



# **ENABLING SUPERIOR CHRONIC DISEASE MANAGEMENT THROUGH SUPPORTING PATIENT SELF-CARE WITH PERVASIVE WIRELESS SOLUTIONS**

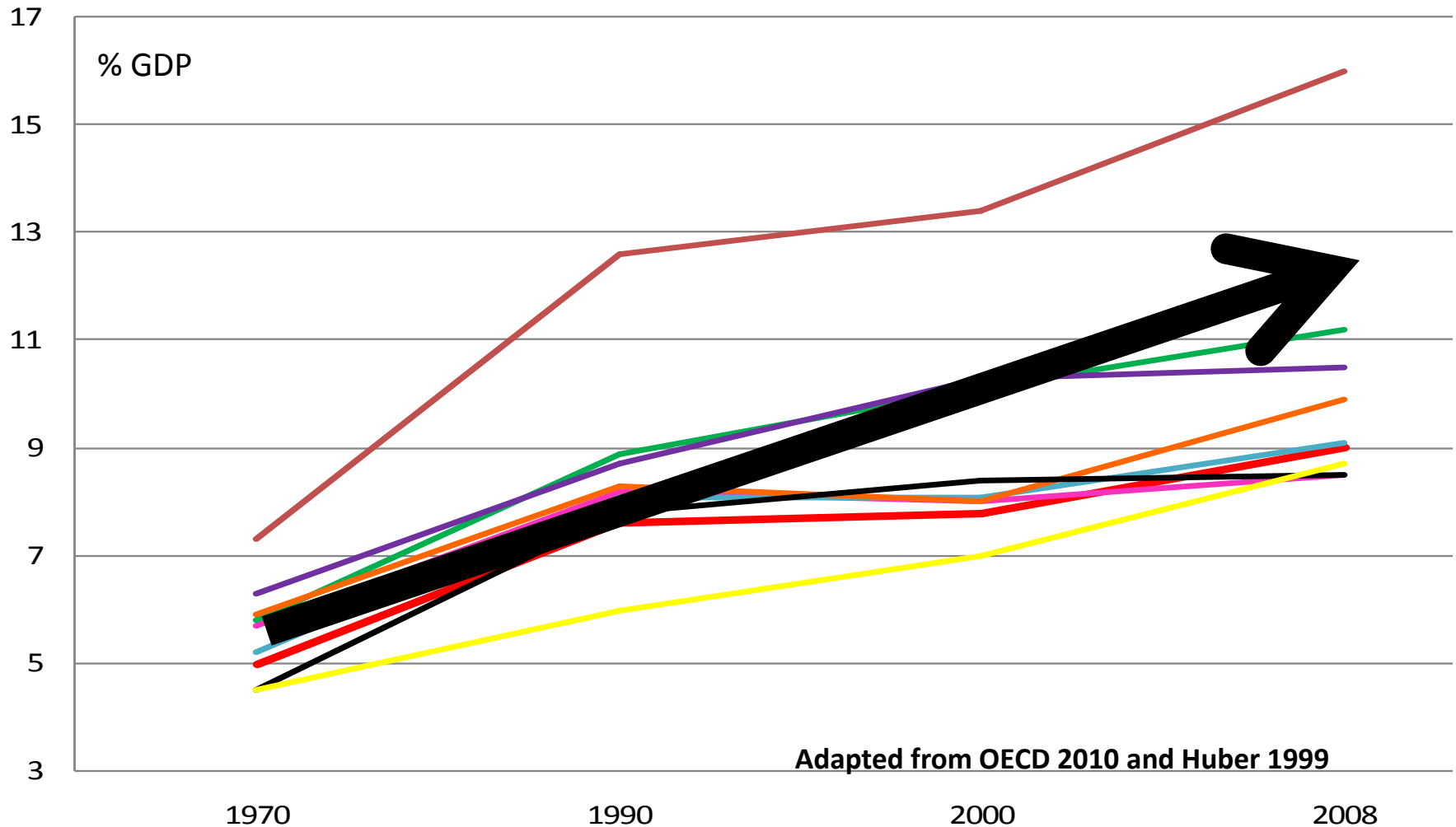
By Professor Nilmini Wickramasinghe, PhD, MBA  
Epworth Chair Health Information Management  
[nilmini.wickramasinghe@rmit.edu.au](mailto:nilmini.wickramasinghe@rmit.edu.au)

# Agenda

- Healthcare Challenges
- Diabetes - past – present - future
- Role for a pervasive wireless solution
- The DiaMonD Solution
- Closing Thoughts



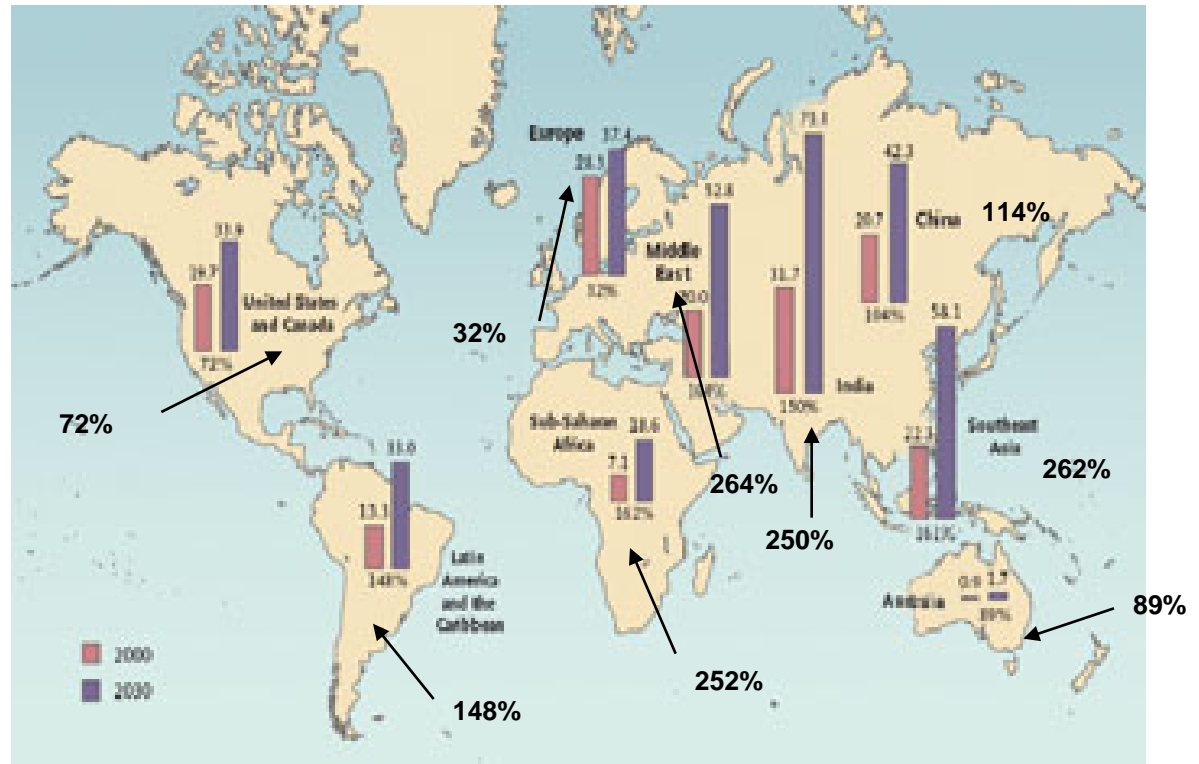
# Statement of the Problem



— OECD      — Australia      — France      — Germany      — Italy  
— Netherlands      — Norway      — United Kingdom      — United States

# The Past

# Diabetes



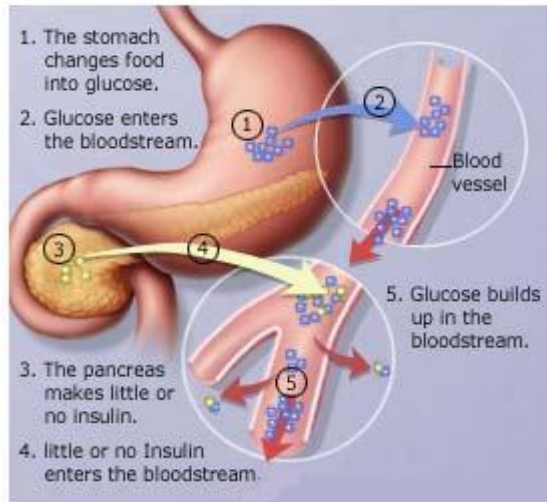
# The Present

**2010 - 2011**

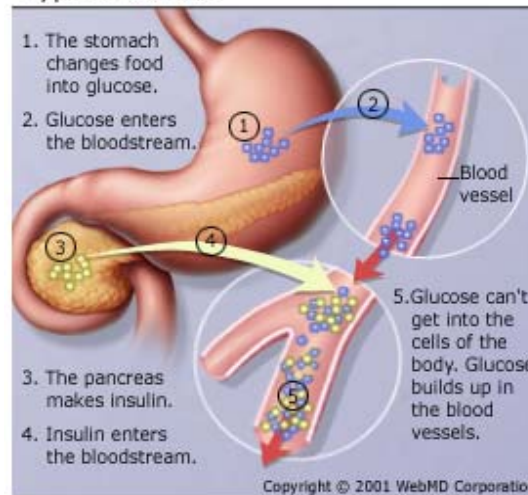


- Currently Diabetes affects more than 280 million people world wide
- It is growing exponentially and now type 1.5 has occurred
- There is no cure in sight and it is within the top 5 causes of death in many countries
- It has a significant cost pressure and impact on quality of life eg In the US alone the total cost is \$174 billion (\$116 billion direct medical costs and at least \$58 billion indirect costs)

Type I



Type 2 Diabetes

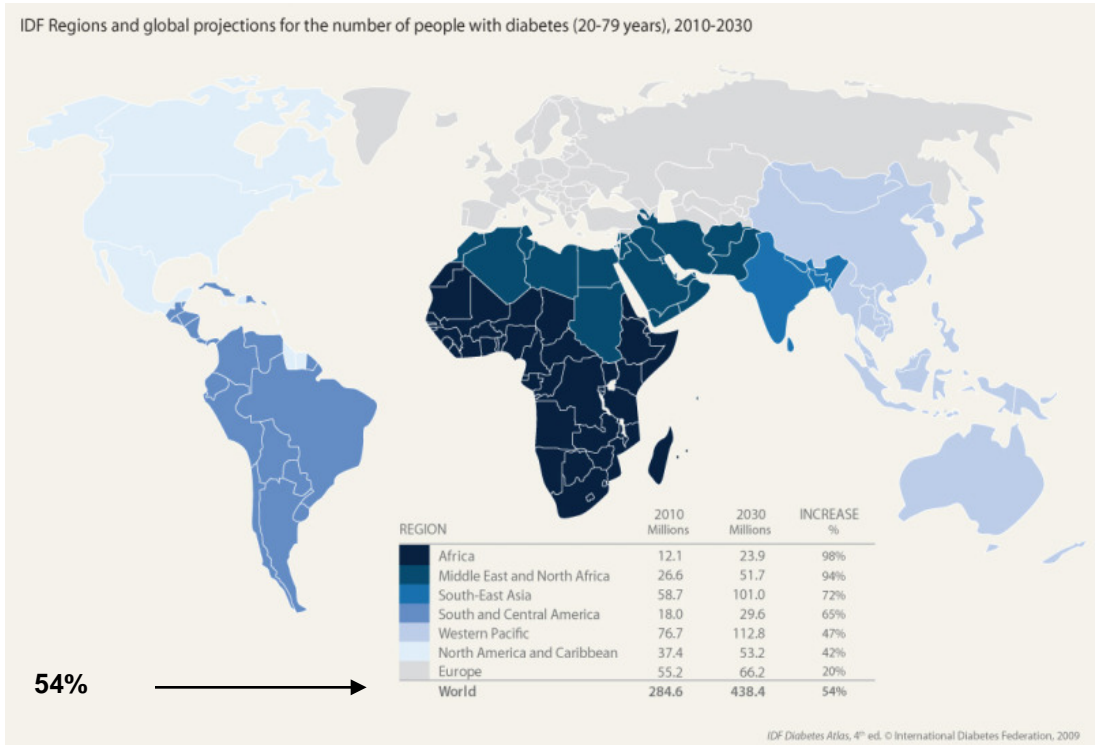


Type 1.5

Gestational



**2011-2030**



# So what can we do...

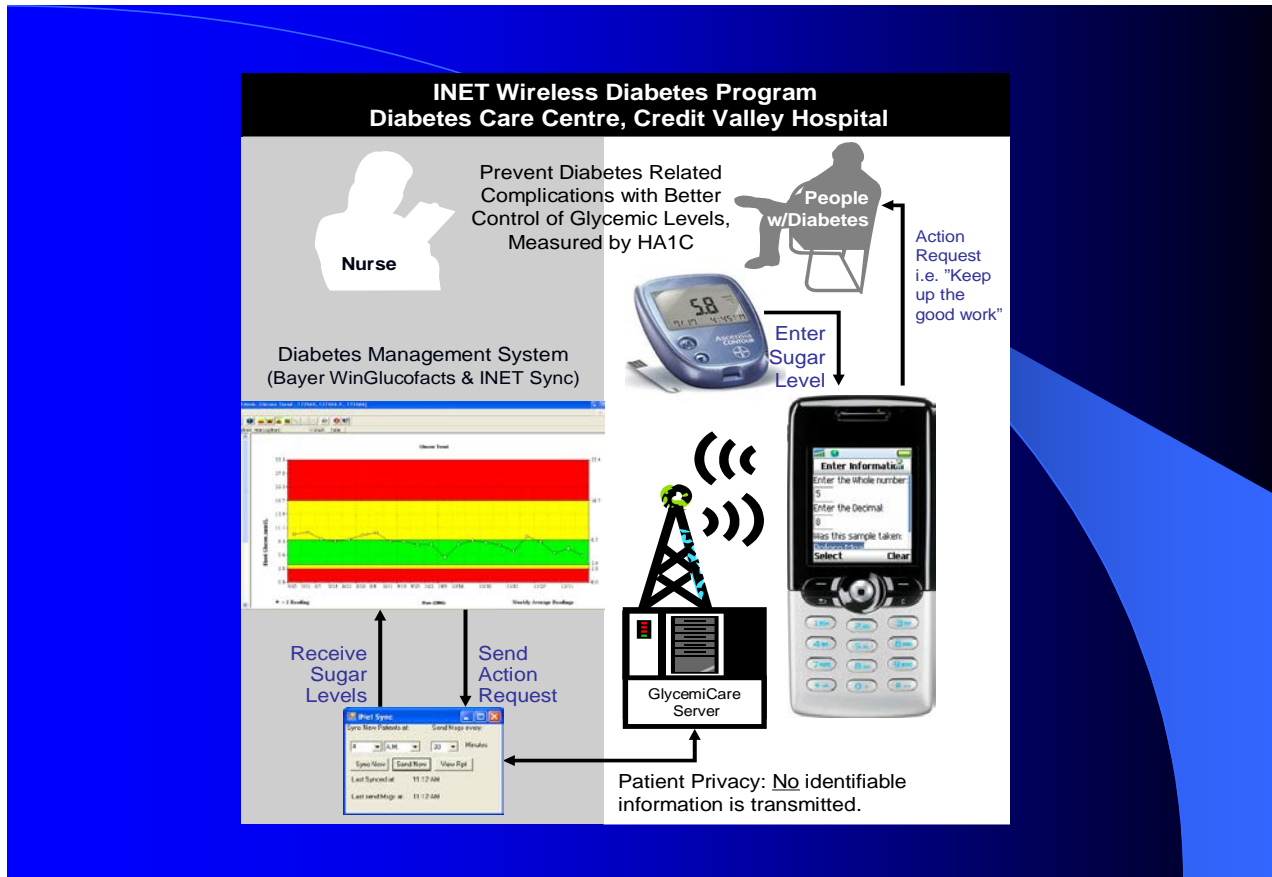
- Follow an individualised treatment plan focussing on diet, exercise and maybe insulin
- Regularly monitor blood glucose
- Continually educate oneself with the latest findings
- **Critical to all these steps is regular monitoring and management so...**



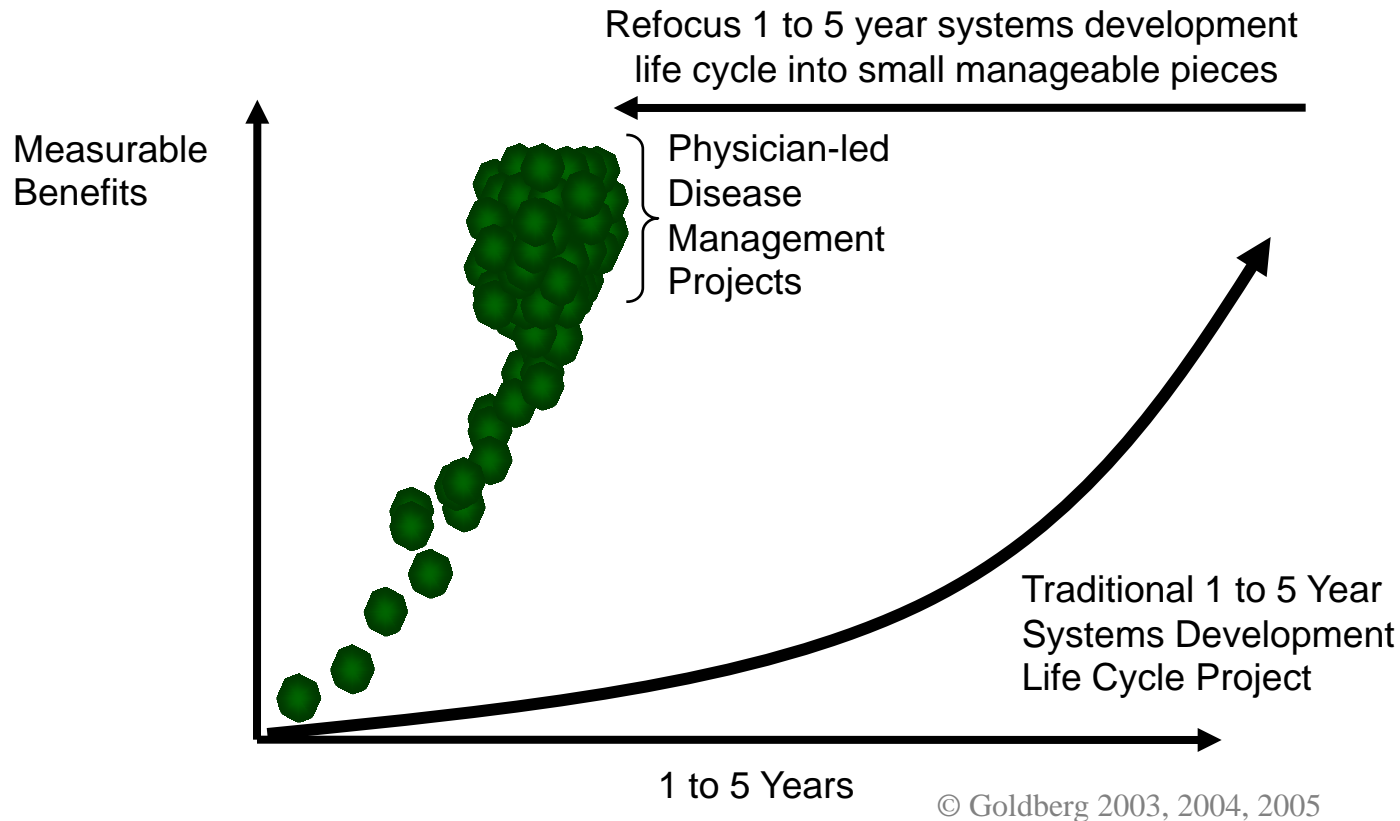
- a wireless e-health solution???
- let us look closely at a possible wireless e-health solution – let us look at the INET solution DiaMonD (Diabetes Monitoring Device)...



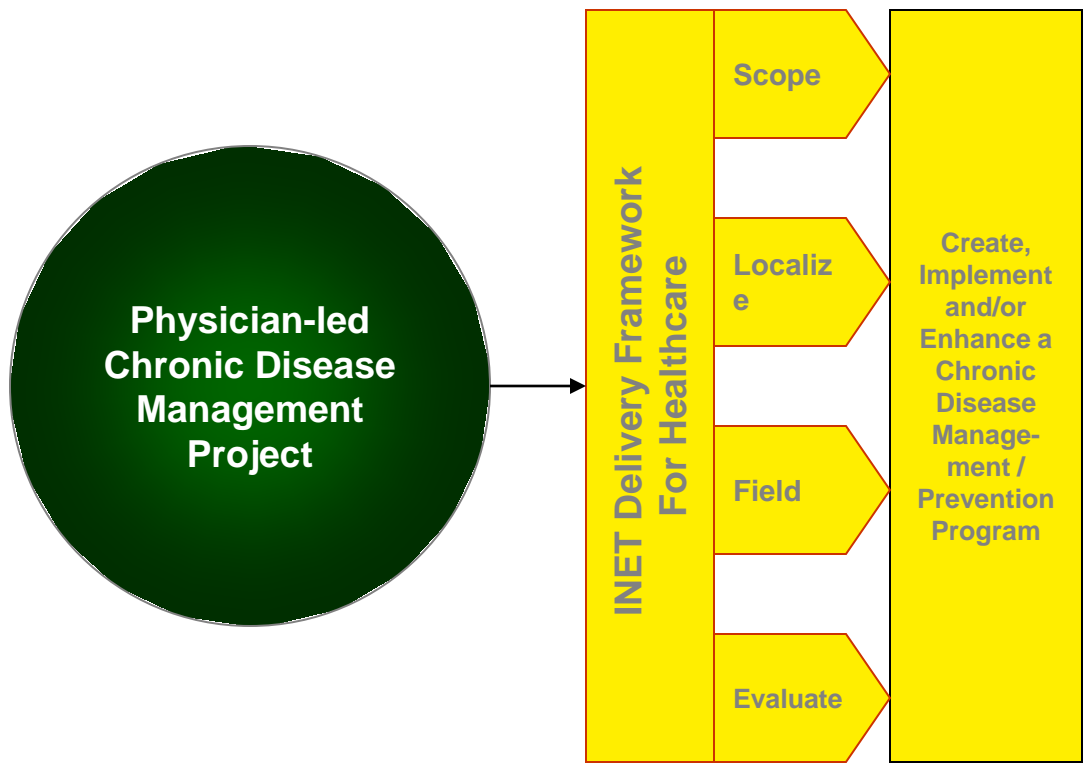
# The Solution in a Nutshell



# Revised Systems Development Life Cycle



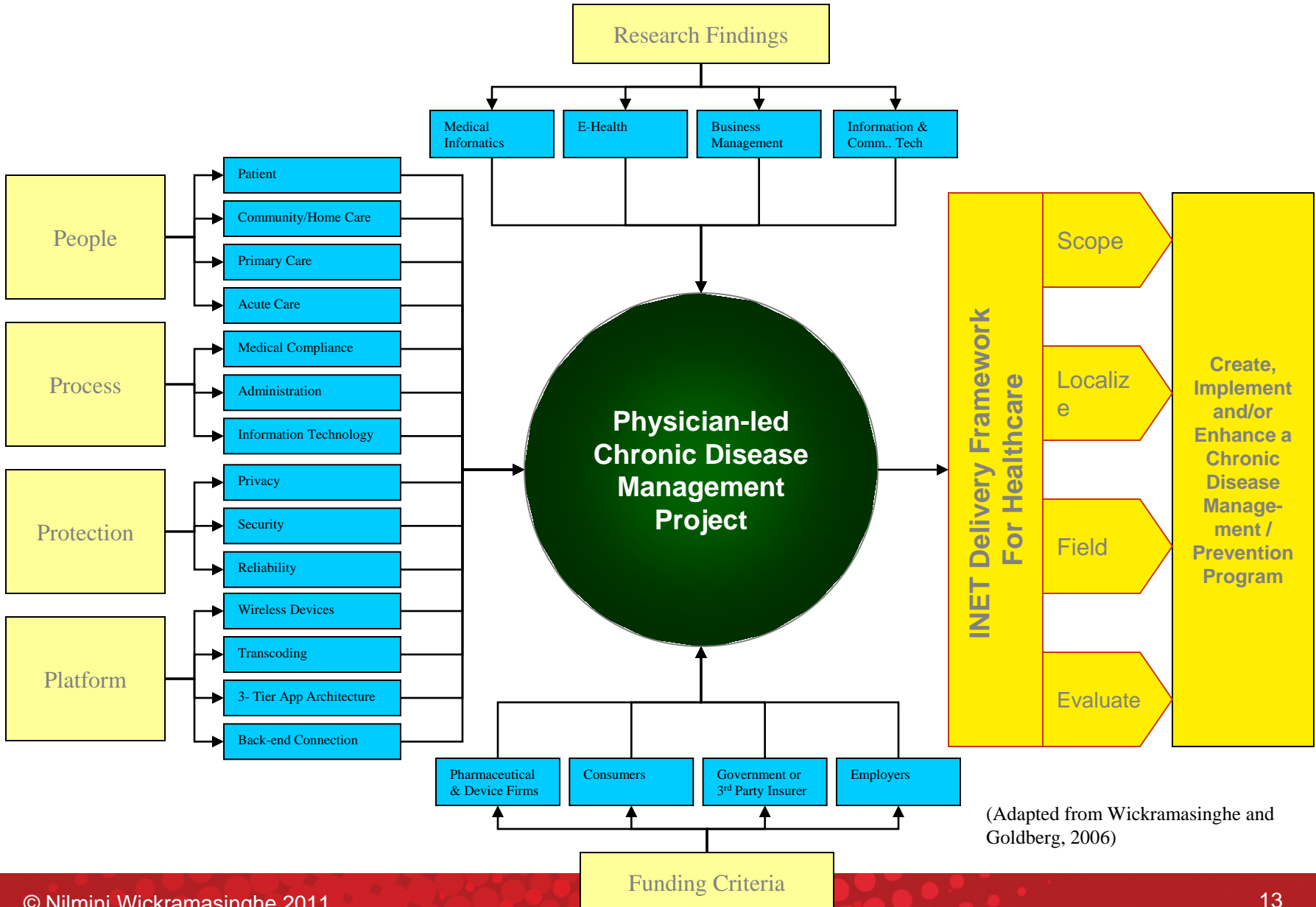
# INET Delivery Framework



(Adapted from Wickramasinghe and Goldberg, 2006)

## Financially Sustain Improved Outcomes

# INET Business Model



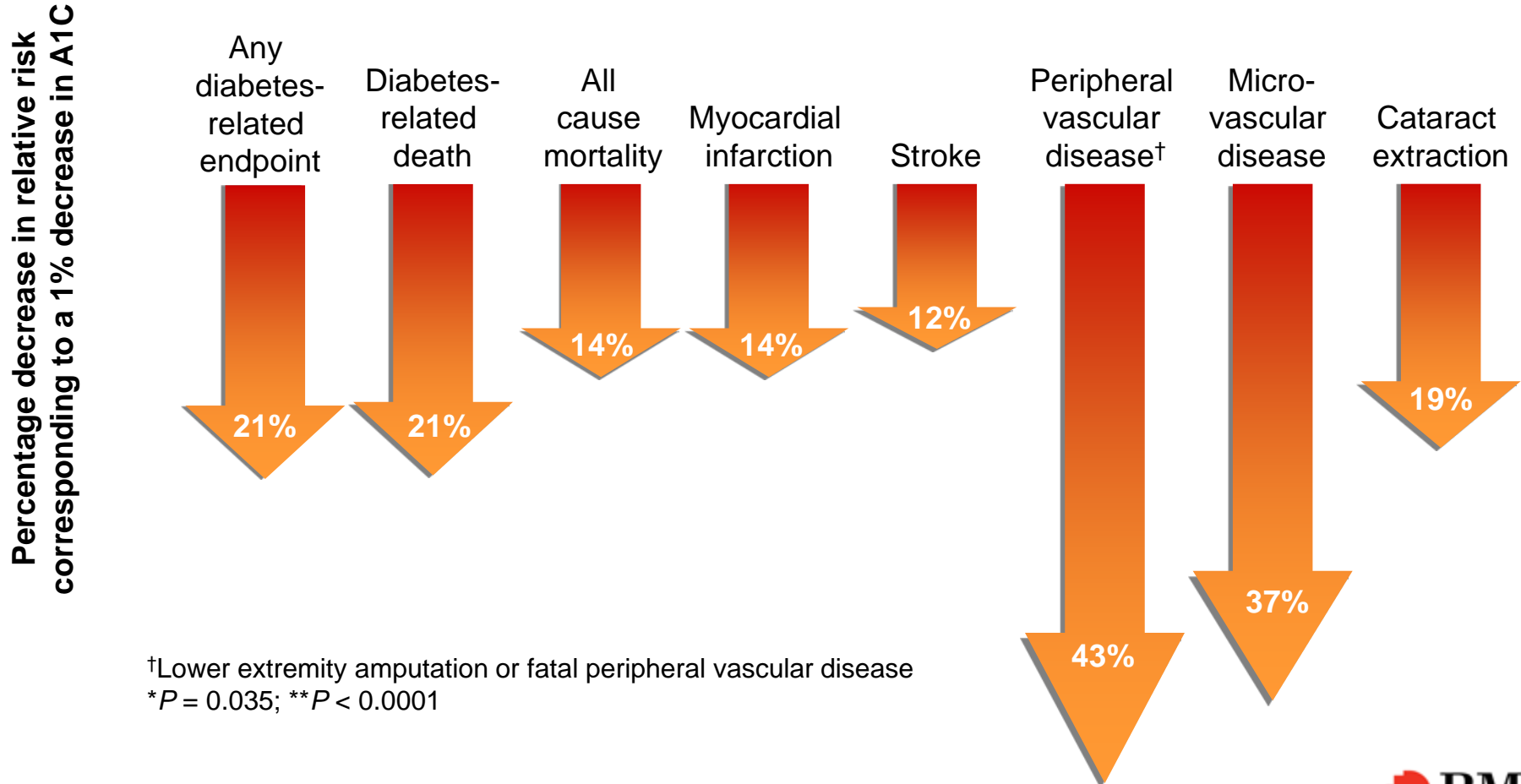
(Adapted from Wickramasinghe and Goldberg, 2006)

# HA1C

Glycosylated hemoglobin

# UKPDS: decreased risk of diabetes-related complications associated with a 1% decrease in A1C

## Observational analysis from UKPDS study data



Adapted from Stratton IM, *et al.* UKPDS 35. *BMJ* 2000; 321:405–412.

# Closing Thoughts

- Contributions for Healthcare IS Research
  - Need to understand the healthcare issue not IS/IT for the sake of IS/IT
  - Need to understand the healthcare space and the interactions of the web of players
  - Move forward in a systematic fashion
  - Identify benefits and deliver to these
  - Be realistic – develop a sustainable solution
  - Be patient and develop small steps to achieve a final goal
  - Remember healthcare is dynamic and build this into the model
- Contributions to Practice:
  - Is as effective on all types of diabetes, and other chronic diseases –is wireless in general an appropriate strategy to facilitate monitoring and management in various healthcare scenarios?
  - Enables patient self-empowerment across all ages
  - Supports a superior healthcare delivery
  - Proved to cut costs and is sustainable
- ***Can we afford to ignore this preventable chronic disease?***

