

Suggestions for improvements in the Private Health Care industry in SA

Praneet Valodia

Executive Manager: Innovation and
Development, ICON

DISCLAIMER

This presentation reflects my own views and does not reflect the views of the government or any other organization or committee that I am affiliated with.

Brief: BHF

- original work
- practical strategies to change status quo
- create road map
- accountability

FOCUS

- Measuring value of health care
- Task shifting
- Rational use of medicines
- Patient-centric approach
- Key solutions

Define: accountability

- The quality of state of being accountable
- An obligation or willingness to accept responsibility
- To account for one's action
- Taking or being assigned responsibility for something that you have done or something

Legacy versus value agenda

Legacy	Value
Organise around specialties and departments, with private practice physicians working independently	Organise into IPU
Measure process compliance and charges	Measure outcomes and costs for every patient
Fee for service payments based on volume of services delivered	Move to bundled payments for care cycles
Each hospital or practice offers a full line of services	Integrate care delivery across separate facilities
Providers limited to serving their immediate geographic area	Expand excellent services across geography
Multiple IT systems for specialties, services, procedure and billing	Building an enabling technology platform

Do we deliver value in private
health care?

MEASURING THE VALUE OF HEALTH CARE

Outcome measurement is perhaps
the single most powerful tool in
revamping the health care system

Porter ME. What is value in health care? NEngl J Med
2010; 363: 2477-81

Methods to measure value

- Health outcomes
- Benchmarking
- Return on investment
- Trend analysis (using moving average)
- Claims cost versus inflation over time (year to year)
- Other: Total population approach, survival analysis

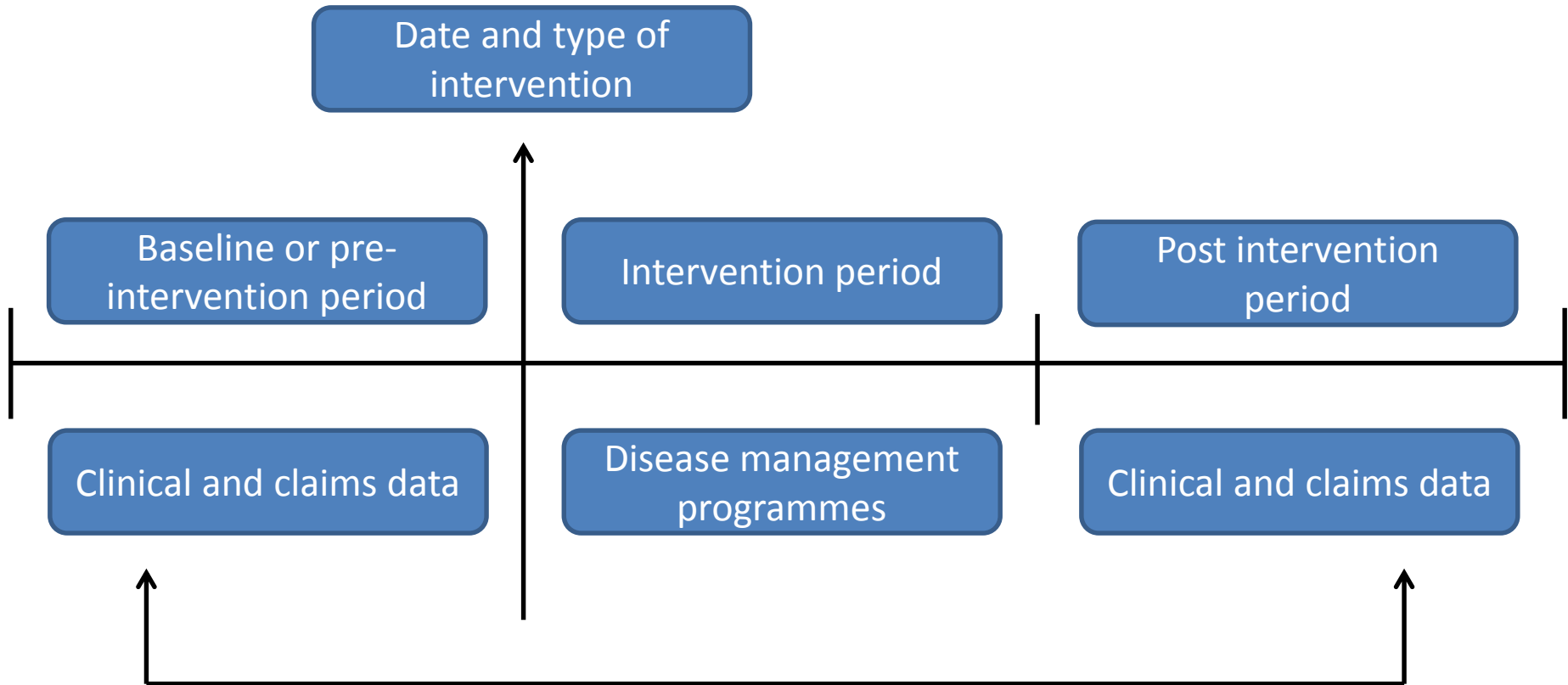
Use combination of methods

Definition: Health Outcomes

A **scientific** discipline that evaluates the effect of **health care interventions** on patient-related, if not **patient specific**, economic, clinical and humanistic outcomes

ISPOR BOOK OF TERMS

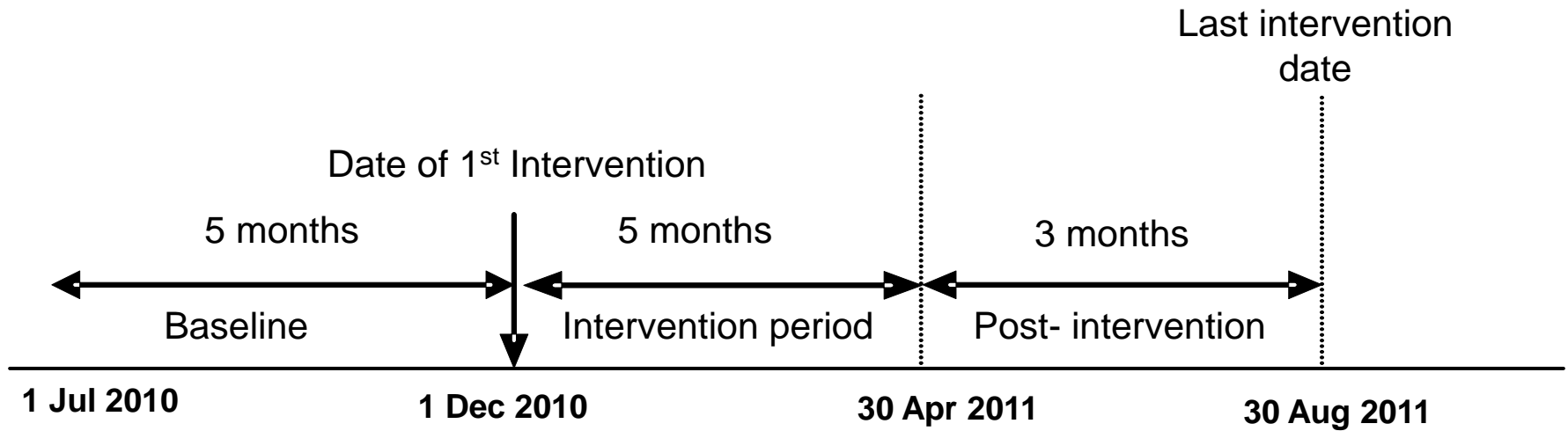
Health Outcomes Assessment



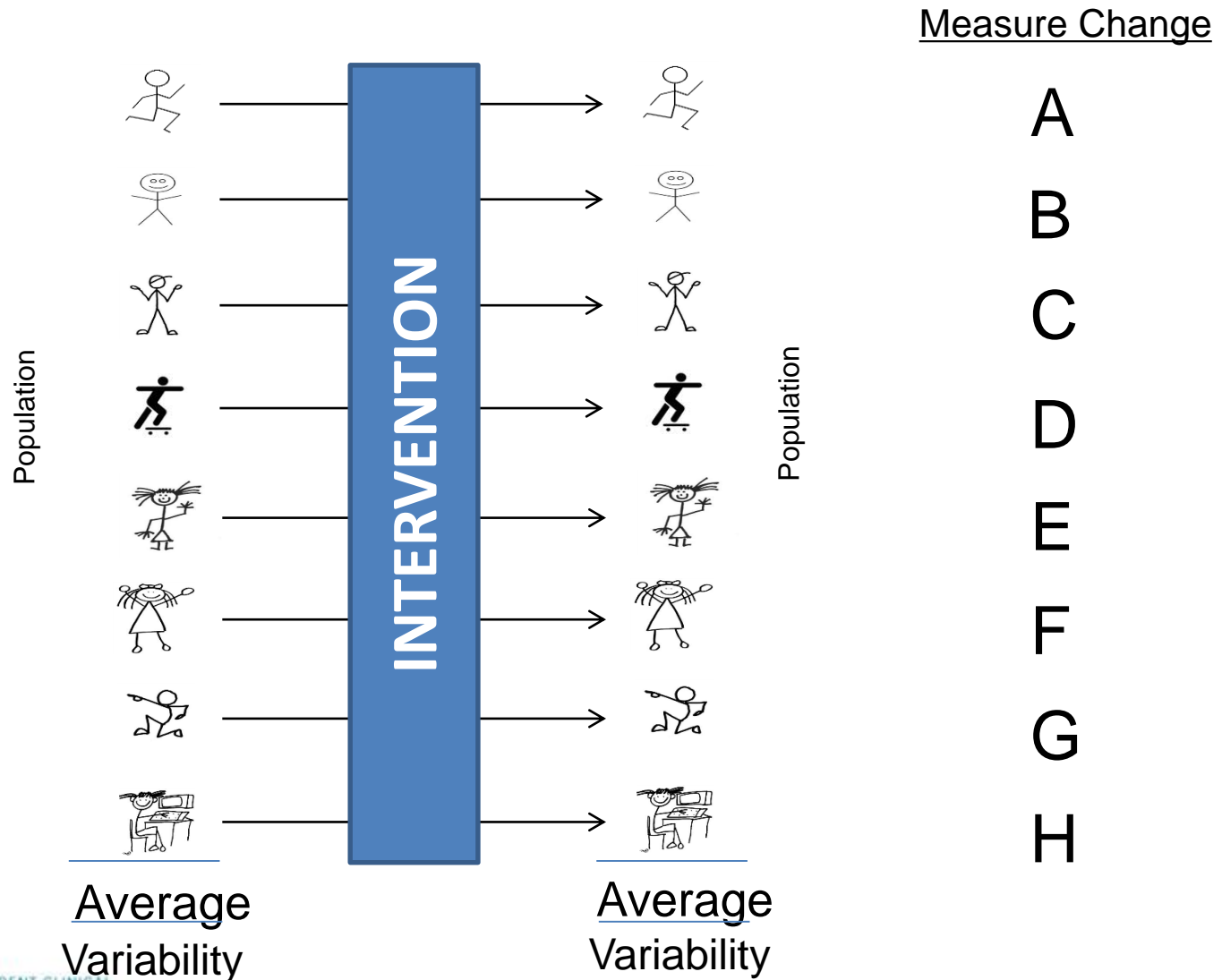
Difference = Outcome

Value of managed health care

PRE- AND POST INTERVENTION



Population vs Individual Health Outcomes Assessment



Challenges with measuring health outcomes

- Definition of health outcomes
- Careful planning of data collection
- Availability of good baseline information
- Selection bias
- Missing data points
- Validation of ICD10 and CPT codes
- Matching of control groups
- Regression to the mean
- Clinical and statistical differences
- Inter- and intra-scheme variability

Challenges

- A priori specification of confounding variables
- Interpretation – denominator effect, RTTM
- Development of questionnaires sensitive to changes over time
- Integration and automation of all systems
- Development of intelligent health systems
- Disease specific clinical measurement
- Not all information is extractable
- Develop clinical impactability models

TASK SHIFTING

The task shifting approach represents a return to the core principles of health services that are accessible, equitable and of good quality.

Task shifting : rational redistribution of tasks among health workforce teams : global recommendations and guidelines. 2008, WHO

Process whereby specific tasks are moved, where appropriate, to health workers with shorter training and fewer qualifications. (cost less)

- more efficient use of existing human resources
- ease bottlenecks in service delivery

Results in low cost health care workers on the one end and highly focused specialist on the other end.

TASK SHIFTING

EPILEPSY MANAGEMENT IN
CAPE TOWN – 1990 TO 1993

CLINICAL PHARMACOKINETIC SERVICE

Referral by attending doctor

Demographic data

Concurrent medicines

Duration of treatment

History of seizures and frequency

Description of seizures

Alcohol and smoking

Admission to hospital

Toxicity

Seizure diary

Compliance checks

Counselling – missed doses

Tablet counts

Time to Steady state calculation

Blood phenytoin samples

Determination of V_m and K_m

Calculation of dose

Prediction of new PHT conc.

Report to doctor

Phenytoin toxicity – withdraw

Oral loading dose

Phenytoin kinetics

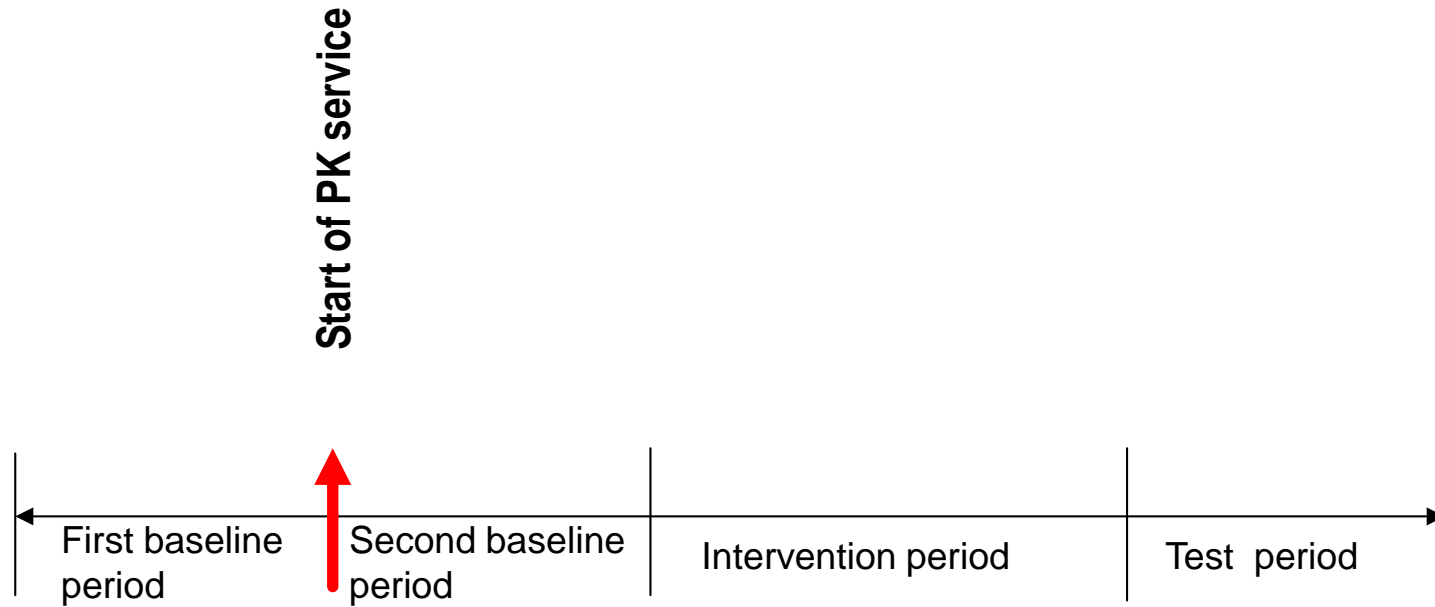
$$Vm = \frac{S.F.R}{Cp_{ss}} Km + S.F.R$$

$$Km = \frac{R_2 - R_1}{\frac{R_1}{Cp_{ss1}} - \frac{R_2}{Cp_{ss2}}}$$

$$R = \frac{Vm \times Cp_{ss} \times \tau}{(Km + Cp_{ss})(S)(F)}$$

$$Cp_{ss} = \frac{Km + (S)(F)(R)}{Vm - (S)(F)(R)}$$

PRE-POST INTERVENTION: PHENYTOIN



P. Valodia et al, Benefits of a clinical pharmacokinetic service in optimizing phenytoin use in the Western Cape. SAMJ.1998,88:873-875

Phenytoin

Action	% patients
	n = 332
Dose increased	32,0
Dose decreased	15,0
No change in dose	53,0
Dose adjusted	47,0

P. Valodia et al, Benefits of a clinical pharmacokinetic service in optimizing phenytoin use in the Western Cape. SAMJ.1998,88:873-875

Percentage reduction in seizures

Period	% reduction in seizures
	n = 195
Based on first baseline period	66,0
Based on second baseline period	63,0
Based on the average of first and second baseline periods	65,0

P. Valodia et al, Benefits of a clinical pharmacokinetic service in optimizing phenytoin use in the Western Cape. SAMJ.1998,88:873-875

Adverse effects

Visit	% patients
First visit	20,5%
Last visit	3,2 %

Based on phenytoin blood samples

P. Valodia et al, Benefits of a clinical pharmacokinetic service in optimizing phenytoin use in the Western Cape. SAMJ.1998,88:873-875

Learning points from epilepsy example

- Impact of task shifting
- Approach to measuring health outcomes
- Multidisciplinary team
- Extent of inappropriate use of phenytoin
- Need paradigm shift in thinking

End resultnext slide

$$Cp_{ss} = -\frac{1}{2} \left[\left(\frac{Vm}{Cl} + Km - \frac{R}{Cl} \right) - \sqrt{\left(\frac{Vm}{Cl} + Km - \frac{R}{Cl} \right)^2 + \frac{4 \cdot R \cdot Km}{Cl}} \right]$$

$$Vm = (\theta_1 * WT * \theta_3) RACE * SMK * ALC * SEX * AGE * EXPn_1$$

Where RACE = θ_4 if coloured, otherwise = 1
 SMK = θ_5 if smoker, otherwise = 1
 ALC = θ_8 if drinker, otherwise = 1
 SEX = θ_9 if male, otherwise = 1
 AGE = θ_{10} if ≥ 65 years, otherwise = 1

$$Km = \theta_2 * RACE * AGE * EXPn_2$$

where RACE = θ_7 if coloured, otherwise = 1
 AGE = θ_{11} if ≥ 65 years, otherwise = 1

$$Cl = \theta_{11} * EXPn_3$$

P. Valodia et al. Factors influencing the population pharmacokinetic parameters of phenytoin using non-linear mixed effects modelling in adult epileptic patients in South Africa.

Indian Hospitals' Ultralow Costs

Cancer Treatment

\$2,900

HCG ONCOLOGY

\$22,000

U.S. AVERAGE

SOURCE HCG; Costs are for a full set of intensity-modulated radiation treatments

Kidney Dialysis

\$12,000

DECCAN HOSPITAL

\$66,750

U.S. AVERAGE

SOURCE Deccan Hospital and U.S. Renal Data System, 2012 Annual Report; Deccan and U.S. costs are for peritoneal dialysis per patient per year

Indian Hospitals' High Quality

SURVIVAL RATES

Breast Cancer

86,9%

HCG ONCOLOGY

89.2%

U.S. AVERAGE

SOURCE HCG and SEER database
5-year survival rate for breast cancer,
Stages 1-3 combined

SURVIVAL RATES

Renal Disease

50%

DECCAN HOSPITAL

41%

U.S. AVERAGE

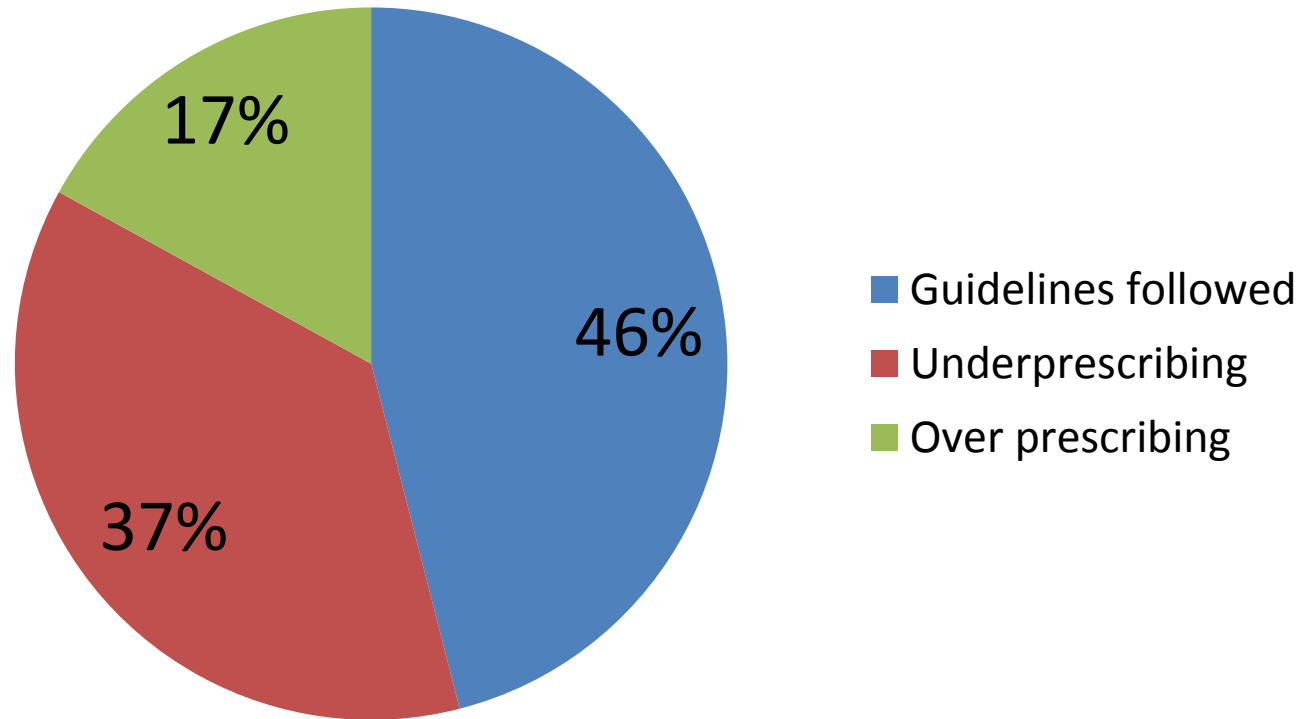
SOURCE Deccan and U.S. Renal Data System,
2012 Annual Report; 5-year survival rate for end-stage
renal disease patients undergoing peritoneal dialysis

IRRATIONAL USE OF MEDICINES

1 in 2 prescribed antibiotics are unnecessary

Prof Marc Mendelson, Division of Infectious Diseases & HIV Medicine,
University of Cape Town

Extent of adherence to asthma treatment guidelines



N. Ebrahim, 2005. The pharmaco-economic impact of non-adherence to standard treatment guidelines for the treatment of asthma in community primary health care centres in the Cape Metropolitan area.

Other examples – irrational use

- Use of meter dose inhalers
- Collection of serum drug levels of antiepileptic medicines for dose adjustment

RATIONAL USE OF MEDICINES

Cost-effective medicines become cost-ineffective if used badly and irrationally.

Extent of irrational use of medicines?

ICON approach – rational use of medicines

- Formulary committee
- Formalized pharmacoeconomic approach and evidence medicine approach
- Therapeutic plan review committee with focus groups (breast, prostate, colorectal, lung)
- Protocols linked to formulary
- Circulated for input and buy-in

EVIDENCE-BASED MEDICINE

In perspective:

- 36,8% of drug approvals by the FDA between 2005 and 2012 were based on a single large clinical trial.
- 45% of new approvals were based on data other than clinical health outcomes, such as lab tests.
- 50% of data of clinical trials are manipulated

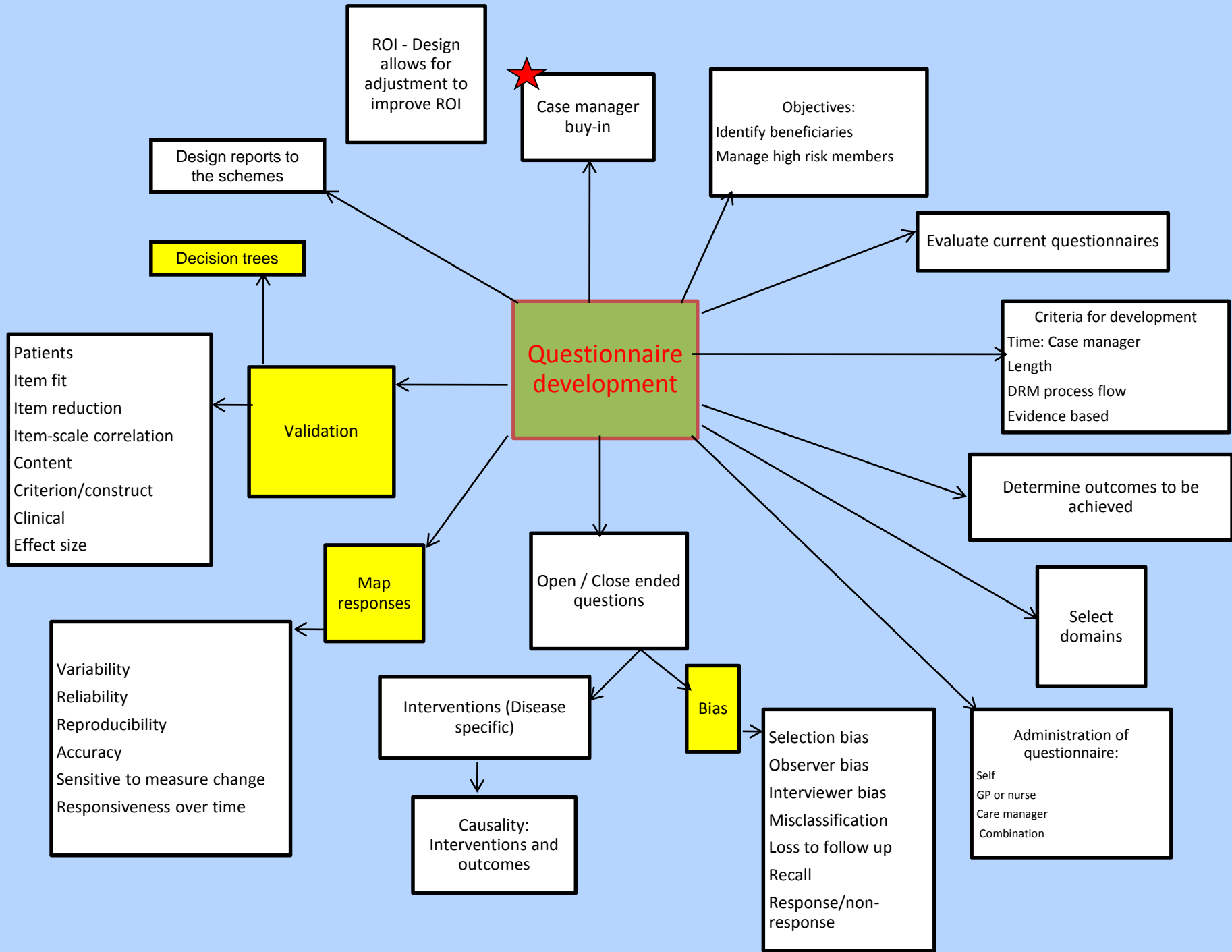
RATIONAL USE OF MEDICINES

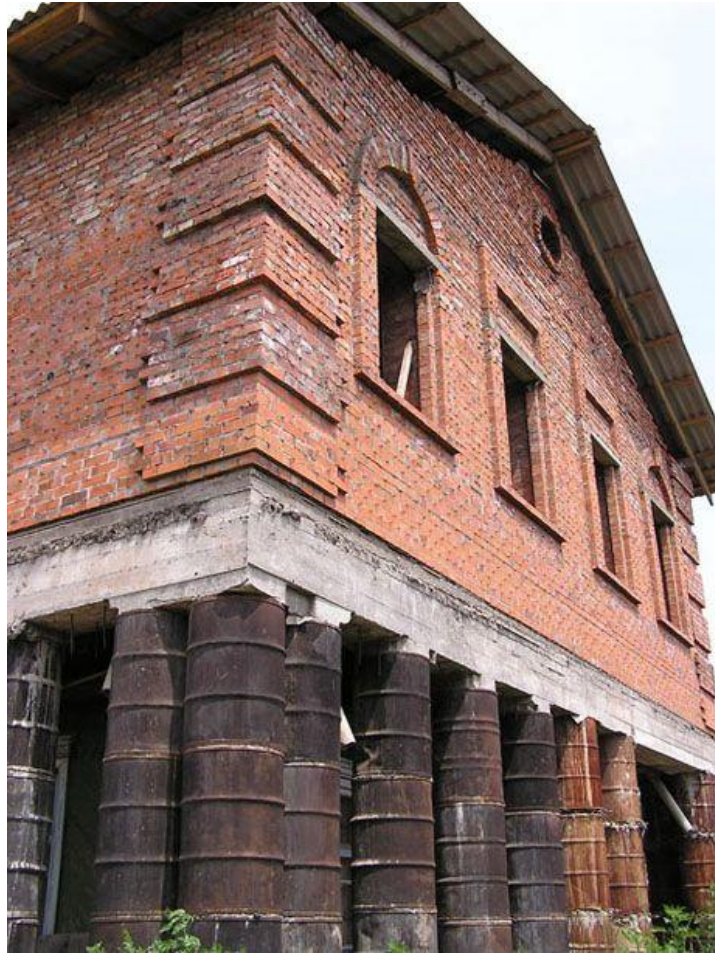
Some approaches to improve the rational use of medicines:

- Evidence-based medicine
- Cost-effectiveness
- Clinical pathways
- Multi-disciplinary teams
- Centres of excellence

Research

- Costing studies
 - Costs components
 - Episodes of care
 - Costing of protocols
- Patient-centred research
 - ICON patient delay project
 - Questionnaire design







KEY SOLUTIONS (high level)

- Develop solid foundation for delivery of health care
- Reduce wastage – better design, expertise
- Change business models and maintain profit margins
- Implement formalised peer review systems
- Formalized think tanks
- Better matching of personnel skills to tasks
- Re-training of health care workers
- Measure and audit for value
- Research

KEY SOLUTIONS

Patient-centric approach

- Patient empowerment strategies
- Care co-ordination
- Avoid cost shifting to patients
- Hospital discharge services
- Access to personal information
- Reduce wastage - Personal records
- Treatment plans
- Access to good, relevant medical information and advice

Need a paradigm shift in our thinking!!

Change the rules!!

Need experimentation and adaptation

Concluding remarks

M. Porter and T. Lee, 2013:

‘In health care, the days of business as usual are over, Around the world, every health care system is struggling with rising costs and even quality despite the hard work of well-intentioned, well-trained clinicians. Health care leaders and policy makers have tried countless incremental fixes – attacking fraud, reducing errors, enforcing practice guidelines, making patients better ‘consumers’, implementing electronic medical records – but none have had much impact’