

# Diagnostics Technology and Patient Care

5th Feb 2011

# A few observations from controlled studies

- \* 60% of all patients treated for Type II diabetes have blood sugars that exceed recommended level
- \* 58% of patients treated for hypertension does not conform to recommended targets
- \* 17% of patients with heart disease ever reach the cholesterol management goals
- \* 32% of patients who received placebo also experienced 50% improvement in symptoms

Is medical science still  
at best be an art?

Our inability to precisely diagnose disorders based on root causes is the key reason

Consistently effective therapy is possible only with precise diagnosis

# Human body has a very limited vocabulary to declare presence of disease

- \* More diseases than number of physical symptoms; Diseases end up sharing symptoms
- \* Fever could be a symptomatic manifestation of a range of diseases from ear infection to Hodgkin's lymphoma
- \* Hypertension could symptom of many diseases.....

When the underlying disease is not properly diagnosed, rule based processes don't yield desired patient outcomes

# Spectrum of Care Provisioning

Diagnostics technology is the enabler

## Intuitive Medicine

- Diagnosis by symptom
- Low certainty on efficacy of therapy

==  
Skill and judgment of costly physicians

## Empirical Medicine

- Pattern recognition
- Evidence based medicine

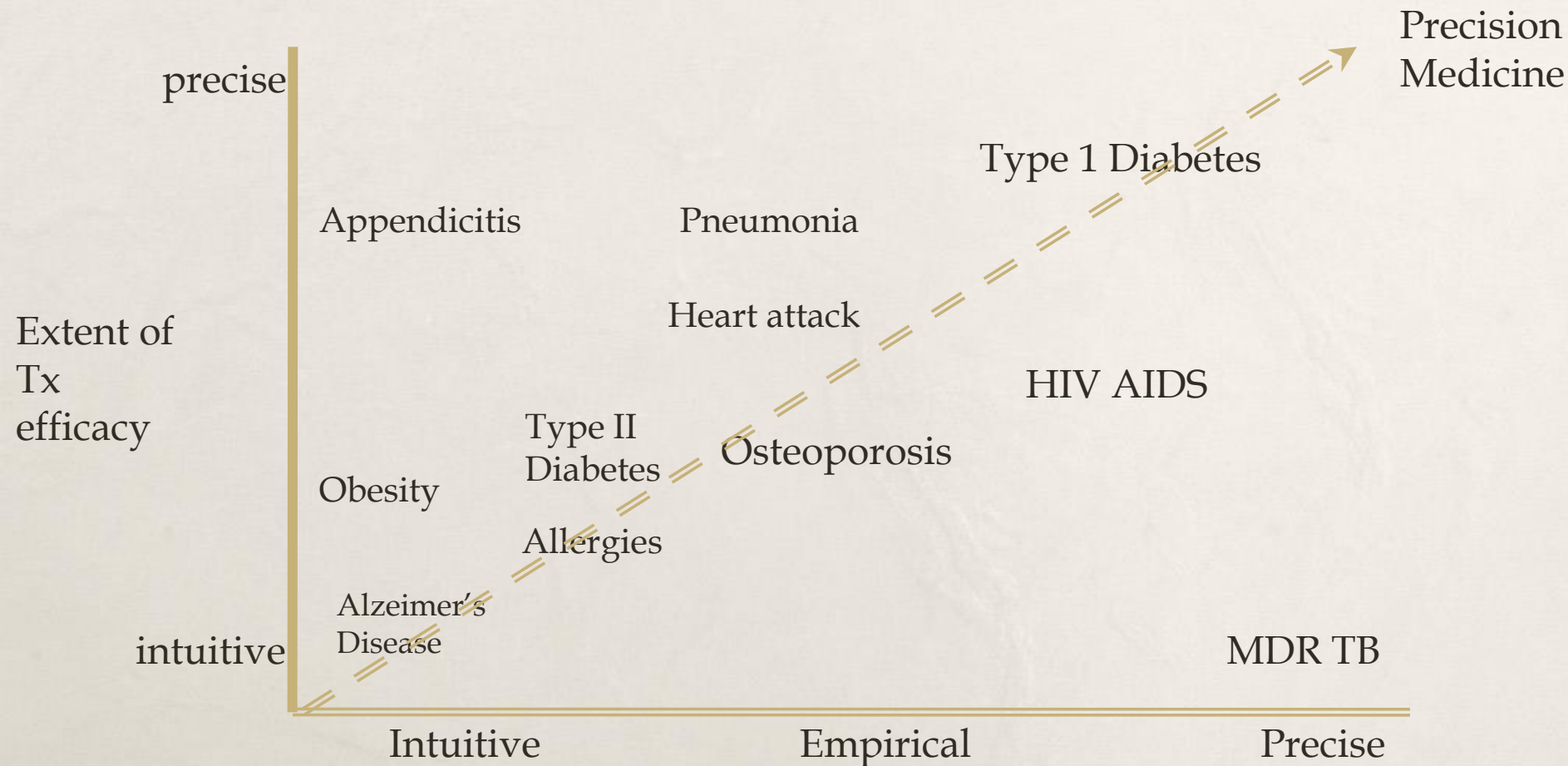
© RFHHA. All rights reserved

## Precision Medicine

- Precision diagnosis
- Rule based therapies
- High treatment efficacy

Less skilled GP or Nurse practitioner

# Current Map of Common Medical Conditions



Understanding on mechanism causing disease

# Disruptive Diagnostics Technology from BD

- \* First closed system blood collection device
- \* First automated blood culture system: BACTEC
- \* First flow cytometer developed in collaboration with Stanford University
- \* First automated culture for TB diagnosis
- \* Innovations in molecular diagnostics: MRSA screening, STI



The needed behavior change in  
India among providers

“Tx before Dx” culture

to

“Dx before Tx” culture

# A multisectoral approach

- \* Scientific seminars with senior clinicians
- \* Health economics analysis on the economic impact of program
- \* Collaborative initiative with medical associations
- \* Rational Antibiotic Use policy

# Emerging Paradigm

# The emerging health care and lab medicine

Home

Primary Health Centre

Community Care centre

Local Hospital

Regional/Specialist Hospital

Evolution of health care up until late 20<sup>th</sup> century

Evolution of health care since late 20<sup>th</sup> century

Evolution of lab medicine until late 20<sup>th</sup> century

Point of Care testing for the future

??????