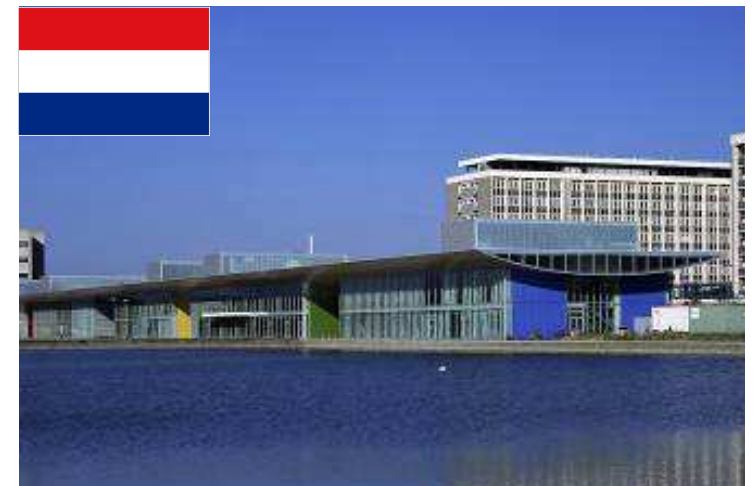


# PHILIPS

sense and simplicity

## Cardiovascular Disease

Hans Hofstraat  
Philips Research  
January 22, 2010



# Content

- Philips Healthcare
- Cardiovascular disease in India
- Care cycle solutions
- Summary



# Depth and reach of Philips Healthcare

What we do. Where we are.



\* Approximate

**€7.6**  
Billion in sales  
in 2008

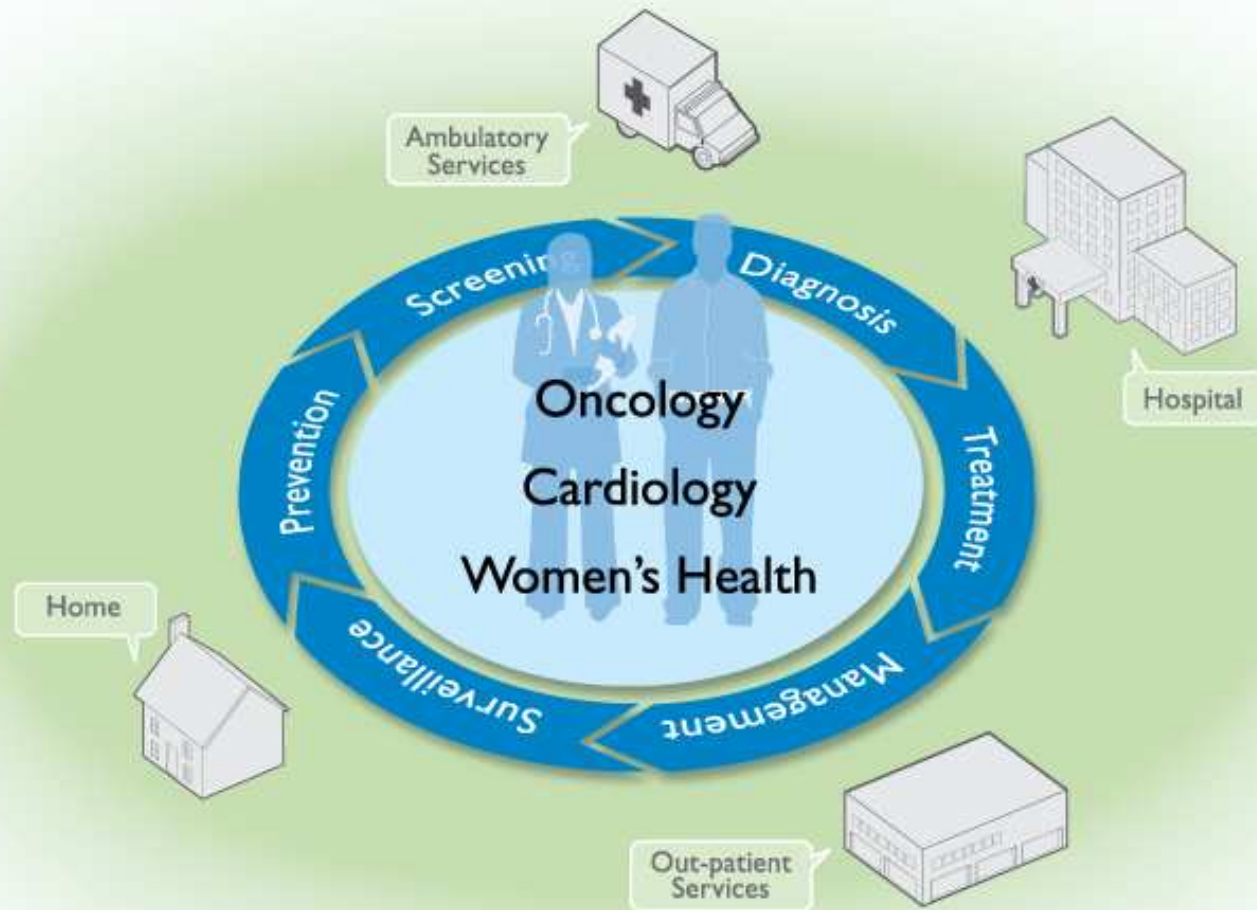
**30,000+**  
People employed  
worldwide in 100 countries

**11%**  
of system sales  
invested in R&D

**450+**  
Products and services  
offered in over 100 countries

# Towards an integrated approach to healthcare

*Care cycle model as the basis for an integrated clinical approach*



Solutions for specific medical needs of **patients** and **their care providers**, across the care cycle, wherever care occurs.

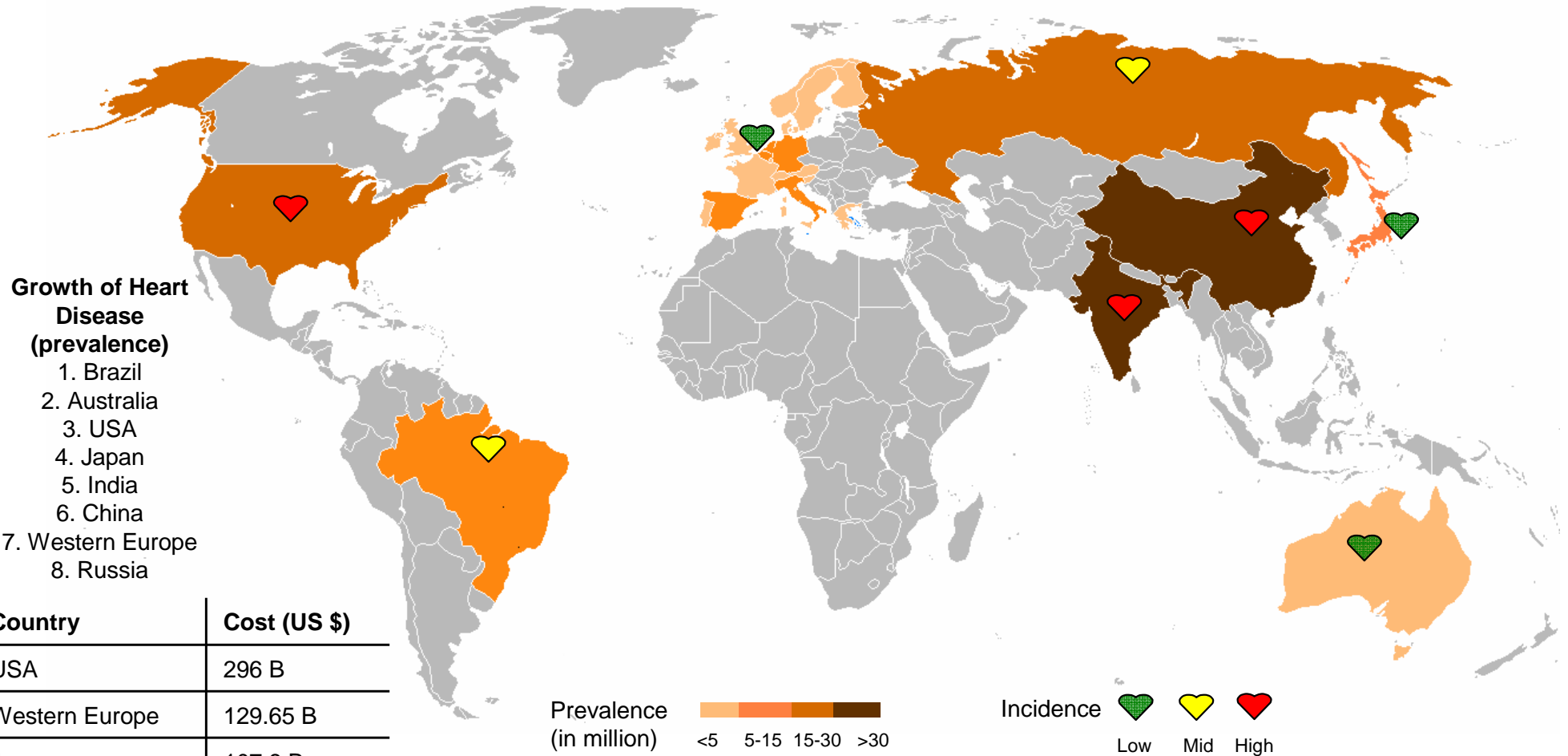
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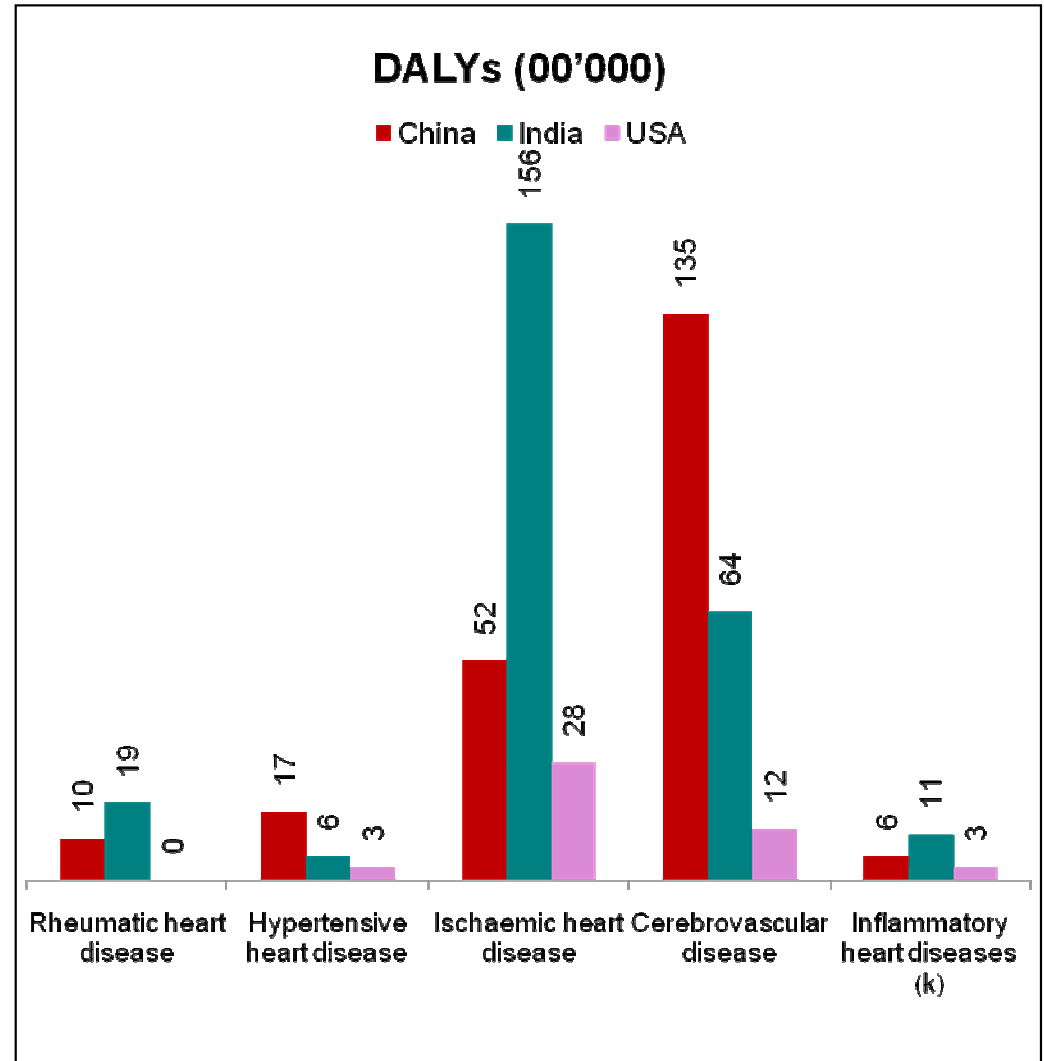
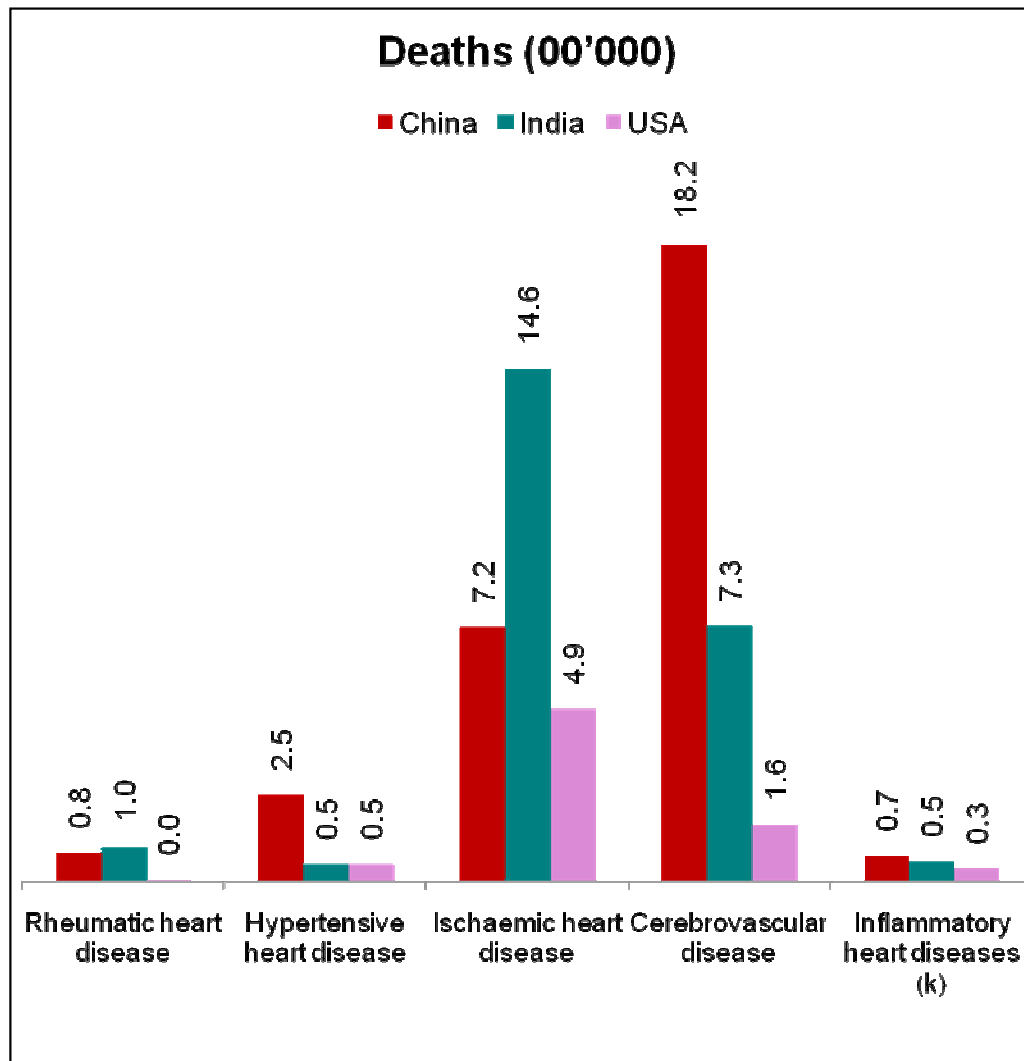
# Cardiac Disease

#1 cause of death, 17-22% of health spending



>60% of cardiac diseases will be in developing countries

# CVD Distribution – Comparison with US and China



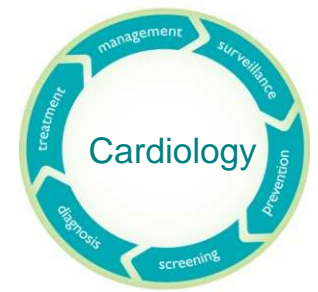
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# Philips Care Cycle

## Cardiology



### *Timely Triage*

- Insight : Timely diagnosis and prognosis
- ACS rule-out, Stable CAD, Chronic HF

### *Discovery to Treatment*

- Insight : Reducing time from discovery to treatment
- ACS rule-in / D2B, Acute HF, Stroke...

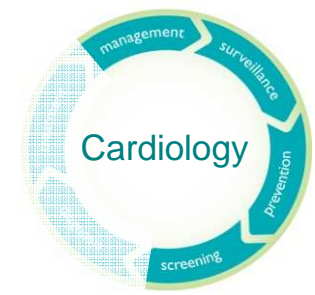
### *Minimally Invasive Interventions*

- Insight : Less invasive interventions
- Valve repair/replace, ASD/VSD repair, CABG, EP..

### *Home Monitoring*

- Insight : Independent, convenient healing
- Chronic HF, AF, Hypertension..

# Discovery to Treatment



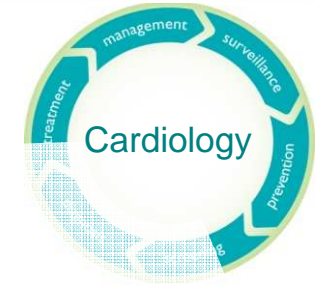
Emergency responder	Monitor / Defibrillator	Wireless 12-Lead ECG	Cardiograph	Cath Lab	Post-Intervention Monitoring
					

< 90 minutes

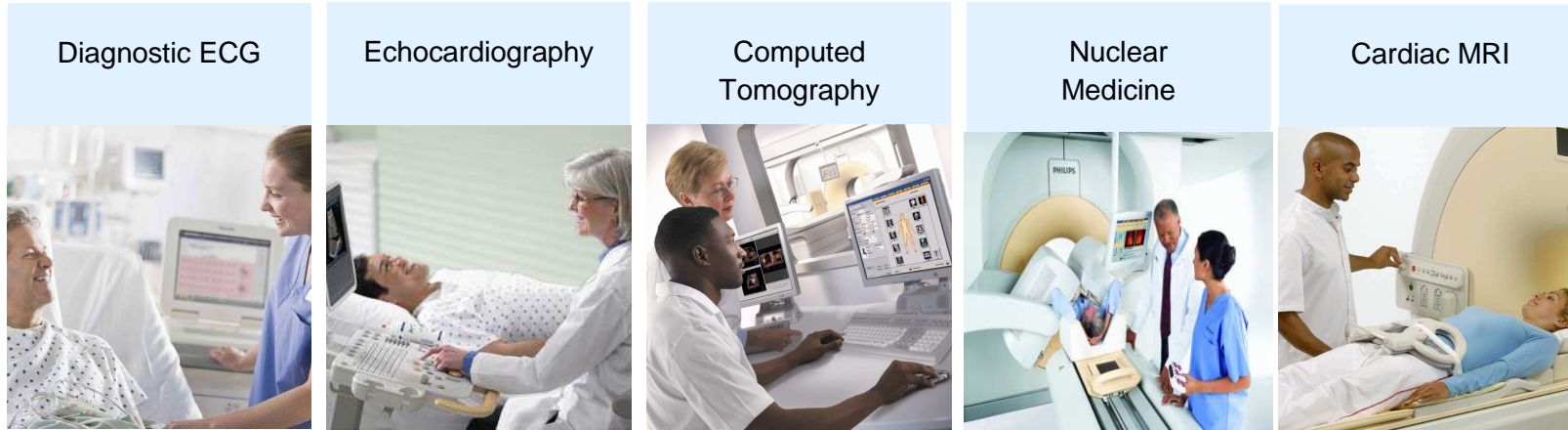


Expand diagnostic & treatment capabilities in the field & enhance EMS / hospital interaction

# Timely Triage



Today



Moving towards

Integrated early diagnosis & risk stratification

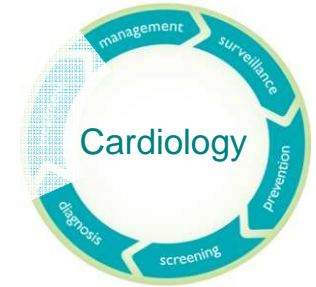
Advanced treatment planning

Timely, comprehensive diagnosis  
whenever & wherever needed

Advanced diagnosis, rule-out,  
modeling and treatment planning

Decentralize early diagnosis and risk stratification, and combine imaging to facilitate treatment planning

# Minimally Invasive Interventions

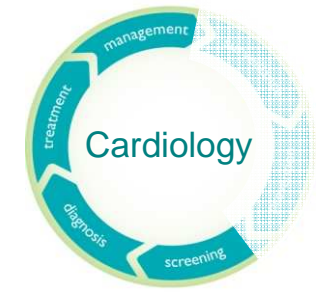



Cath Lab	Interventional Tools	EP Navigator	3D Trans-esophageal Echo	Innovations for Interventions
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Procedural innovation for minimally-invasive interventions are increasing

# Home Monitoring



Monitoring solutions in hospital	Respiratory/Sleep disorders .Dx and Tx work-up	Remote Patient Management	Remote Cardiac Services
			

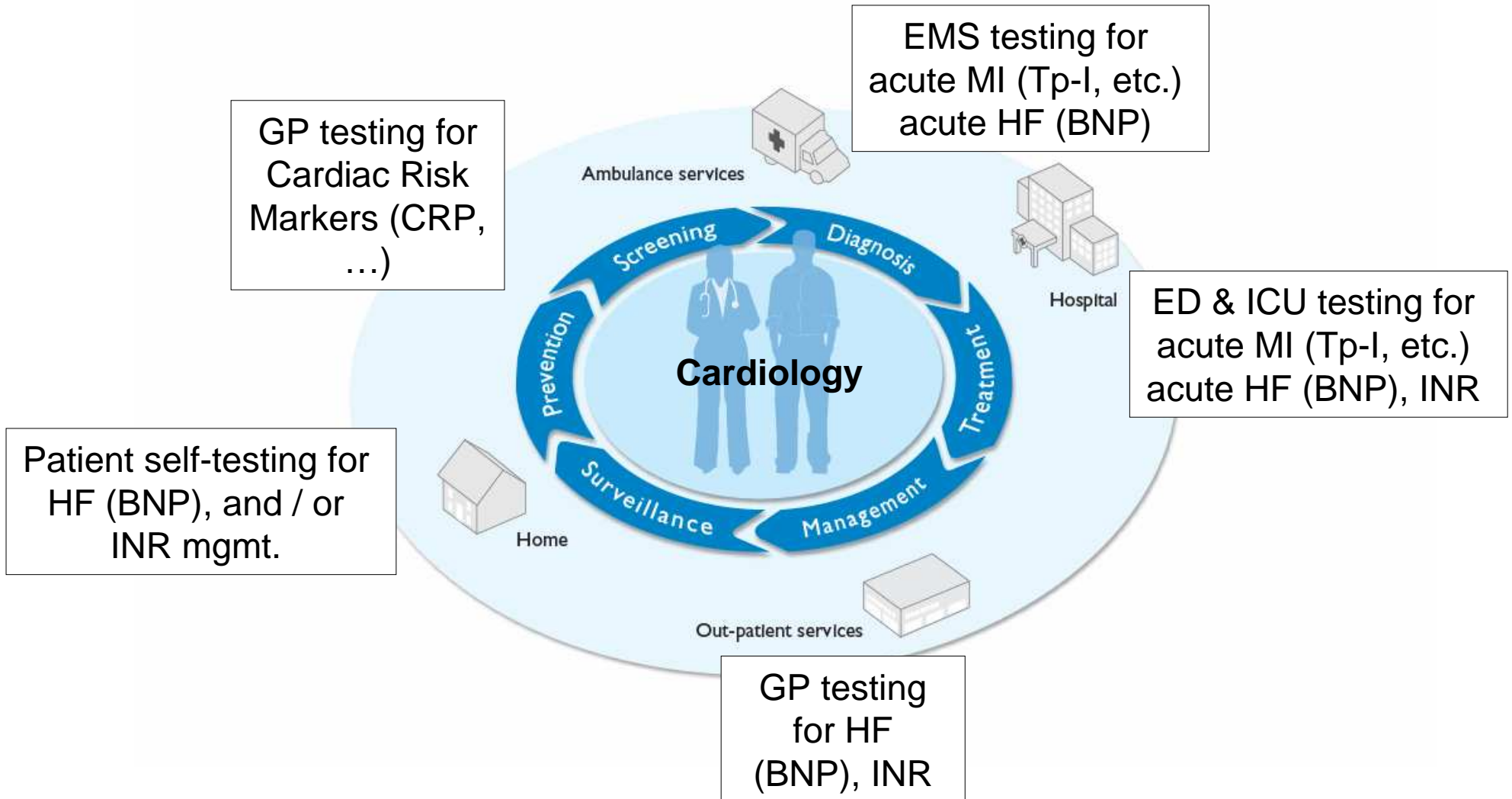


Managing chronic conditions (e.g. heart failure, SHD, atrial fibrillation) at home to improve quality of life and reduce frequent hospitalization

**Sample in,  
Result out**

# Point-of-Care Cardiac Testing

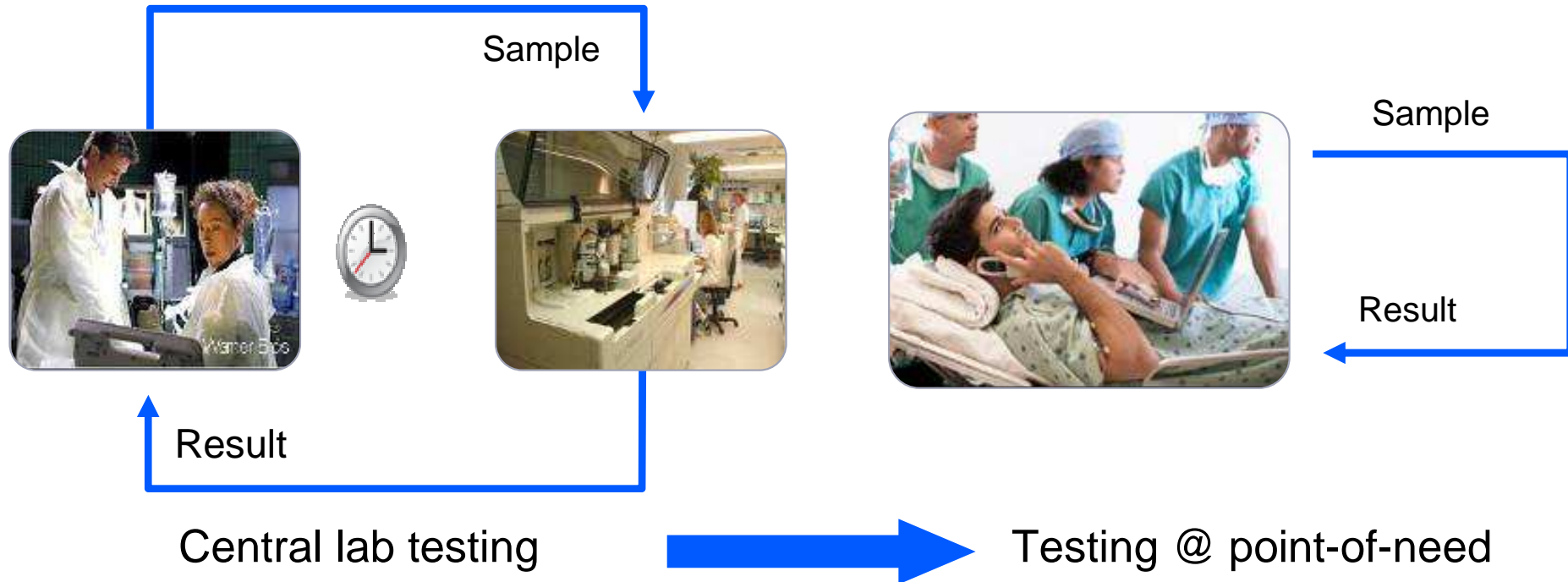
*Near patient-side decision making for both acute and chronic patients, across the cardiac care cycle, with existing biomarkers*



**Sample in,  
Result out**

# Point-of-Care Testing

*Key in timely treatment of cardiovascular disease*



## Point-of-Care Testing Benefits

- Short time to result → rapid therapy decisions
- Compact & simple to use → 24/7 availability, *anywhere*
- Personalized therapy selection → reduced cost, improved outcomes

# Philips' Handheld Immunoassay Platform

Sample in,  
Result out

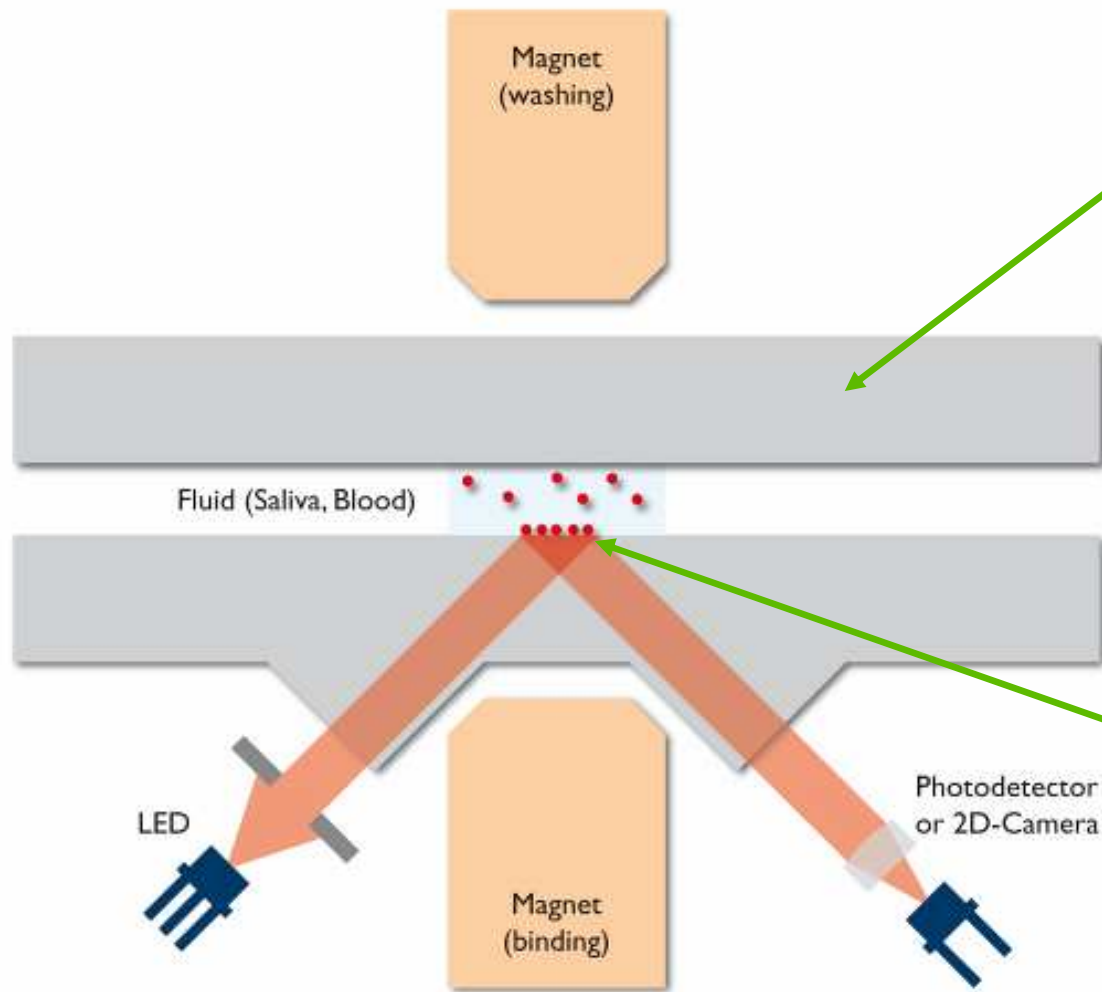
- Drop of blood or saliva
- < 5 minute sample in to result out
- Clinical sensitivity 2 pM, wide dynamic range
- Flexible multiplexing 1-10 and beyond
- *No-flow immunoassay*
- Dry reagent chemistry
- Disposable cartridge
- Connectivity and Decision Support on-board



Analyzer

- No moving parts
- Magnetic actuation

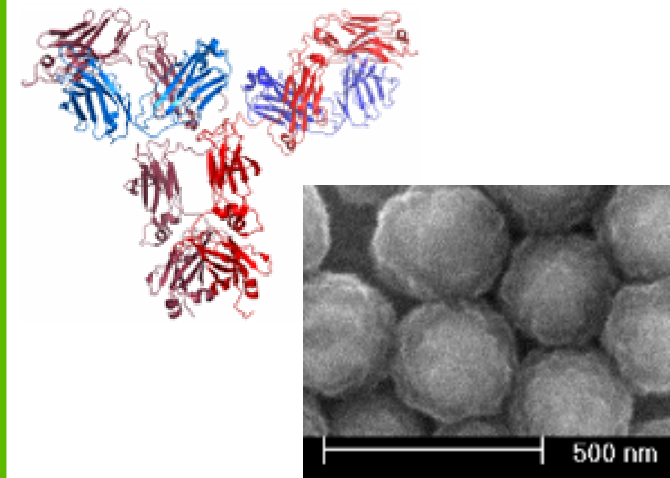
# Optical detection of magnetic beads



Disposable cartridge



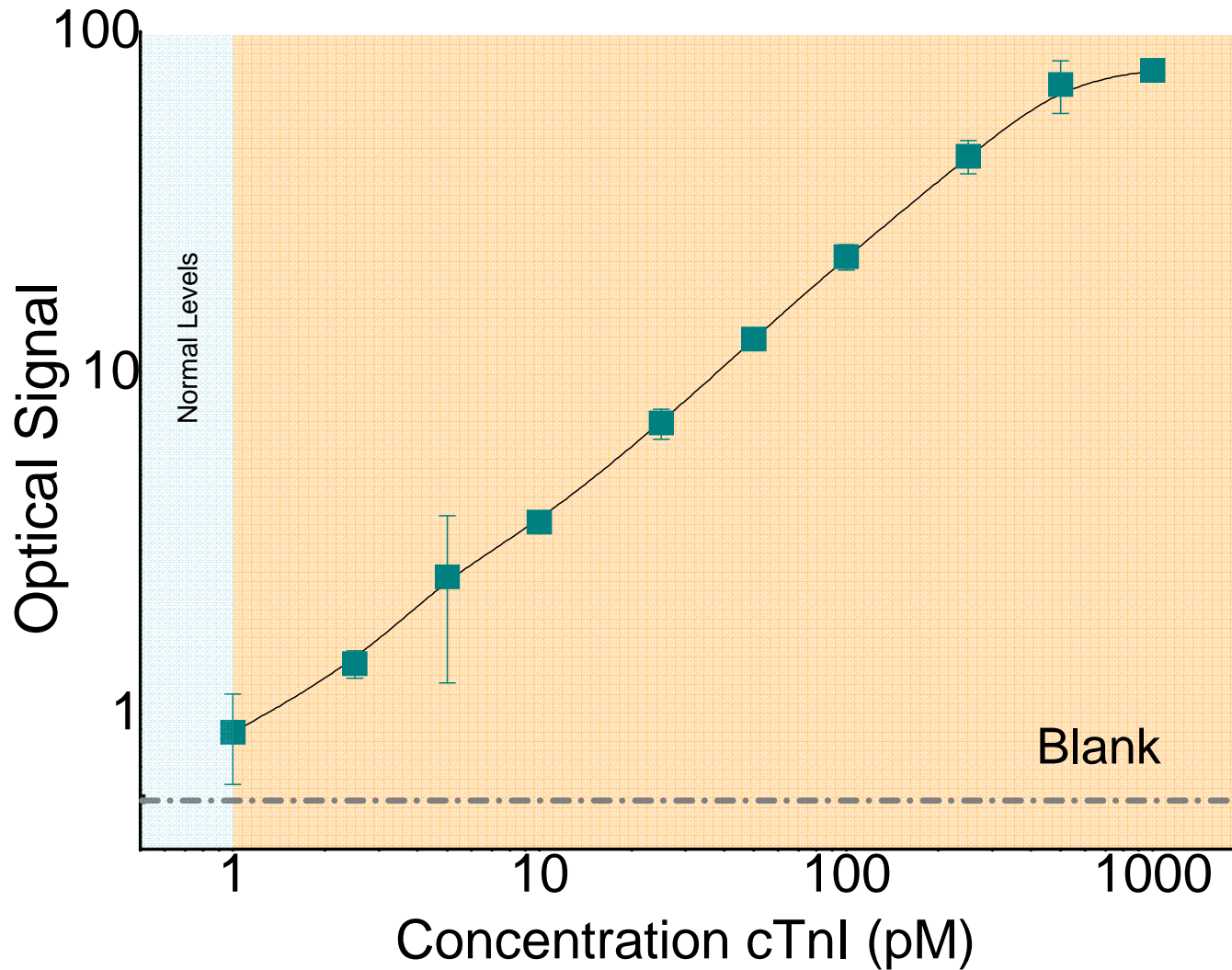
Magnetic nanoparticles and antibodies



**Sample in,  
Result out**

# Philips' *Magnotech*

*Troponin-I can be detected sensitively in minutes*



**5-minute assay time**  
**1-pM Limit of Detection**  
**10- $\mu$ L plasma**

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# Summary

- Philips develops integral solutions for healthcare, adapting the Care Cycle model with a focus on clinical unmet needs
- Healthcare will increasingly be delivered at the point of need, new technologies are becoming available that enable this change in approach, which will have a significant impact on the workflow
- Creation of innovative solutions with clinical and academic partners is enabled by a setting of 'Open Innovation' – Public-Private Partnerships

