

Safer prescribing: examples of primary care patient safety in the UK

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What I'm going to cover

1. Primary care patient safety prescribing context
2. Some relevant research and recommendations from UK
3. NIHR Greater Manchester Primary Care Patient Safety (Translational Research) Centre
4. Conclusions

Funding

The NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre is funded by The National Institute for Health Research (NIHR) and is a partnership between Salford Royal NHS Foundation Trust and the University of Manchester

Why a primary care focus is needed

- Primary care 85% of contacts in the NHS
- In 2011 in England: over 900 million prescription items dispensed, at a cost of over £8.8 billion.
- 1.6 million people visit a pharmacy daily (75% for health reasons)
- Prescribing errors in around one in 20 prescriptions

Why a primary care focus is needed

- Wrong view of primary care as a low technology environment where safety is not a problem.
- Estimates : 37 and 600 patient safety incidents daily in GP.
- Patient safety incident in ~ 2% of consultations
- Although safety risks may be lower in primary care, the volume of primary care mean it is a priority.
- Primary care patient safety is **under researched and under funded / most PS research in hospitals**

What is Safety?

Defining patient safety – an operational framework for primary care *

*Spencer and Campbell (submitted)

Safety structure & systems

Availability

Background systems inc

Informatics & interface

(harm)

Management

Premises

Workforce/team

System interface

Learning organisation

Patient / carer role

Processes of safety

Availability

Clinical care

interpersonal care

Outcomes of 'safety'

User evaluation

Mortality

Adverse events

Errors

Incident reports

Significant events

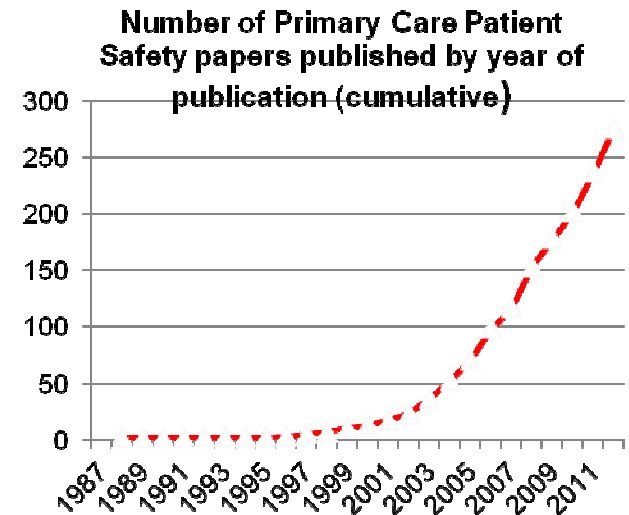
Improvement

“avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of health care” (Vincent 2005)

What are we learning?

Systematic review: Spencer & Campbell (NIHR SPCR - PST)

- Most literature from USA (41%) and UK (23%) in <10 years
- Majority on **medication error (55%)**, safety climate (8%) and adverse event reporting (8%).
- Primary/secondary care interface is well described but few specific tools for primary care exist
- Diagnostic error and results handling are grossly under-represented (<1% of lit).



Why focus on medication safety?

Medication is the most commonly used intervention to treat patients in healthcare

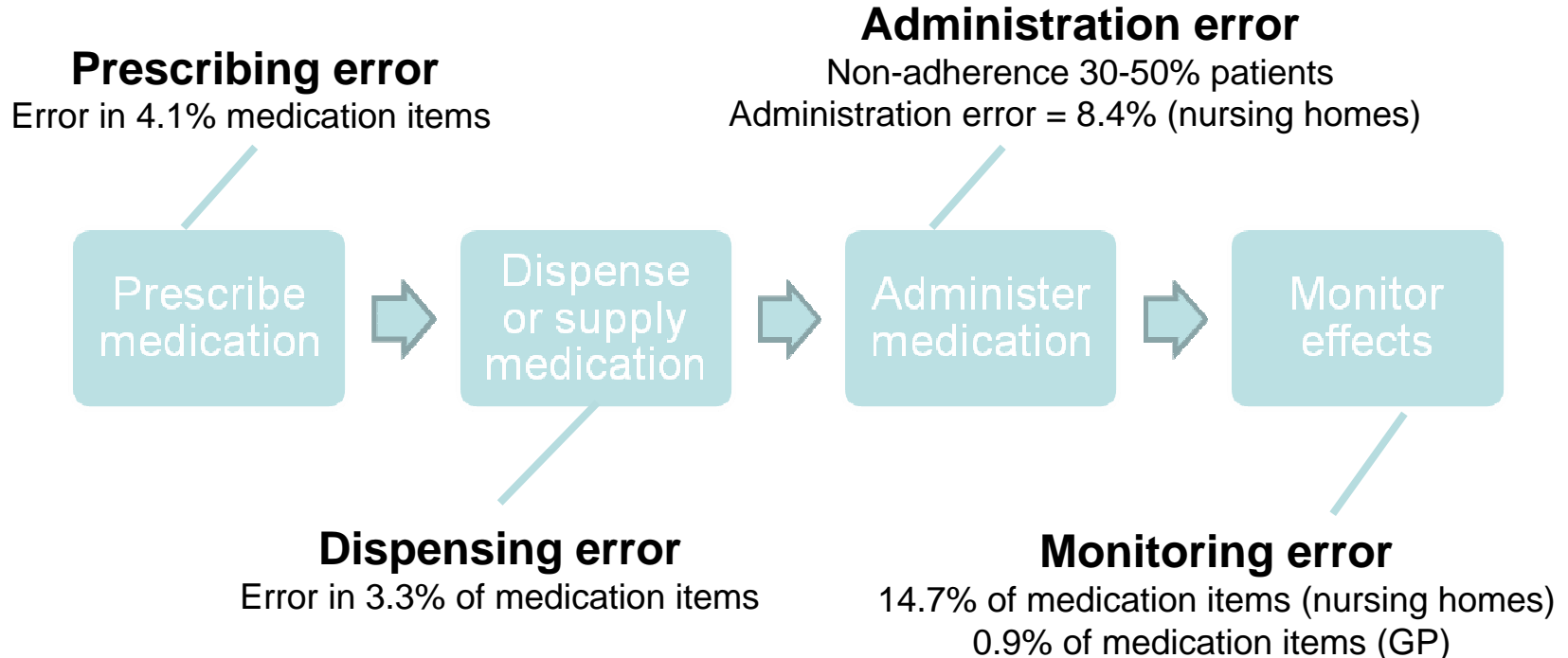
A common cause of patient safety problems / Prescribing errors are an important cause of morbidity and mortality

These often result from failures in the way that medicines are managed to ensure that the **right** drug is given for the **right** diagnosis to the **right** patient and in the **right** way



Medication errors in primary care

Over 730 million prescription items are issued in primary care in England each year



Preventable medication-related problems

Size of the problem:

In terms of frequency of hospital admissions, comparable to:

- Cancer
- Heart attack
- Asthma
- Diabetes

Within four weeks of receiving a prescription in primary care, 25% of patients experience an adverse drug event (ADE), 11% of which are judged preventable

PRACTICE study: Investigating the prevalence and causes of prescribing errors in general practice 2009

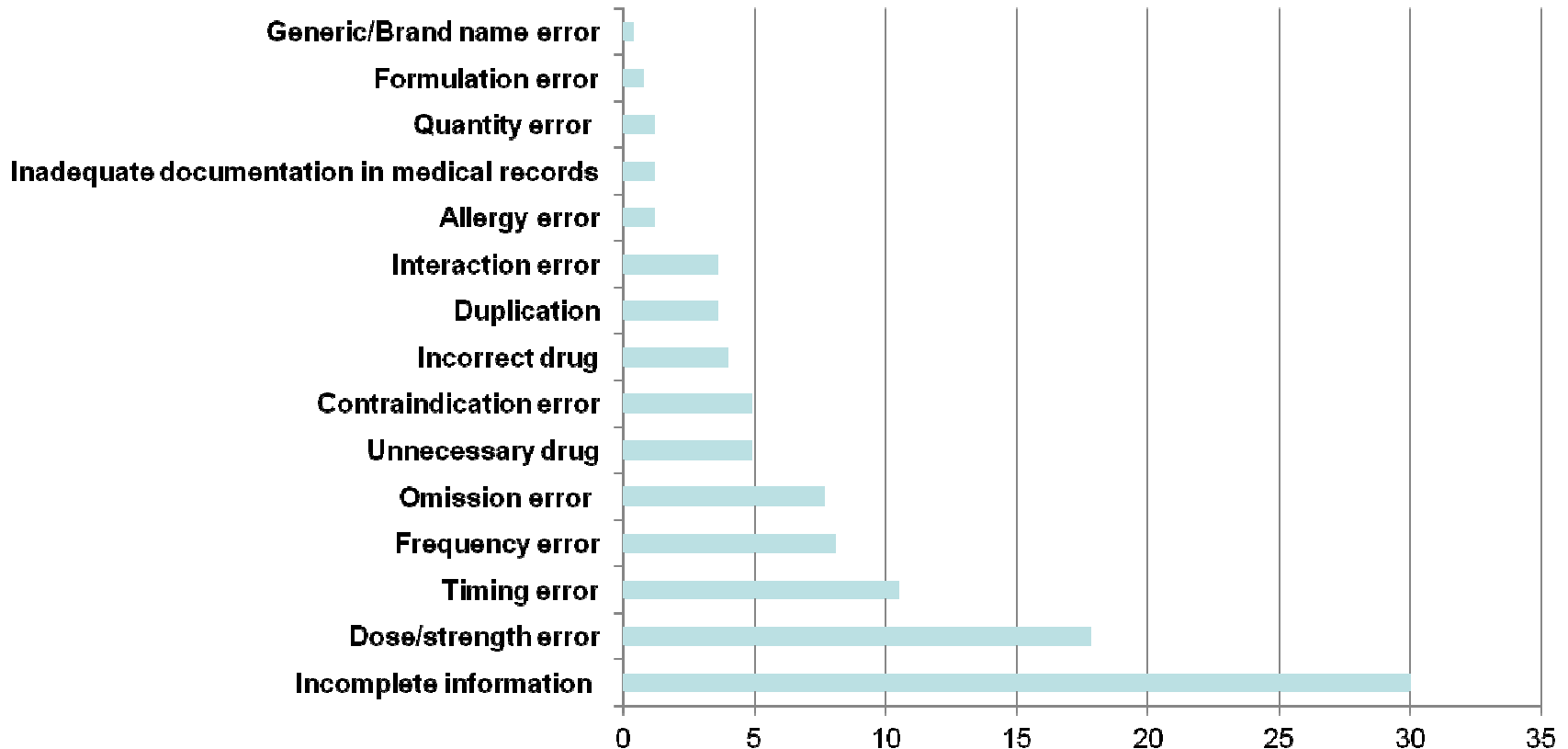
- To determine the prevalence and nature of prescribing (and monitoring) errors in general practice
- Retrospective case note review, depth interviews with prescribers, focus groups & root cause analyses
- 6,048 unique prescription items for 1,777 patients over 12 months from 15 general practices
- 1 in 20 prescription items contained a prescribing or monitoring error, affecting 1 in 8 patients.
- Majority of errors were of mild or moderate severity, 1 in 550 of all prescription items = severe error.

Acknowledgements

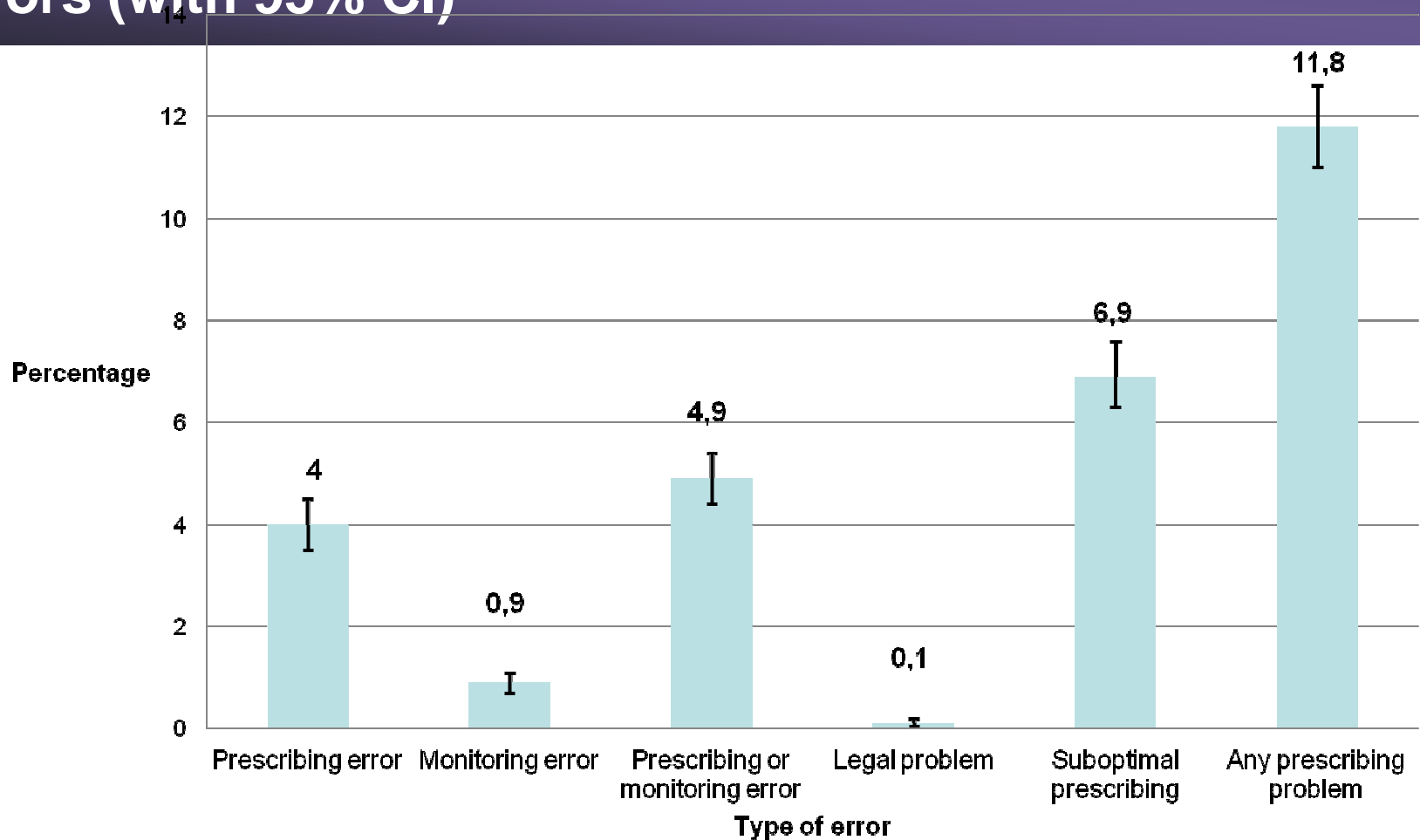
- Professor Tony Avery and team / GMC for funding the study

PRACTICE study: Investigating the prevalence and causes of prescribing errors in general practice 2009

Percentage



PRACTICE study: Prevalence of prescribing or monitoring errors (with 95% CI)



PRAcTIce study: Severe errors

- There were eleven severe errors, nine involved warfarin monitoring and two involved prescribing a drug to which the patient had a documented allergy.
- Of the nine warfarin-monitoring errors, eight occurred in three patients from the same GP practice, where it was routine practice to prescribe warfarin without knowledge of the patient's INR.
- There was no documented evidence of any actual harm arising for any of these severe errors.

PRACTICE study: Factors associated -risk of errors

Increased risk:

- Age
 - Less than 15 years (odds ratio 1.87 (95%CI 1.19-2.94, P=0.006)
 - Greater than 75 years (odds ratio 1.95 (95%CI 1.19-3.19, P=0.008)
- Number of unique medication items prescribed (odds ratio 1.16, 95%CI 1.12-1.19, P<0.001, for each additional medicines prescribed)
- Being prescribed preparations in the following therapeutic areas:
 - (cardiovascular, infections, malignant disease and immunosuppression, musculoskeletal, eye, ENT and skin)

Reduced risk:

- Practices with a list size of > 10,000 had reduced risk of error (odds ratio: 0.56 (95%CI 0.31-0.99, P=0.047))
- Female gender (odds ratio: 0.66, 95%CI 0.48-0.92, P=0 .013)

PRACTICE study: Safer prescribing initiatives

- Educational initiatives.
- Clinical Governance.
- ICT initiatives.
- Pharmacist initiatives.
- Improving safety systems.

PRAcTIce study: Educational initiatives.

Greater emphasis needed on therapeutics and prescribing skills

- in GP training and assessment
- In CPD for GPs

Educational packages to:

- Highlight key learning points from the PRAcTIce study
- Support GPs in dealing appropriately with high-risk prescribing scenarios, and high-quality medication review
- Help GPs make best use of information technology to support safe prescribing
- Help general practices improve their safety systems

Strengthen prescribing focus in curriculum, training and assessment

PRAcTIce study: Clinical Governance.

- Conducting audits using prescribing safety indicators
- Conducting significant event audits
- Adhering to medication safety policies
- Reporting adverse prescribing events

PRAcTIce study: ICT initiatives.

Promote effective use of clinical computer systems for safe prescribing

Encourage GP computer systems suppliers to make best use of *existing* clinical decision support technologies to:

- Help prescribers give appropriate dosage instructions
- Provide context-specific dosage guidance taking account of patient factors such as age and renal function
- Alert the most common and important examples of hazardous prescribing
- Alert to the need for blood test monitoring for certain high-risk drugs

PRACTICE study: Pharmacist Initiatives

The PINCER trial approach:

- Identification of patients at risk
- Educational outreach
- Practical action/support to improve prescribing safety

Reviewing safety of prescribing, e.g. GPs in training

Medication review, particularly for complex patients

Helping to ensure that GP computer systems provide :

- the best support for safe prescribing, e.g.
- highlighting formulary items and drugs for specialist use only,

PRAcTIce study: Improving safety systems

Review the procedures for

- repeat prescribing,
- medication monitoring,
- medication reviews and
- communication at interfaces in health care

Primary care organisations, general practices, community

- pharmacies and acute trusts take account of recommendations for managing patients' medicines after discharge from hospital

Review the procedures for minimising interruptions to clinical staff

PRAcTIce study: Summary

- Prescribing errors in general practices are common, although severe errors are unusual. The prevalence, nature, causes and consequences have not been fully investigated
- Many factors increase the risk of error.
- Strategies for safer prescribing should focus on GP training, continuing professional development for GPs, clinical governance, effective use of clinical computer systems, pharmacist led initiatives, and improving safety systems within general practices

Acknowledgements

- Professor Tony Avery and team / GMC for funding the study
www.gmc-uk.org/about/research/12996.asp

The Pincer Trial

A cluster randomised trial comparing the effectiveness of a pharmacist-led IT-based intervention with simple feedback in reducing rates of clinically important errors in medicines management in general practices

Acknowledgements

- Professor Tony Avery and team

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The PINCER Trial: Baseline primary outcome measures

Outcome measure	Simple feedback	Pharmacist intervention
Patients aged ≥ 18 with a history of peptic ulcer (but no PPI) prescribed an NSAID	93/1 970 (4.7%)	87/1 828 (4.8%)
Patients ≥ 18 with asthma prescribed a beta-blocker	628/20 634 (3%)	537/18 906 (2.8%)
Patients ≥ 75 on long-term ACE inhibitors or loop diuretics with no U&E in the previous 15 months	483/4 722 (10.2%)	549/4 349 (12.6%)

The PINCER Trial: conclusions

The pharmacist-led complex intervention was effective at reducing proportions of patients at risk of hazardous prescribing at 6-months follow-up

These differences were less marked at 12-months follow-up, suggesting that a one-off pharmacist intervention may not lead to long-term changes in the prevalence of medication errors

NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre

<http://www.population-health.manchester.ac.uk/primary-care-patient-safety>

Greater Manchester Primary Care Patient Safety Translational Research Centre

What we are called...

Full title: The National Institute for Health Research Patient Safety Translational Research Centre at NHS Greater Manchester on behalf of Salford Primary Care Trust and University of Manchester

Short title: NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre

Shorter title: Greater Manchester PSTRC

In partnership with Salford Royal NHS Foundation Trust

Funded by NIHR: £6.3m/€7.5m/A\$9.8m/ 9,855,662.55 US\$ - over 5 years from 1 August 2012

Also - Imperial College



The Framework

1. **Define** the nature and scale of safety problems in primary care and its interface with other health sectors.
2. **Identify** and **understand** ways to address these problems drawing on knowledge from other health and industrial sectors.
 - I. Identify tools/approaches used successfully in other others sectors and which could be translated into primary care
 - II. Where necessary develop new tools/approaches
3. **Test** and refine candidate tools/approaches in real world context
 - I. Through targeted feasibility studies

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GM PSTRC Themes



Core Theme (Prof Stephen Campbell)
Governance/Finance, PPI-PE

Medication safety (Prof Darren Ashcroft / Prof Tony Avery):
Problem: medication error is a main cause of harm in primary care

Multimorbidity (Prof Peter Bower):
Problem: Identify, develop and evaluate patient- and carer-oriented interventions to minimise safety failures in patients with multimorbidity

GM PSTRC Themes

General practice (Prof Stephen Campbell)

Problem: Estimates : 37 and 600 patient safety incidents daily – 20% with serious consequences.

Interface / informatics (Prof Iain Buchan / John Ainsworth):

Problem: Errors frequently arise when information is transmitted across organisational boundaries: Berwick 2013 emphasised the importance of complete transparency of data to improve care.

Aims: Medication Safety

Short Term

Identify the key components and develop a Safety Management System (SMS) to improve medication safety in primary care

Medium Term

Pilot the SMS to explore how medication safety within, and between, healthcare organisations can be improved, and produce indicators to monitor the effectiveness of such arrangements

Longer Term

Test the viability of implementing the SMS within primary care, and examine its effectiveness against the key indicators

Expected outcomes: Medication Safety

A better understanding of how to improve medication safety in primary care

A safety improvement method that can be used across primary care

Relevant research – find out what patients can do

Lead: Professor Stephen Campbell

Title: Patients' perspectives and understanding of high-performing, **safety conscious** general practice: an exploratory study (2012-2013)

Funder: NIHR SPCR

Qualitative research explores patients' understanding and experiences of safety in general practice :

- What contribution can patients make to understanding and improving the safety of their care?
- Are concepts and terms used commonly in patient safety literature understood by patients?
- How do patients conceptualise such issues and obstacles or promoters of 'safe' practice?

What can we learn from quality of care?

- Clear definitions and concepts needed
- Targets & incentives cause unintended consequences
- Multiple systems wide approaches: micro-meso-macro
- Mostly formative – not summative
- Hand-in-hand with implementation strategies
- Individuals - not just populations and surveys
- Patient & public involvement: Berwick, Francis
- Test/pilot everything : validity, reliability, acceptability etc

Patients as individuals must be pre-eminent.

What are we learning?

- Measureable outcomes are only one feature of Safety Management Systems,
- Also other areas such as training, policy, culture and feedback of outcomes data and **systems approaches**

Amalberti R, Vincent C, Auroy Y, de Saint Maurice G. Violations and migrations in health care: a framework for understanding and management. *Quality and Safety in Health Care* 2006;15(suppl_1), i66-71.

Reason J. Human error: models and management. *BMJ* 2000;320(7237):768-770.

Thank you very much for listening

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