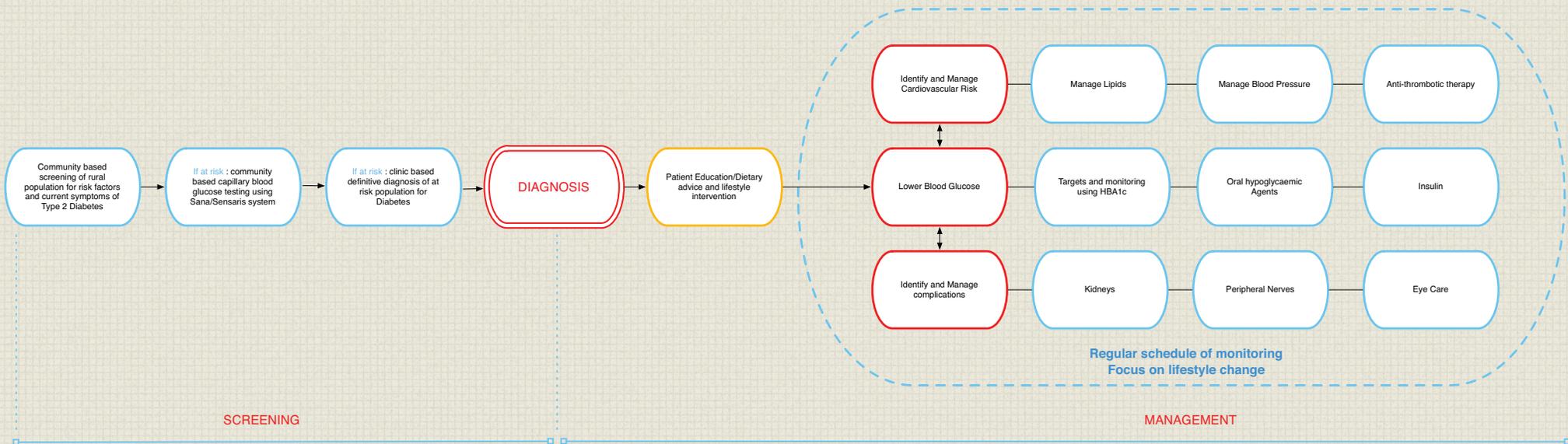
The Project

- Protocol for Diabetes Screening

  - v1 international

  - v2 local

- Client developed. Server implemented

- Pilot

eHealthpoints

eHealthpoints

Community based screening of rural population for risk factors and current symptoms of Type 2 Diabetes

→

If at risk : community based capillary blood glucose testing using Sana/Sensaris system

→

If at risk : clinic based definitive diagnosis of at risk population for Diabetes

→

DIAGNOSIS

→

Patient Education/Dietary advice and lifestyle intervention

→

Identify and Manage Cardiovascular Risk — Manage Lipids — Manage Blood Pressure — Anti-thrombotic therapy

Lower Blood Glucose — Targets and monitoring using HBA1c — Oral hypoglycaemic Agents — Insulin

Identify and Manage complications — Kidneys — Peripheral Nerves — Eye Care

Regular schedule of monitoring
Focus on lifestyle change

SCREENING

MANAGEMENT

The Project

1. Implementation by local team needs to be managed

2. Collect data and evaluate screening

    1. number screened

    2. case finding rate

Experiment

1. With UC Berkeley

2. 2 Interventions

    1. Committment Contract

    2. Price discount

Lessons

✦ Technology but not just technology

✦ Non Communicable diseases...

Non-Communicable Disease

✦ **Cognitive Bias**: Immediate gain.

✦ **Environment**: Obesogenic.

✦ **Time discounting**: Today's behaviour. Tomorrow's disease.

✦ **Primary Care**: Long feedback cycle. Dimensionality.

✦ **Risk**: Not understood…

Room for innovation

Room for innovation

✦ Metadata: Distributed sensors. Predictive models.

✦ Reframe risk: **Resilience**.

✦ Feedback: Connected to index behaviour.

✦ Simplify: Collapse to 1 dimension...

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