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The Importance of AKI

James Tollitt

Renal Specialist Trainee

Salford Royal NHS Foundation Trust

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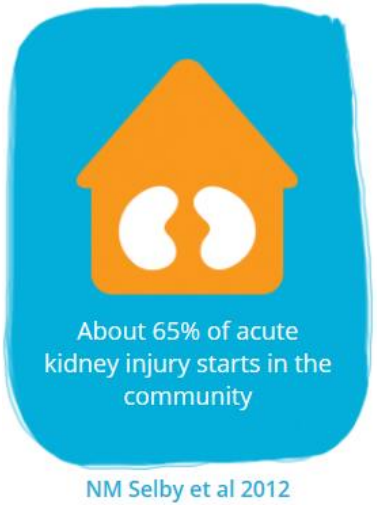
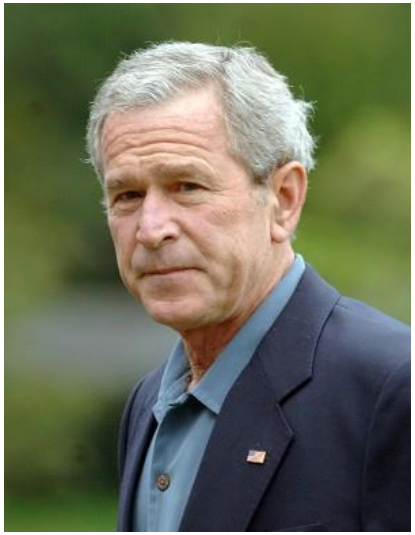
- Why is AKI important?
- What do we define as AKI?
- What do patients think kidneys do?
- What are we doing locally?



Who is most at risk on arrival in SRFT A&E?



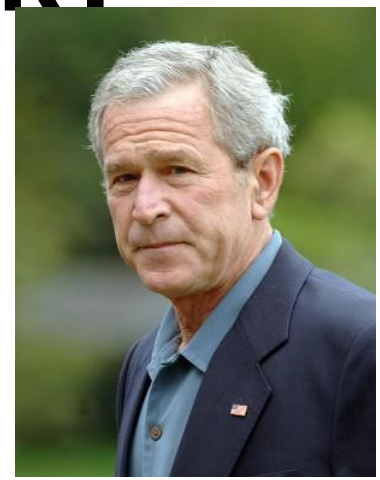
- George
- 86 year old man
- Crushing chest pain and ECG changes consistent with a large heart attack.

- Julia
- A slim 56 year old,
- Long standing diabetes, has not been feeling right - the GP did a blood test and her serum creatinine is 456 umol/L.

Q. Suggest mortality risks for both patients

Who is at greatest risk?

- For George, his risk of death is 32.2%



- For Julia, her risk of death is 53.1%

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AKI Staging

AKI stage	Serum Creatinine criteria		Number of patients per annum sustaining each stage of AKI in 1000-bedded hospital
1	SCr increase ≥ 26 µmol/L or SCr increase ≥ 1.5-2 fold from baseline		2727
2	SCr increase ≥ 2-3 fold from baseline		782
3	SCr increase ≥ 3 fold from baseline or SCr increase ≥ 354 µmol/L or initiated on RRT (irrespective of stage at time of initiation)		636
			total 4145

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

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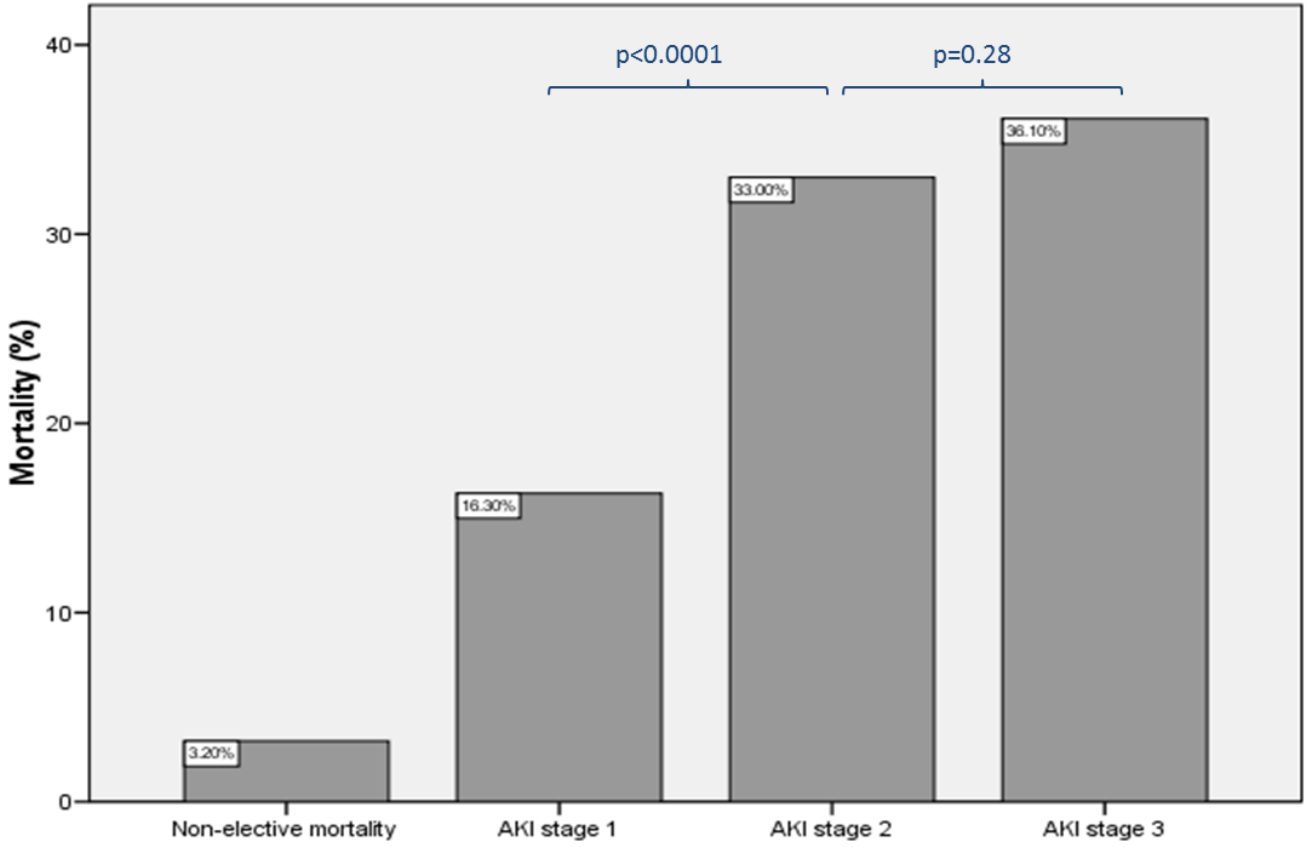
In Hospital Mortality



Selby NM et al CJASN 2012; 7(4): 533-40

- In Salford Royal in December 2014
  - 30 patients with AKI3
  - 12 patients died (40%)

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AKI Publications


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So where is America's 'worst

Killer freeze on the way to Britain:

Facebook blames technical hitch after

Latvian builder DID kill schoolgirl Alice

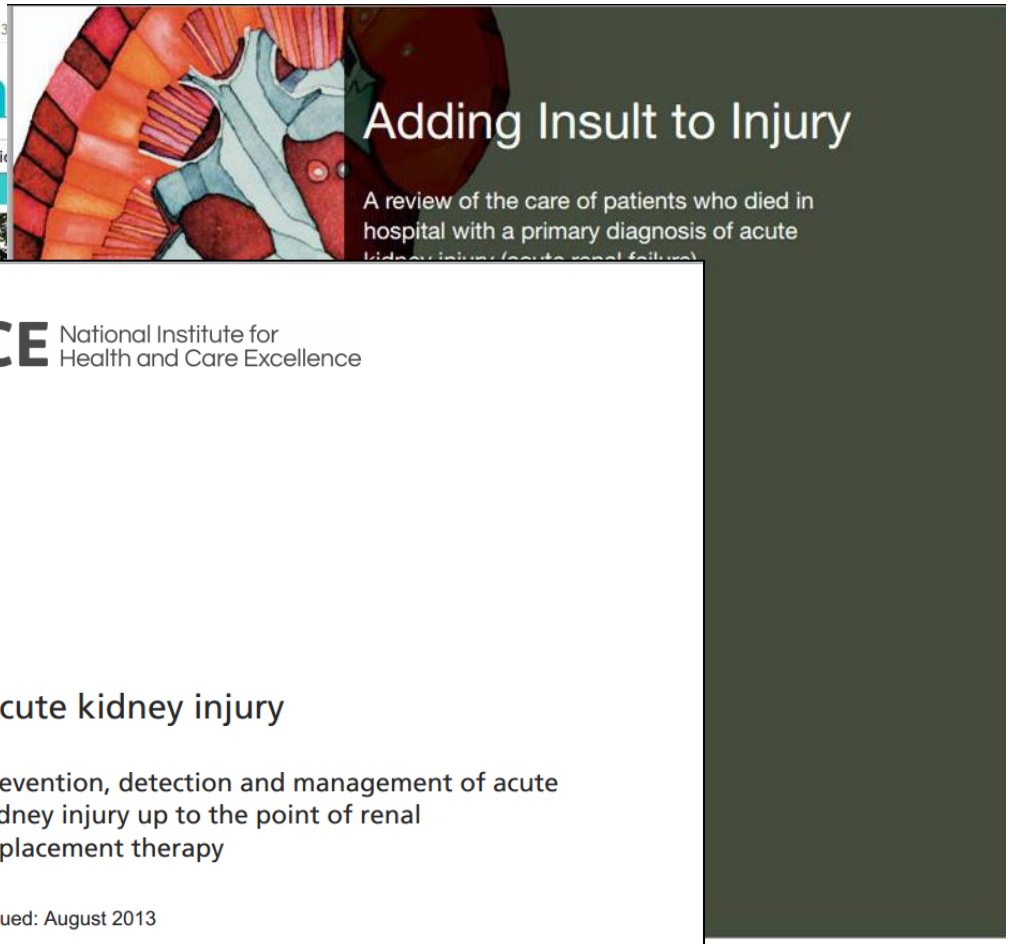
1,000 patients a month are dying in hospital from 'avoidable' kidney problems caused by dehydration

- Acute kidney injury (AKI) causes up to 40,000 excess deaths every year
- New report warns this figure is FIVE times higher than originally thought
- Severe dehydration is one of main causes of the condition

By ANNA HODGEKISS

PUBLISHED: 00:15, 22 April 2014 | UPDATED: 08:41, 22 April 2014

Share 119 View comments



NICE National Institute for Health and Care Excellence

Acute kidney injury

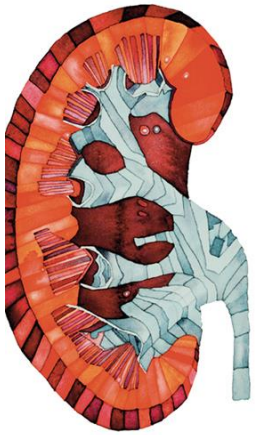
Prevention, detection and management of acute kidney injury up to the point of renal replacement therapy

Issued: August 2013

NICE clinical guideline 169
guidance.nice.org.uk/cg169

Key Findings

National Confidential Enquiry into Patient Outcome and Death



- Only 50% of AKI care considered good
- Poor assessment of risk factors
- Unacceptable delay in recognition of post-admission in AKI in 43%
- 22% patients died with a primary diagnosis of post-admission AKI which was predictable and avoidable
- Complications missed (13%), avoidable (17%) or badly managed (22%)

NCEPOD

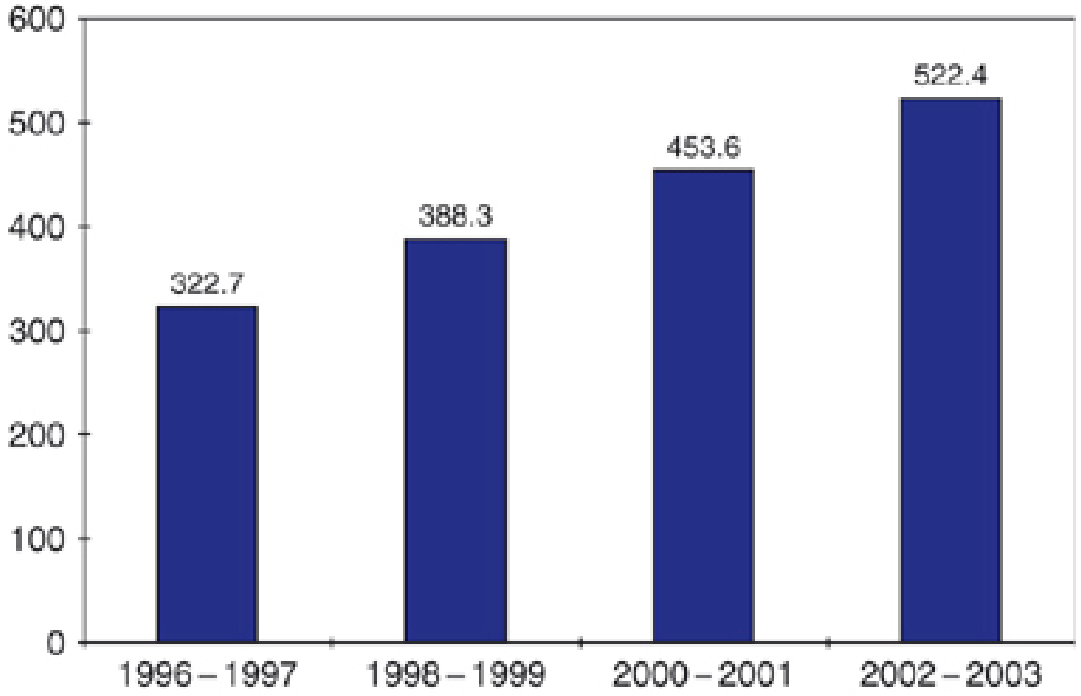
Acute Kidney Injury:
NICE Guidance – who are vulnerable?

- Elderly
- Socially isolated
- Cognitive impairment
- Multimorbidity
- eGFR <60 (CKD)
- Past history of AKI
- Heart failure
- Diabetes
- Liver disease
- Hypovolaemia
- Use of drugs/agents with nephrotoxic potential (NSAIDS, ACE Inhibitors, ARBs, diuretics, aminoglycosides, contrast)
- Risk of urological obstruction

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

Incidence of AKI is increasing

* Per 100,000 person years



Hsu CY et al. *Kidney International (2007)* ***72, 208***

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QUICK KIDNEY QUIZ!!

What proportion of general public know that kidneys make urine?

1. 100%
2. 78%
3. 66%
4. 60%
5. 51%

'THINK KIDNEYS'

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

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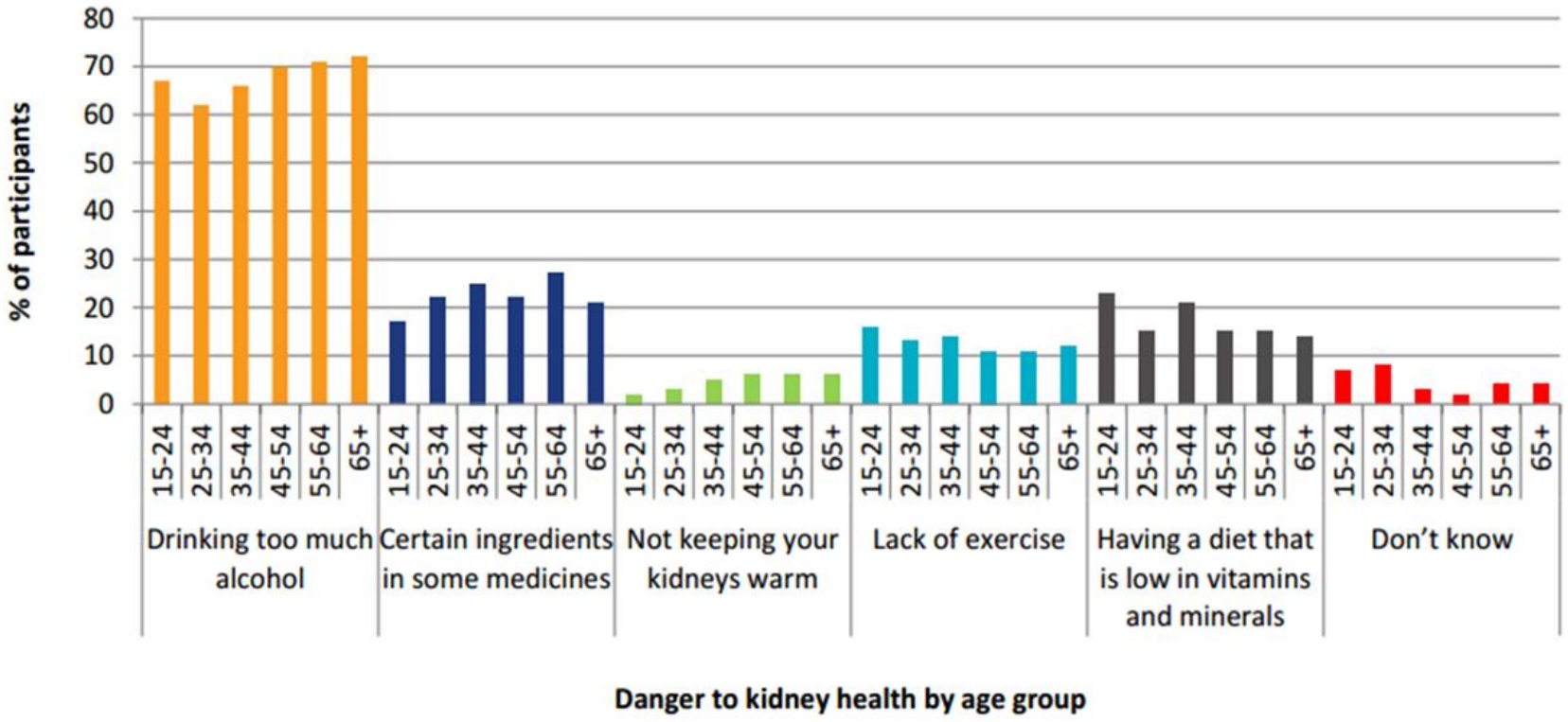
'THINK KIDNEYS'

What people think are dangers to the health of kidneys, by age group



In addition locally

- SRFT AKI Quality Improvement Project
- 'SPARC' – Salford Partnership for Advancing Renal Care – starting with SRFT nephrologists visiting practice for case based discussions post AKI
- Lab AKI alerts to primary care 2015
- Salford CCG – LTC Locally commissioned service – CKD is a named LTC
- National CQUIN – improved information on discharge summaries

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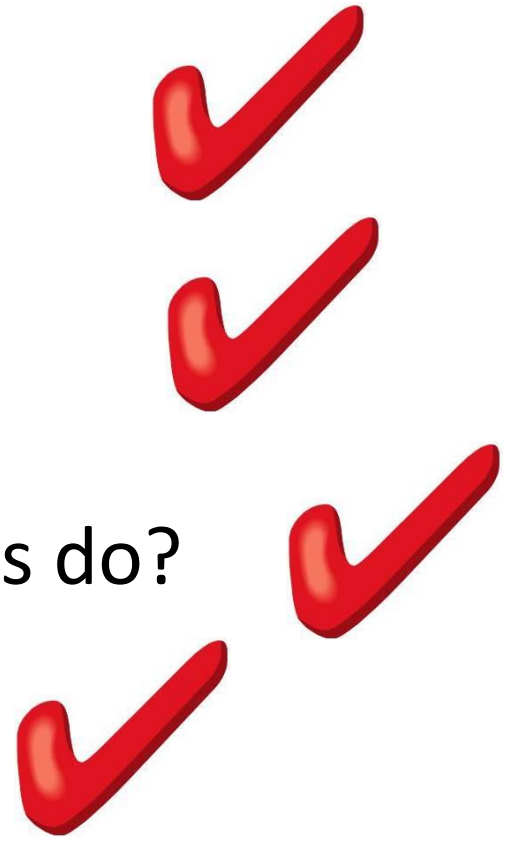
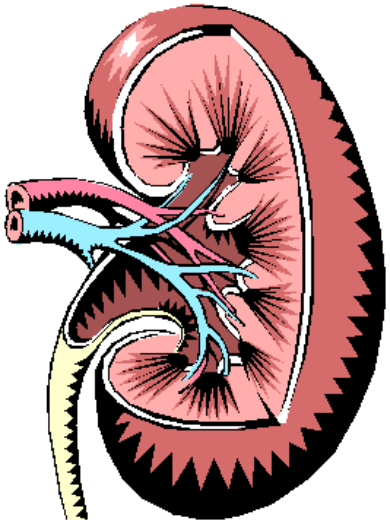


Take Home Messages

1) AKI has high mortality
2) AKI incidence is increasing
3) 65% AKI is community acquired
4) Patient knowledge of kidneys is poor
5) Collaborative approach to patient education is required

Optimising Kidney Health in the Community

Dr Tom Blakeman
GP & Clinical Lecturer in Primary Care
NIHR CLAHRC for Greater Manchester
tom.blakeman@manchester.ac.uk



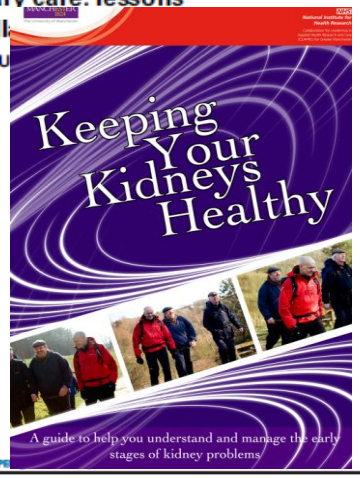
Outline:
Making kidney health meaningful

Might be worth thinking about the kidneys when….

- Maintaining Vascular Health
- Managing Acute illness & Vulnerability

'THINK KIDNEYS'

Kidney Health:
Salford - Driving quality improvement



Non-disclosure of chronic kidney disease in primary care and the limits of instrumental rationality in chronic illness self-management

Gavin Daker-White[a,*], Anne Rogers[b], Anne Kennedy[b], Thomas Blakeman[c], Christian Blickem[c], Carolyn Chew-Graham[d]

[a] NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre, Institute of Population Health, Williamson Building, The University of Manchester, Oxford Road, Manchester M13 9PL, UK

PLOS ONE

Effect of Information and Telephone-Guided Access to Community Support for People with Chronic Kidney Disease: Randomised Controlled Trial

Tom Blakeman[1¶], Christian Blickem[1,¶], Anne Kennedy[2], David Reeves[3], Peter Bower[3], Hannah Gaffney[1], Caroline Gardner[3], Victoria Lee[3], Praksha Jariwala[1], Shoba Dawson[1], Rahena Mossabir[1], Helen Brooks[1], Gerry Richardson[4], Eldon Spackman[4], Ivaylo Vassilev[2], Carolyn Chew-Graham[5], Anne Rogers[2]

1 NIHR Collaboration for Leadership in Applied Health Research (CLAHRC) Greater Manchester, Centre for Primary Care, Institute of Population Health, University of Manchester, Manchester, United Kingdom, 2 NIHR CLAHRC Wessex, Health Sciences, University of Southampton, Highfield Campus, Southampton, United Kingdom, 3 NIHR School for Primary Care Research, Centre for Primary Care, Institute of Population Health, University of Manchester, Manchester, United Kingdom, 4 Centre for Health Economics, University of York, Heslington, York, United Kingdom, 5 Primary Care & Health Services, University of Keele, Staffordshire, United Kingdom

"UK general practice is in a unique position to tify people at increased susceptibility to AKI and ess potentially modifiable exposures."

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The University of Manchester

What is high quality care?

- Accessible
- Clinically effective
- Patient-centred

Campbell, Roland & Buetow, Social Science & Medicine, 2000

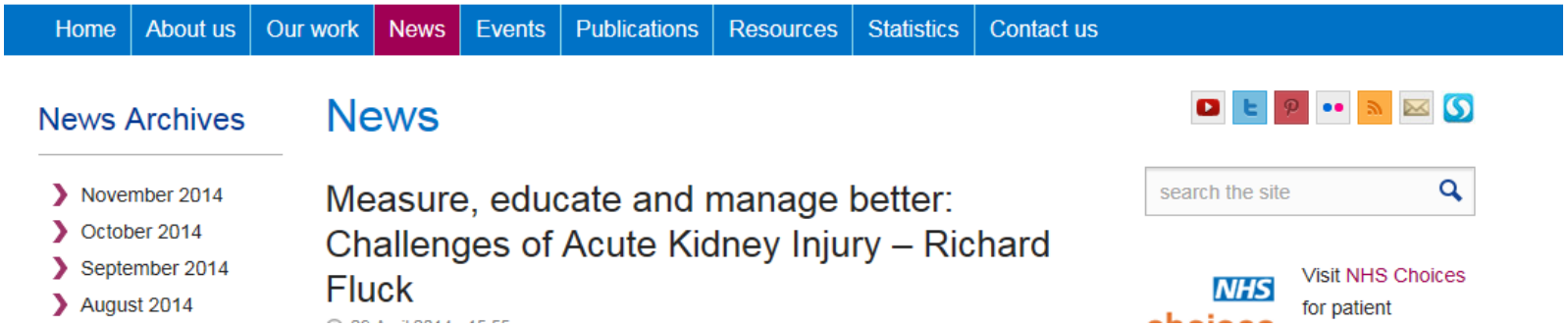
- Safe
- Efficient
- Equitable

US Institute of Medicine

Achieving High Quality Care:
AKI - a driver of Quality across the NHS?

High quality care for all,
now and for future generations

NHS England



'If we can get it right for AKI, we will get basic care right across the NHS.'

Professor Donal O'Donoghue
BBC, 2013

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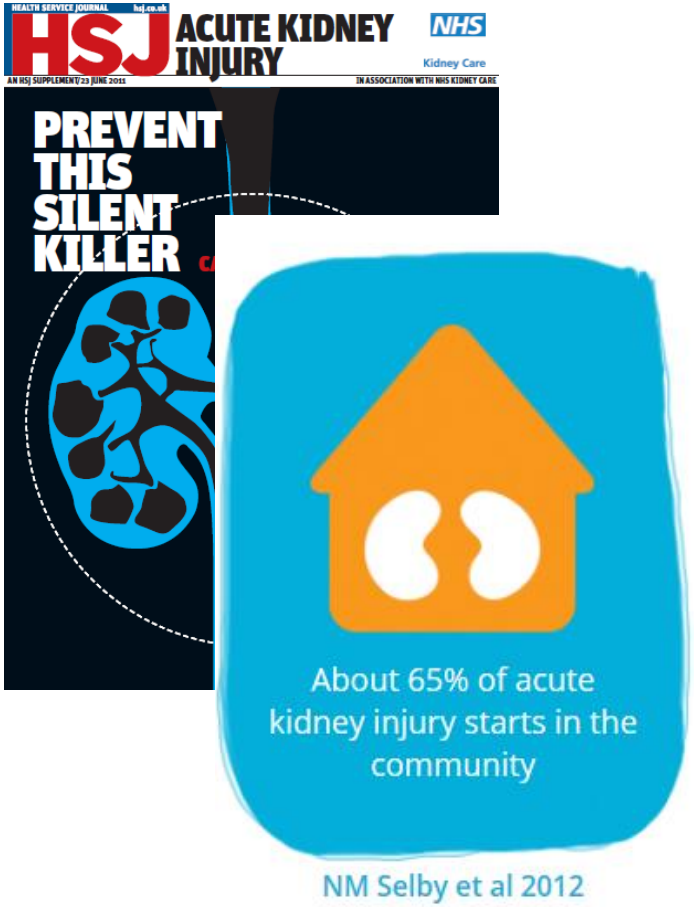
Acute Kidney Injury

- Common
- Harmful
- Costly
- Potentially Avoidable



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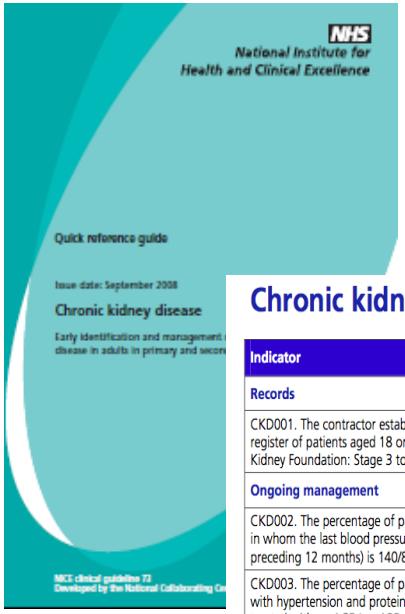
Making Kidney Health Meaningful: A need to broaden & tailor conversations?

Kidneys in the context of

Supporting Vascular Health



Chronic kidney disease (CKD)

Indicator	Points	Achievement thresholds
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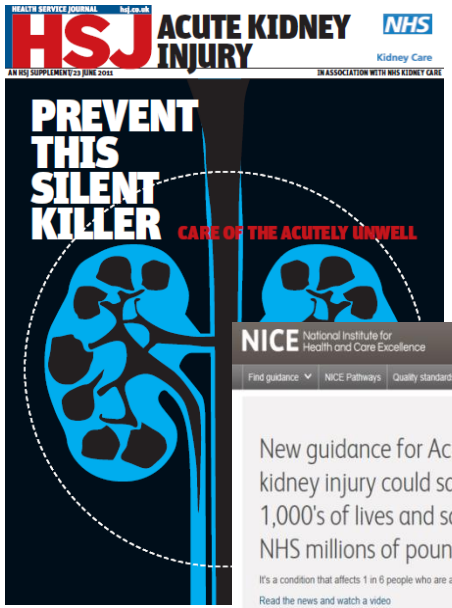
Kidneys in the context of

Managing acute illness



Kidneys in the context of supporting vascular health
&
Preventing renal disease progression

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NICE Guidance:
Management of chronic kidney disease in primary care

Chronic kidney disease

Issue date: September 2008

Early identification and management of chronic kidney disease in adults in primary and secondary care

Stage	GFR	Description
1	90 or over	Normal or increased GFR, with other evidence of kidney damage
2	60–89	Slight decrease in GFR, with other evidence of kidney damage
3A	45–59	Moderate decrease in GFR, with or without other evidence of kidney damage
3B	30–44	
4	15–29	Marked decrease in GFR, with or without other evidence of kidney damage
5	Under 15	Kidney failure

* Stage 3 chronic kidney disease has been divided into 3A and 3B to help clinicians manage the condition more effectively.

NICE clinical guideline 73
Developed by the National Collaborating Centre for Chronic Conditions

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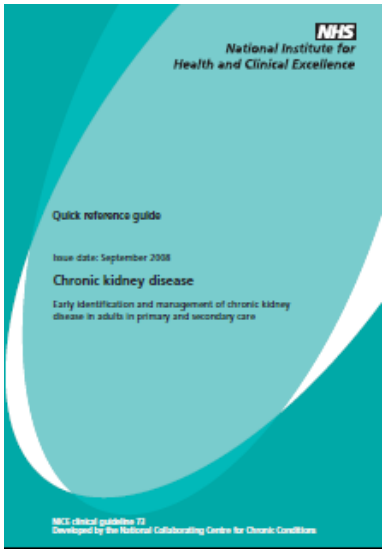
NICE Guidance: Management of chronic kidney disease in primary care

~5-6% population have CKD stages 3-5

Exists with other conditions:
Hypertension, IHD and diabetes

CKD is an independent risk factor for cardiovascular disease



Discussion of CKD as a platform to support:

- BP Control
- ➢ Lifestyle change
- ➢ Medicines management

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The Quality & Outcomes Framework: CKD & a focus on vascular health

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http://bma.org.uk/practical-support-at-work/contracts/independent-contractors/qof-guidance

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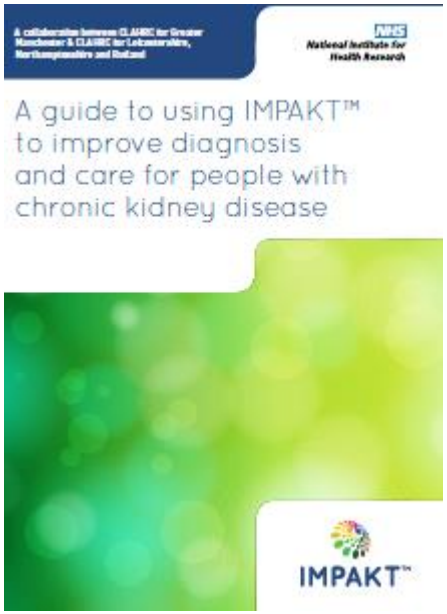
CKD in the context of Vascular Health: Identification & management in general practice



- Diagnose ‘missing’ cases of CKD
- Manage and stratify risk of progressive CKD
- Manage BP and proteinuria

http://www.impakt.org.uk/

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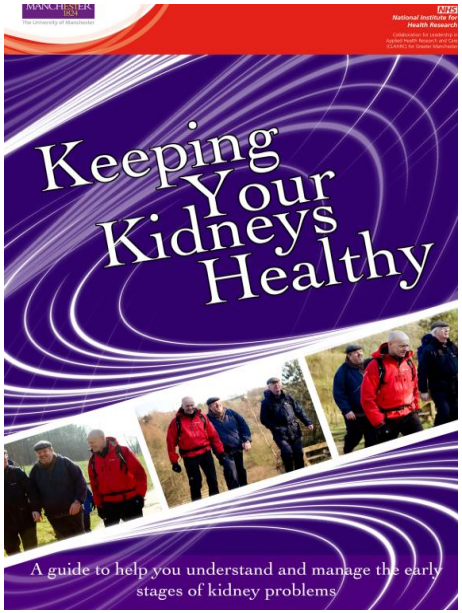
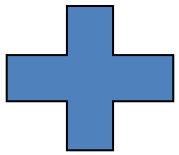
CKD in the context of Vascular Health: Bringing Information & Guided Help Together





http://www.plansforyourhealth.org/

Why bother with the elderly?

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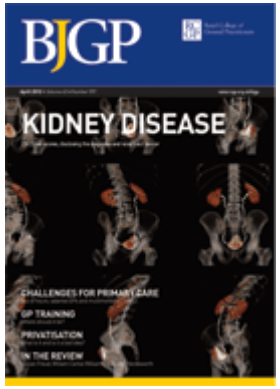
A key tension:
Identifying & discussing Kidneys in older people & patients with stage 3A



'... if you've got CKD or you're young and you've got proteinuria, definitely that is a really important thing to hammer in. But yeah, 80/90 year olds, I wouldn't suggest we're probably discussing it, if they've got a mild CKD3.' (GP06)

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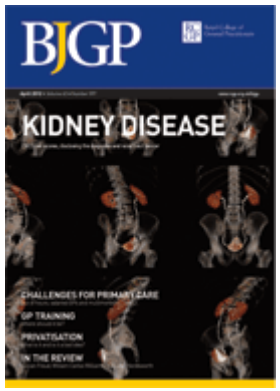
Framing Kidney discussions: 'Nothing to worry about'

'*I try and reassure them at the beginning that there isn't anything actually to worry about....*

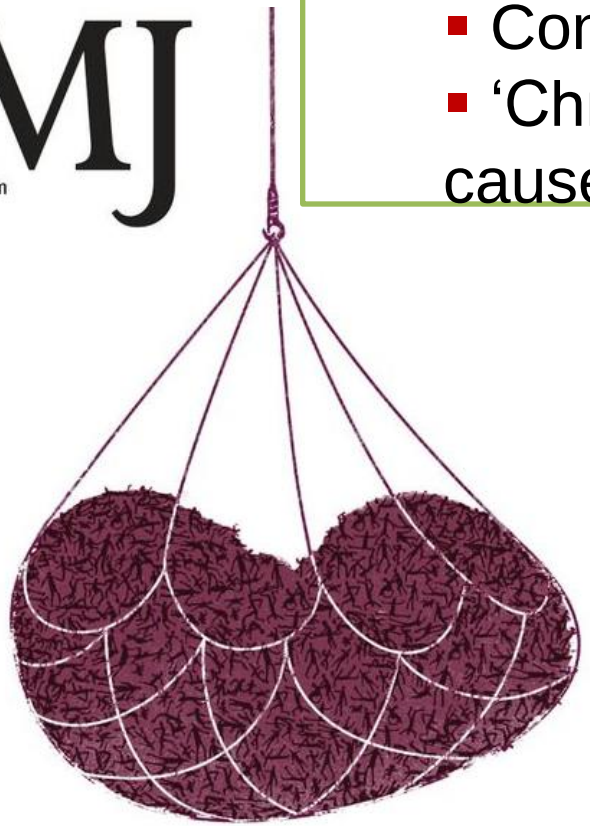
….But just to let them know, I feel that they should know that they're on a register and tell them not to worry. If there's anything to worry about we'll let them know.' (nurse 11)



- Concerns about over diagnosis
- 'Chronic' 'disease' labelling may cause unnecessary anxiety

BMJ

3 August 2013 | bmj.com



Is the definition of chronic kidney disease catching too many people?

Doctor, doctor: Chronic kidney disease and anxiety

Dr Tom Smith

The Guardian, Saturday 7 August 2010

Will I need dialysis and a kidney transplant? Plus, I'm anxious about anxiety

Photograph: Aaron Tilley for the Guardian

Acute Kidney Injury (AKI)
National Programme

Understanding what the public know about their kidneys and what they do

Findings from Ipsos MORI survey – July 2014

| Version 0.1

21.01.2015

Think Kidneys is a national programme led by NHS England in partnership with UK Renal Registry

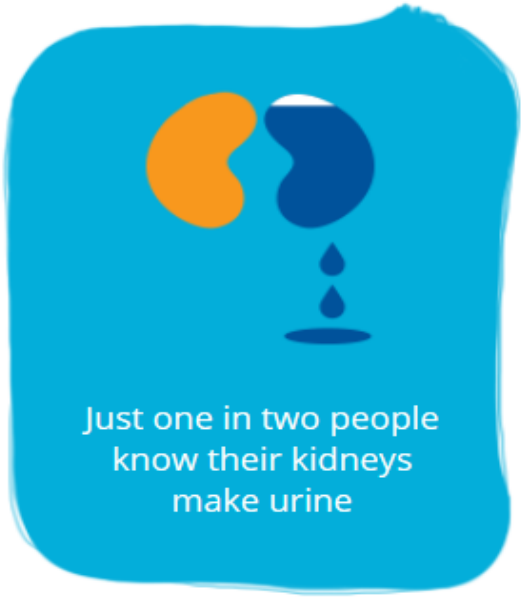
Minding the Gap: Headline findings

People don't have a comprehensive understanding of

- what their kidneys do,
- how to keep them healthy
- what acute kidney injury is

- Only 51% of the population know that kidneys make urine

- Only 12% of participants thought that the kidneys had a role to play in processing medicines



Ipsos MORI survey, July 2014

'THINK KIDNEYS'

National Acute Kidney Injury (AKI) Programme

'THINK KIDNEYS'

Structures & Processes ⟶ Outcomes
AKI: A Driver of Quality across the NHS?

NHS England Patient Safety Steering Group

AKI National Programme Board

- **Risk**
- **Education**
- **Detection**
- **Intervention**
- **Implementation**
- **Measurement**

Learning from Case Studies: http://www.thinkkidneys.nhs.uk

Structures & Processes ⟹ Outcomes
AKI: A Driver of Quality across the NHS?

Doing the basics well in primary care:

- Review appointments
- Managing urgent care
- Post discharge care

Editorials

Acute kidney injury in the community:

why primary care has an important role

REASONS FOR FOCUSING ON ACUTE KIDNEY INJURY

There is mounting evidence that awareness of kidney function is central to the delivery of safe and clinically-effective care, in terms of preventing both cardiovascular events, and progression to established renal failure, with significant impacts on quality of life and healthcare expenditure.[1,2] However,

"... UK general practice is in a unique position to identify people at increased susceptibility to AKI and address potentially modifiable exposures."

Think Kidneys:
A need for patient orientated interventions

Ipsos MORI survey,
July 2014

'THINK KIDNEYS'

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Making CKD Meaningful:
A need to broaden & tailor conversations?

CKD in the context of

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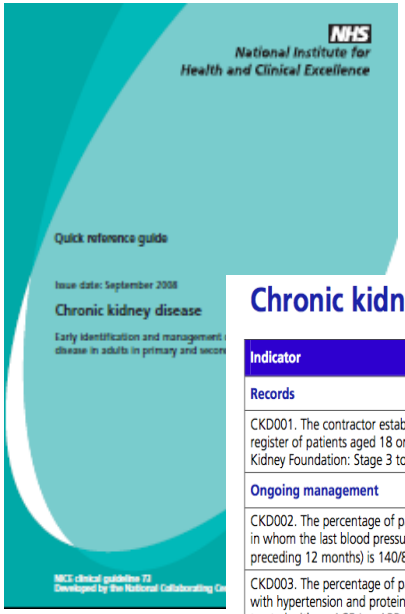

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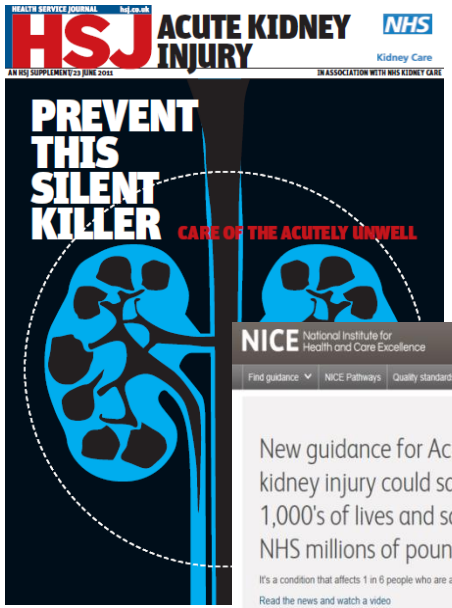
CKD in the context of

Managing acute illness



Kidneys in the context of acute illness & vulnerability

Preventing AKI

MANCHESTER 1824

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Addressing 'vulnerability'

'Having a CKD 3 register is not necessarily there for the progressive disease or even vascular disease, it's looking at vulnerability. These patients should have a card. It should say "…Do not give me gentamicin in casualty. Do not allow me to get dehydrated…'
(GP05)

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The University of Manchester

Acute Kidney Injury: NICE Guidance

‘Discuss the risk of developing acute kidney injury…with people who are at risk of acute kidney injury, particularly those who have:

- History of AKI (QS1)
- chronic kidney disease with an eGFR less than 60 ml/min/1.73 m2
- neurological or cognitive impairment or disability, which may mean limited access to fluids because of reliance on a carer.

Involve parents and carers in the discussion if appropriate.’

NICE clinical guideline 169

guidance.nice.org.uk/cg169

MANCHESTER 1824
The University of Manchester

Acute Kidney Injury: NICE Guidance

Monitoring and preventing deterioration in patients with or at high risk of acute kidney injury

Consider temporarily stopping ACE inhibitors and ARBs in adults, children and young people with diarrhoea, vomiting or sepsis until their clinical condition has improved and stabilised.

NICE clinical guideline 169

guidance.nice.org.uk/cg169

MANCHESTER 1824
The University of Manchester

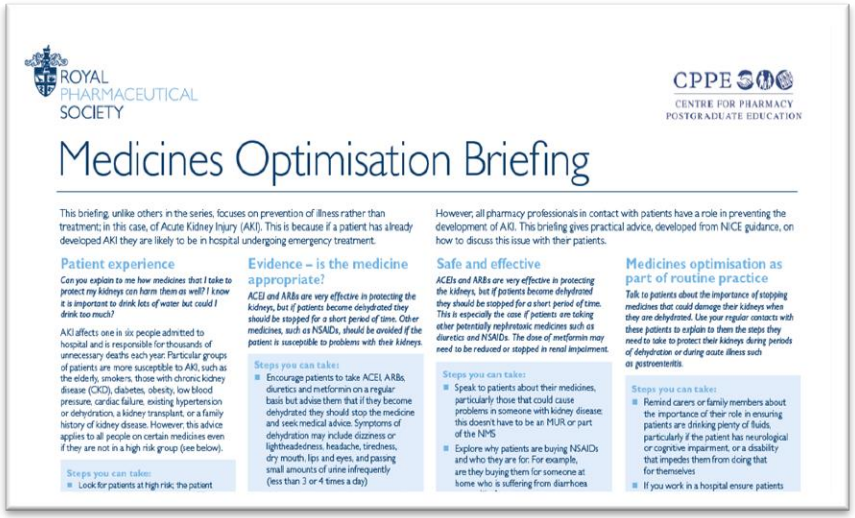
Acute Kidney Injury: RCPE UK Consensus 2012

Care of patients can be improved by **doing the basics well**. This includes:

- Early recognition of those at risk of AKI
- Informing patients at risk of AKI and their carers when to **temporarily discontinue** ACE inhibitors (ACEi) angiotensin receptor blockers (ARB), diuretics and non-steroidal anti-inflammatory drugs (NSAID) during acute illness.

RPS CPPE Medicines Optimisation Briefing March 2015

- Royal Pharmaceutical Society & Centre for Pharmacy Postgraduate Education have released new guidance on AKI for pharmacy professionals
- It provides practical advice developed from NICE guidance about discussing issues around AKI with patients
- Recognises the role of pharmacy professionals in the prevention of AKI
- The focus is on prevention of illness rather than treatment



ROYAL PHARMACEUTICAL SOCIETY

CPPE CENTRE FOR PHARMACY POSTGRADUATE EDUCATION

Medicines Optimisation Briefing

This briefing, unlike others in the series, focuses on prevention of illness rather than treatment; in this case, of Acute Kidney Injury (AKI). This is because if a patient has already developed AKI they are likely to be in hospital undergoing emergency treatment.

However, all pharmacy professionals in contact with patients have a role in preventing the development of AKI. This briefing gives practical advice, developed from NICE guidance, on how to discuss this issue with their patients.

Patient experience

Can you explain to me how medicines that I take to protect my kidneys can harm them as well? I know it is important to drink lots of water but could I drink too much?

AKI affects one in six people admitted to hospital and is responsible for thousands of unnecessary deaths each year. Particular groups of patients are more susceptible to AKI, such as the elderly, smokers, those with chronic kidney disease (CKD), diabetes, obesity, low blood pressure, cardiac failure, existing hypertension or dehydration, a kidney transplant, or a family history of kidney disease. However, this advice applies to all people on certain medicines even if they are not in a high risk group (see below).

Steps you can take:

- Look for patients at high risk; the patient

Evidence – is the medicine appropriate?

ACEI and ARBs are very effective in protecting the kidneys, but if patients become dehydrated they should be stopped for a short period of time. Other medicines, such as NSAIDs, should be avoided if the patient is susceptible to problems with their kidneys.

Steps you can take:

- Encourage patients to take ACEI, ARBs, diuretics and metformin on a regular basis but advise them that if they become dehydrated they should stop the medicine and seek medical advice. Symptoms of dehydration may include dizziness or lightheadedness, headache, tiredness, dry mouth, lips and eyes, and passing small amounts of urine infrequently (less than 3 or 4 times a day)

Safe and effective

ACEIs and ARBs are very effective in protecting the kidneys, but if patients become dehydrated they should be stopped for a short period of time. This is especially the case if patients are taking other potentially nephrotoxic medicines such as diuretics and NSAIDs. The dose of metformin may need to be reduced or stopped in renal impairment.

Steps you can take:

- Speak to patients about their medicines, particularly those that could cause problems in someone with kidney disease: this doesn't have to be an MUR or part of the NMS
- Explore why patients are buying NSAIDs and who they are for. For example, are they buying them for someone at home who is suffering from diarrhoea

Medicines optimisation as part of routine practice

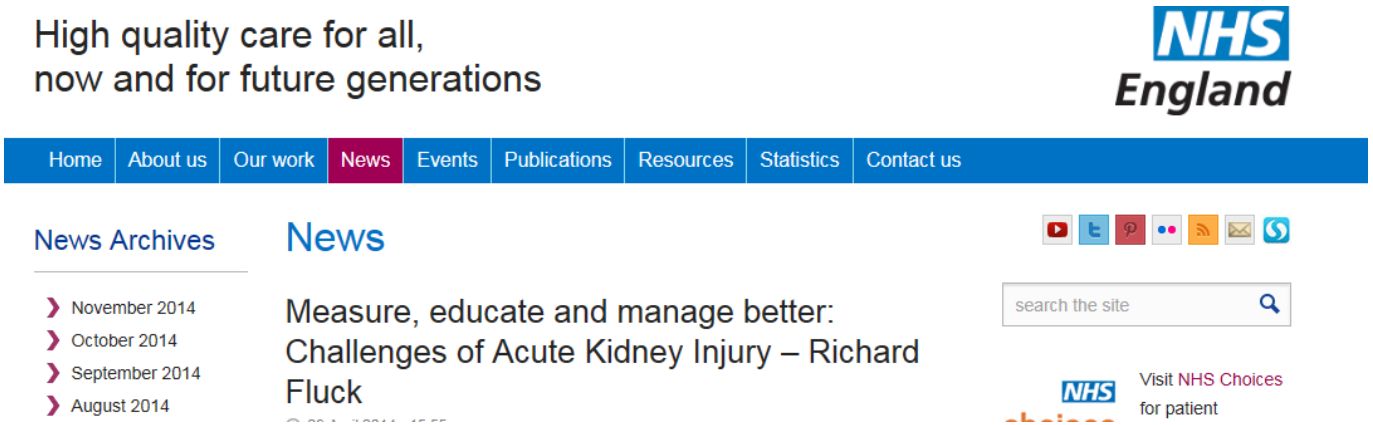
Talk to patients about the importance of stopping medicines that could damage their kidneys when they are dehydrated. Use your regular contacts with these patients to explain to them the steps they need to take to protect their kidneys during periods of dehydration or during acute illness such as gastroenteritis.

Steps you can take:

- Remind carers or family members about the importance of their role in ensuring patients are drinking plenty of fluids, particularly if the patient has neurological or cognitive impairment, or a disability that impedes them from doing that for themselves
- If you work in a hospital ensure patients

Next Steps:
Medicine 'Sick Day Rules' to prevent AKI

Achieving High Quality Care:
AKI = a driver of Quality across the NHS



'If we can get it right for AKI, we will get basic care right across the NHS.'

Professor Donal O'Donoghue

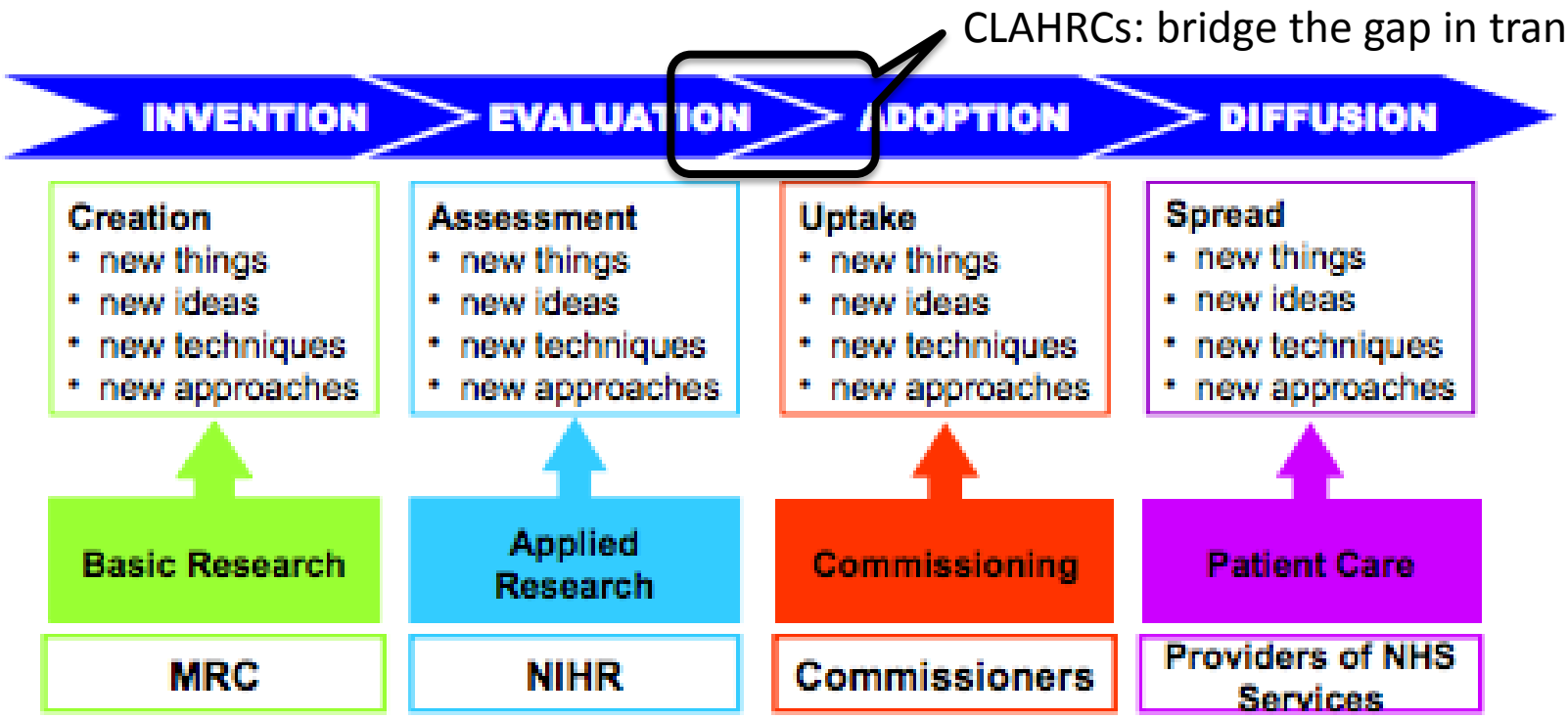
BBC 2013

Collaboration for Leadership in Applied Health Research and Care Greater Manchester (CLAHRC GM)

Susan Howard

(Programme Manager Kidney Health Programme CLAHRC)

Healthcare change pathway



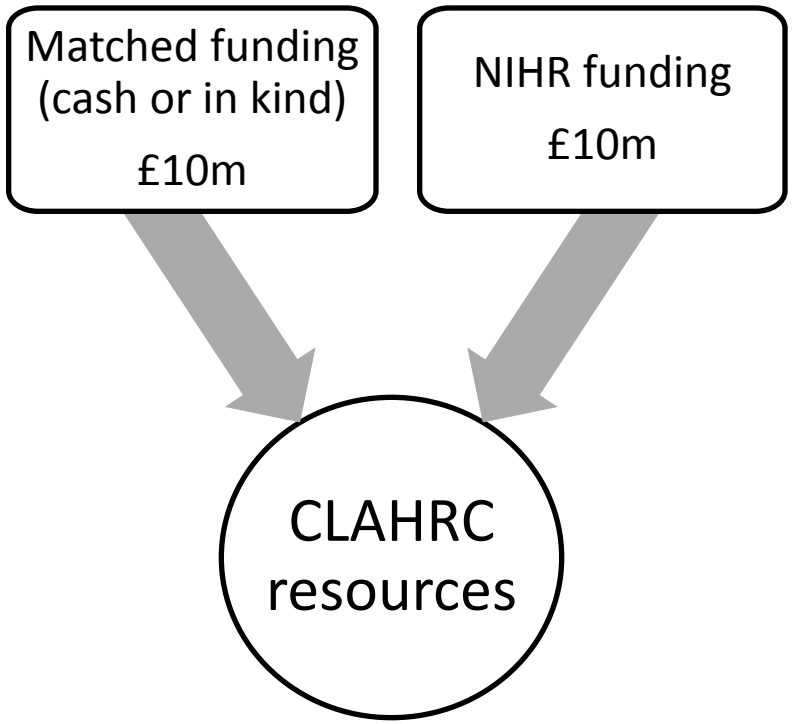
*"NIHR CLAHRCs address the **evaluation** and **identification** of those **new interventions** that are effective and appropriate for everyday use in the NHS and the **process of their implementation** into routine clinical practice"*

CLAHRC who?

Partnership between providers and commissioners from the NHS, industry, the third sector and the University of Manchester

Large scale NIHR investment

"£124 million has been allocated to 13 new collaborations that demonstrated a substantial portfolio of world-class applied health research, particularly in research targeted at chronic disease and public health interventions, and held a track record in translating research findings into improved outcomes for patients"



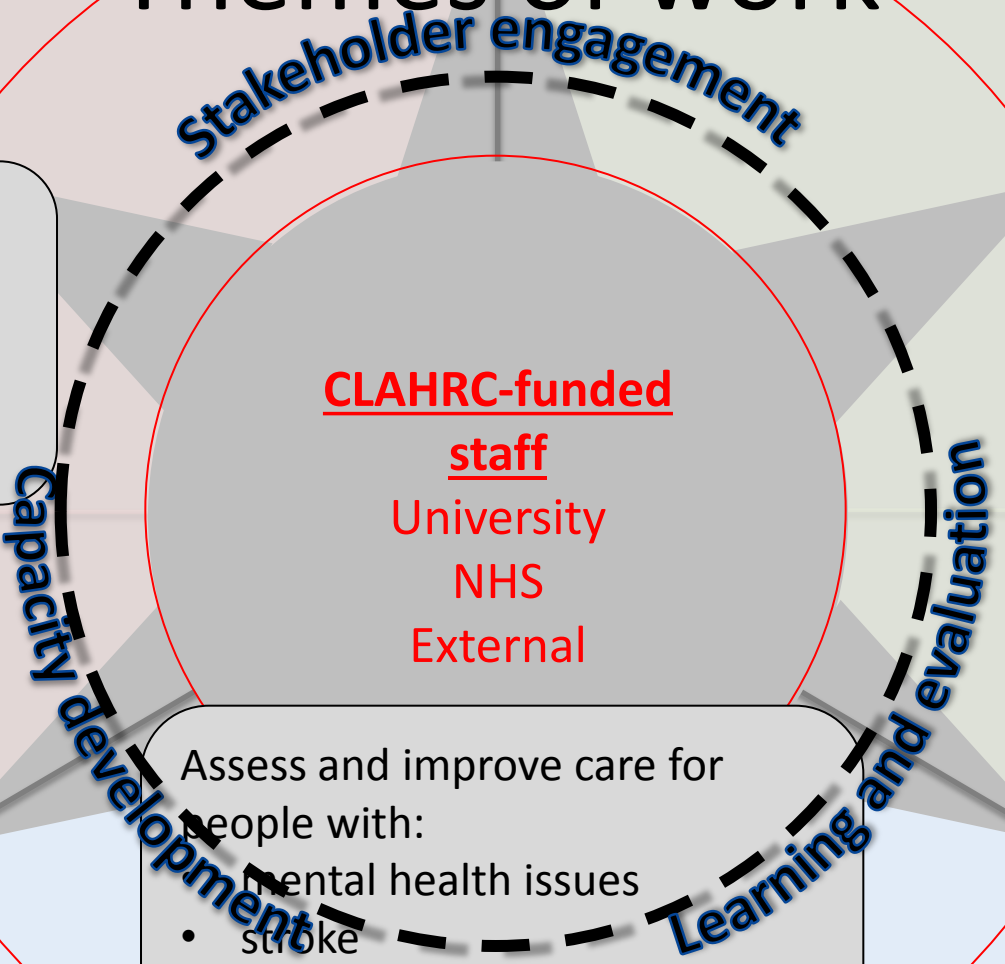
Themes of work

Primary Care

Assess and improve:
- kidney health
- access to primary care

Community Services

Assess and improve:
- wound care
- end of life care



Assess and improve care for people with:
- mental health issues
- stroke
- exploiting technology to improve patient care

Patient-centred care

Partners

Primary Care

- **NHS Salford CCG**
- NHS Salford Royal Foundation Trust
- NHS Central Manchester CCG
- NHS Eastern Cheshire CCG
- Greater Manchester CCGs Service Transformation Team
- NHS England Greater Manchester Local Area Team (LAT)
- GM Academic Health Sciences Network (AHSN)

Community Services

- Marie Curie
- Macmillan
- Central Manchester University Hospitals NHS Foundation Trust (CMFT)
- Salford Royal NHS Foundation Trust (SRFT)
- University Hospital of South Manchester Foundation Trust (UHSM)
- Pennine Care NHS Foundation Trust

- Manchester Mental Health and Social Care NHS Trust (MMHSCT)
- Mental Health Matters and Inclusion Matters (Merseyside)
- South Staffordshire and Shropshire Partnership NHS Trust

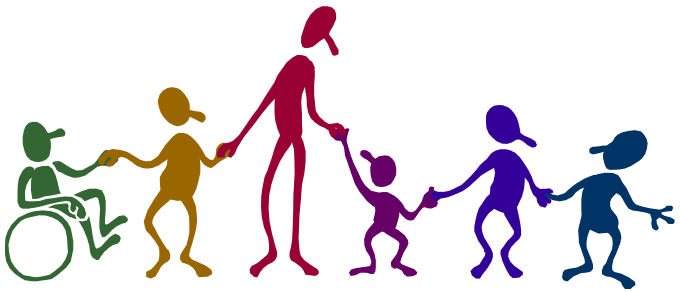
- Heidelberg Engineering
- Arthritis UK Epidemiology Unit
- Manchester Academic Health Sciences Centre (MAHSC)
- The North of England Health e-Research Centre (HeRC)
- The Stroke Association

Patient-centred care

How do we work?

Projects are carried out by:

- staff from partner organisations
- working in teams with CLAHRC staff
  - experts from the University of Manchester
  - project management and improvement specialists from the NHS



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NHS
Salford Clinical Commissioning Group

Introduction to the Acute Kidney Injury (AKI) Project: Role of GP Practices and Pharmacists

Susan Howard
(Programme Manager, CLAHRC)
Claire Vaughan
(Medicines Management Lead, NHS Salford CCG)

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

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What will the project achieve?

The project aims to - implement and evaluate sick day rules cards and kidney health initiatives to reduce incidence of AKI

The key objectives are:

- To **deliver and understand the process** surrounding the implementation of sick day rules in primary care
- To inform the design of a model of care to support better **medicine management** in primary care
- To provide an estimate of the **cost benefit** of implementing sick day rules
- To provide estimates of the **effect on health outcomes**
- To provide the platform for a potential larger scale **evaluation**

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What does the project entail?

Project to implement 'sick day rules' card in primary care

Phase 1 – Distribution of the card by all community pharmacies and GP practices in Salford CCG

Phase 2 – Facilitated implementation of kidney initiatives by primary care medicines management pharmacists within 3 of the 8 localities in Salford CCG

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

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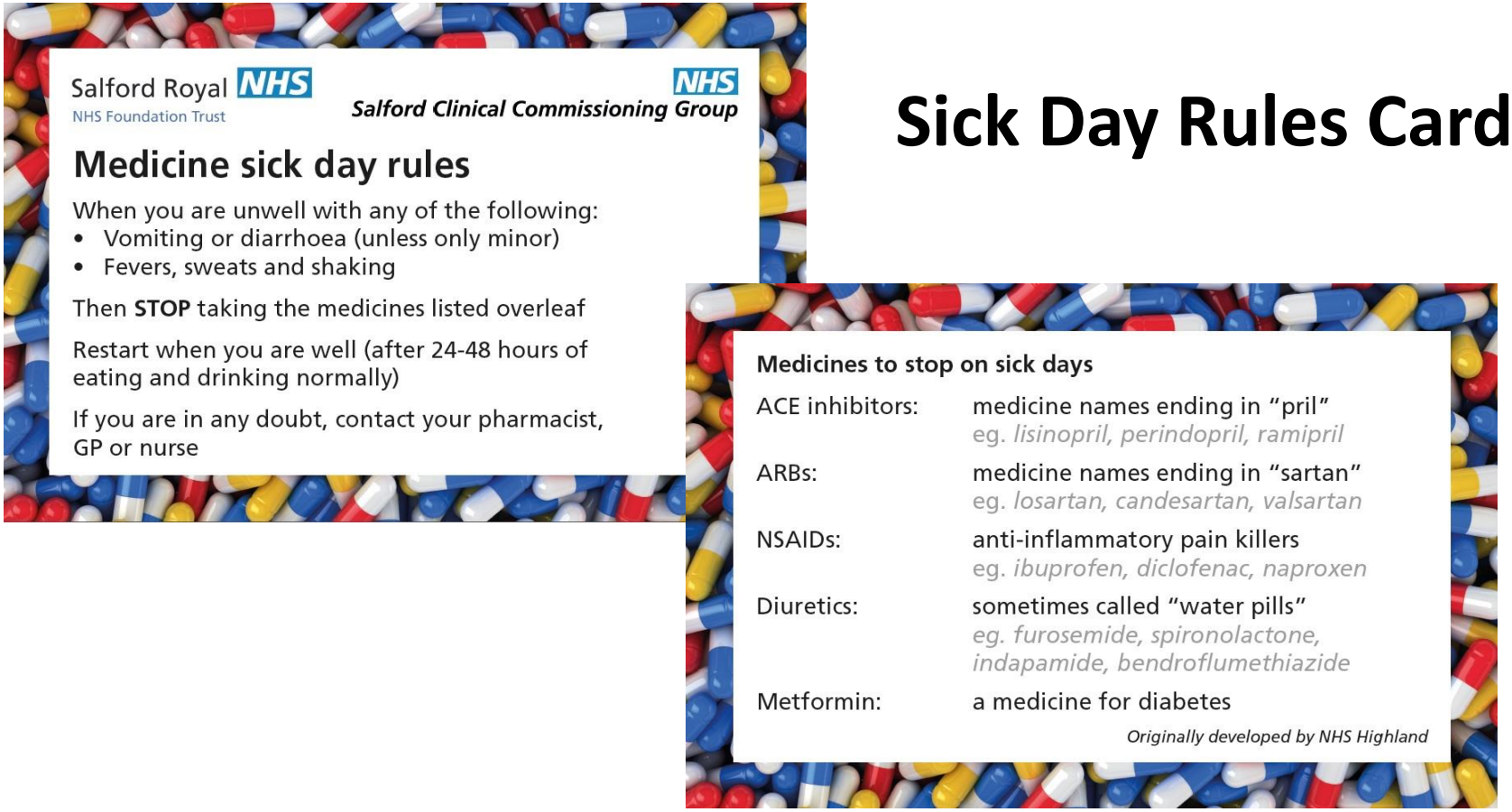
Sick Day Rules Card



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Phase 1

What are we going to do?	Implement and evaluate 'sick day rules' to reduce the occurrence of AKI
How will we do it?	Pharmacists, GPs, PNs provide cards to everyone on the relevant medication
What will it involve for you?	To issue cards to patients in person with an explanation of how to use them

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

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In your packs, you will find:-

1. An information sheet with full details of phase 1
2. Executive summary of the information sheets to pin up in your practice
3. Patient poster for your waiting area
4. A reference list if you would like to know more about AKI

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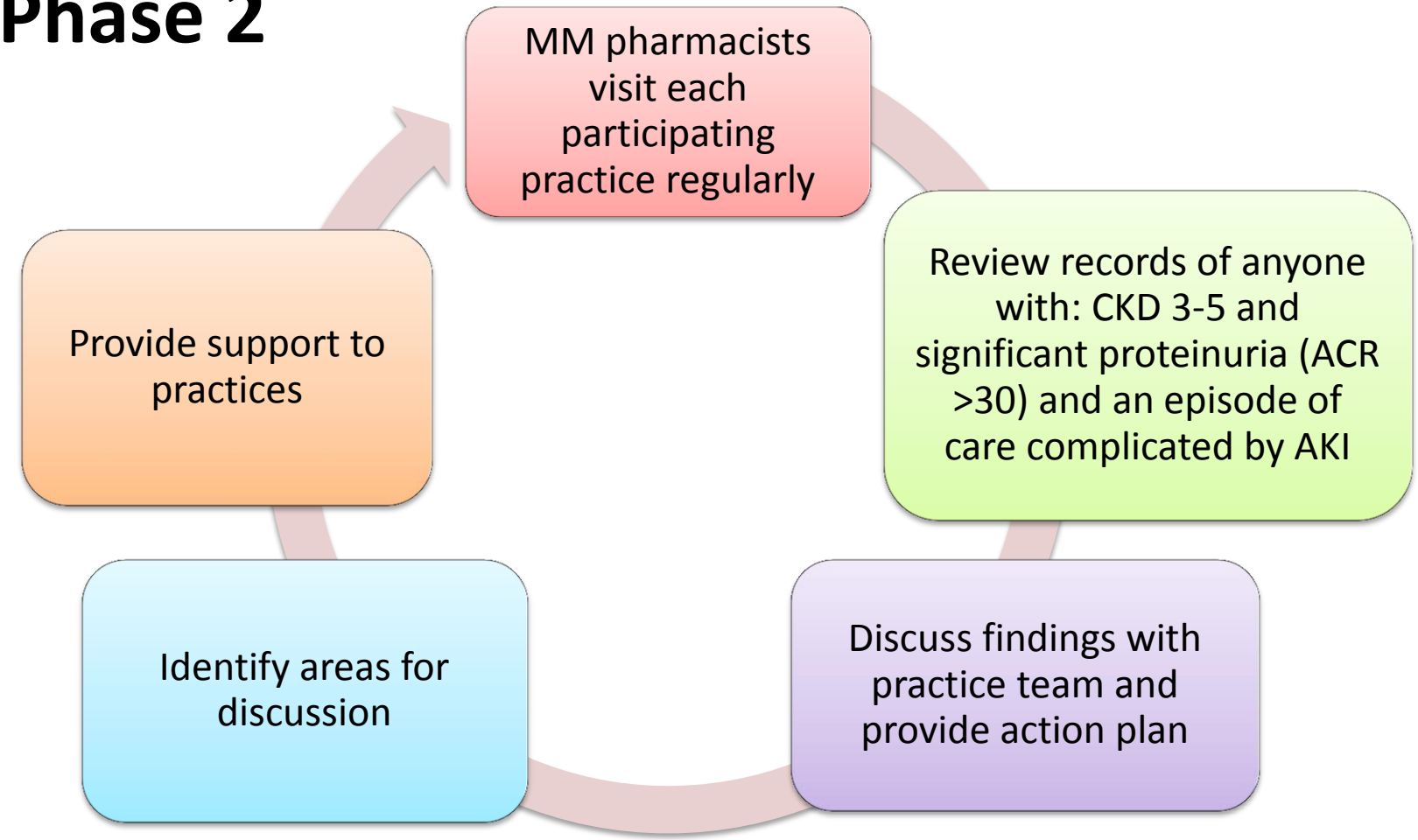
Phase 2



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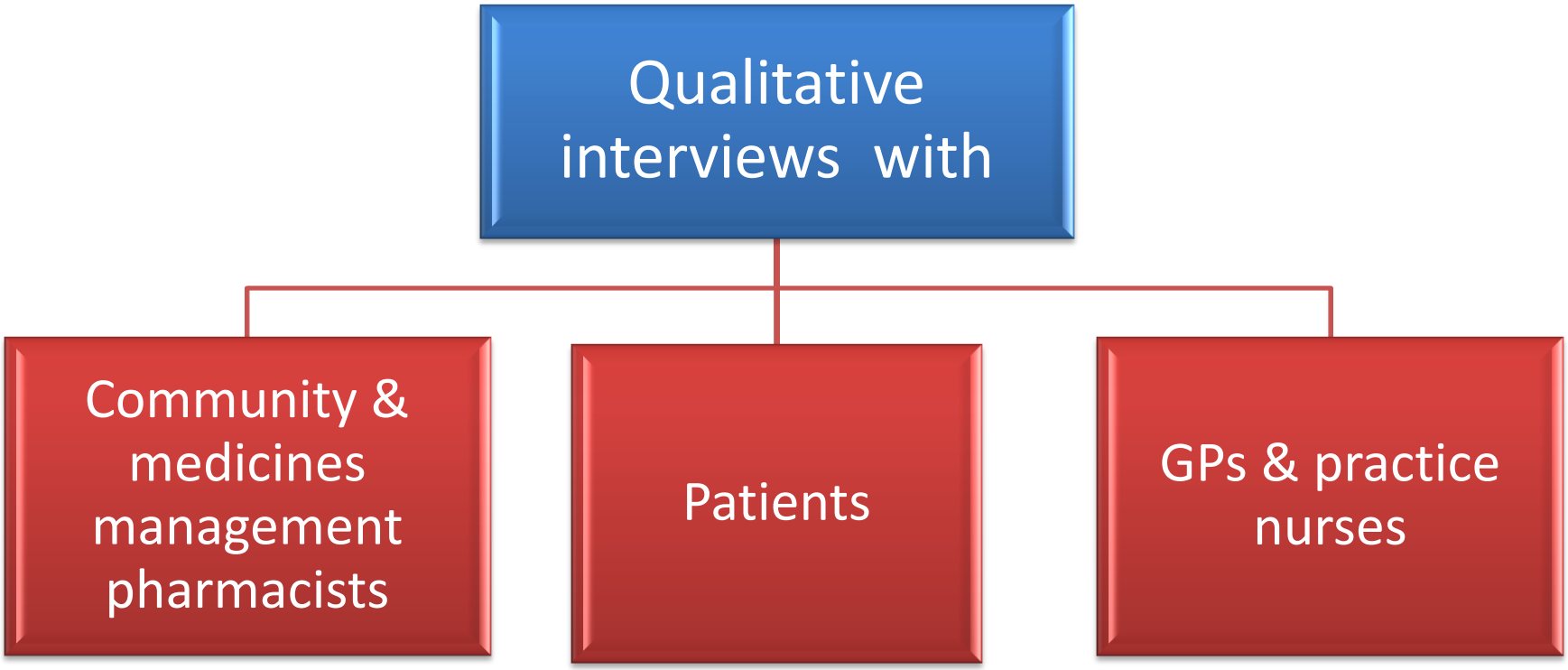
Evaluation



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Timeline

Activity	2014			2015										
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Project start up	x	x	x	x	x										
Educational events						x									
Phase 1 - roll out of sick day rules card						x	x	x	x	x	x	x	x	x	x
Training for medicines management team						x	x								
Phase 2 - facilitated implementation by MM team							x	x	x	x	x	x	x	x	x
Evaluation							x	x	x	x	x	x	x	x	x
Project close															x

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Thanks for your time

Do you have any questions?

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Case Study
Addressing AKI in the Community

Acute Kidney Injury Workshop 17th March 2015 Swinton Park Golf Club

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

Learning from Case Studies: http://www.thinkkidneys.nhs.uk

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

Case Study:
Addressing AKI in the community

AB 68 year old man: Type 2 Diabetes, COPD & stage 3 CKD with no proteinuria

Multiple medicines including repeat scripts for an ACE Inhibitor and Ibuprofen (NSAID)

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Without GP assessment, leads to an unplanned hospital admission

Episode of illness complicated by AKI requiring a period of intensive care

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Kidney function not rechecked post-discharge

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No temporary cessation of medicines during these episodes of acute illness

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Case discussion at weekly clinical meeting involving a Community Support Pharmacist

Doing the basics well: What could have been done differently?

- Preventing AKI
- Detecting AKI
- Managing AKI:

Editorials

Acute kidney injury in the community:

why primary care has an important role

REASONS FOR FOCUSING ON ACUTE KIDNEY INJURY

There is mounting evidence that awareness of kidney function is central to the delivery of safe and clinically-effective care, in terms of preventing both cardiovascular events, and progression to established renal failure, with significant impacts on quality of life and healthcare expenditure.[1,2] However,

"... UK general practice is in a unique position to identify people at increased susceptibility to AKI and address potentially modifiable exposures."

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

Preventing AKI in Primary care

- Communicate risk & consider ‘sick day rules’ for high risk patient groups
- When a patient at increased risk of AKI presents with an intercurrent illness, consider check renal function
- Avoid prescription of long term NSAIDs where possible, particularly in high risk patients and those with CKD
- Avoid prescribing triple combination of spironolactone, NSAID and ACEi/ARB
- Monitor renal function one week after the introduction of the following medications: ACEI/ARB; Spironolactone, Loop Diuretics (CKD)

For more information, please visit www.clahrc-gm.nihr.ac.uk/salford-sick-day-rules

Detecting AKI in Primary care

When a patient at increased risk of AKI presents with an intercurrent illness, consider check renal function

No point checking kidney function if patient requires immediate admission

Taking bloods needs to support management – both in terms of detection and severity

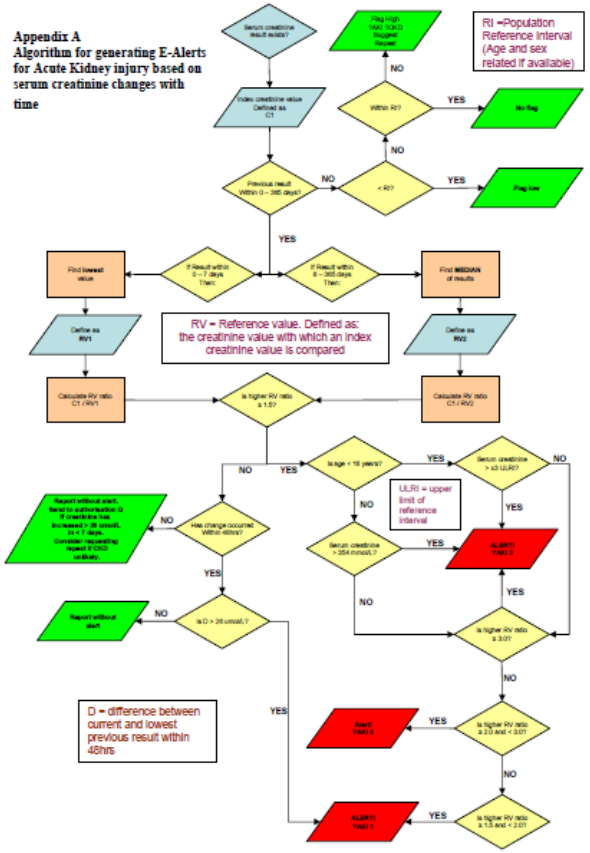
If take bloods, need timely results - Need systems in place to respond to blood results appropriately

Need to ensure coordination with Out Of Hours care – Hand over

How to manage a patient with AKI detected in primary care

Factors to consider:

- Is this definitely AKI?
- Is the patient acutely unwell?
- How severe is the AKI?
- Think about cause of AKI: does the patient have any red flag signs for urinary obstruction or intrinsic renal disease?



Approach to primary care management of patient with AKI

Avoid or correct ‘dehydration’

Medication review

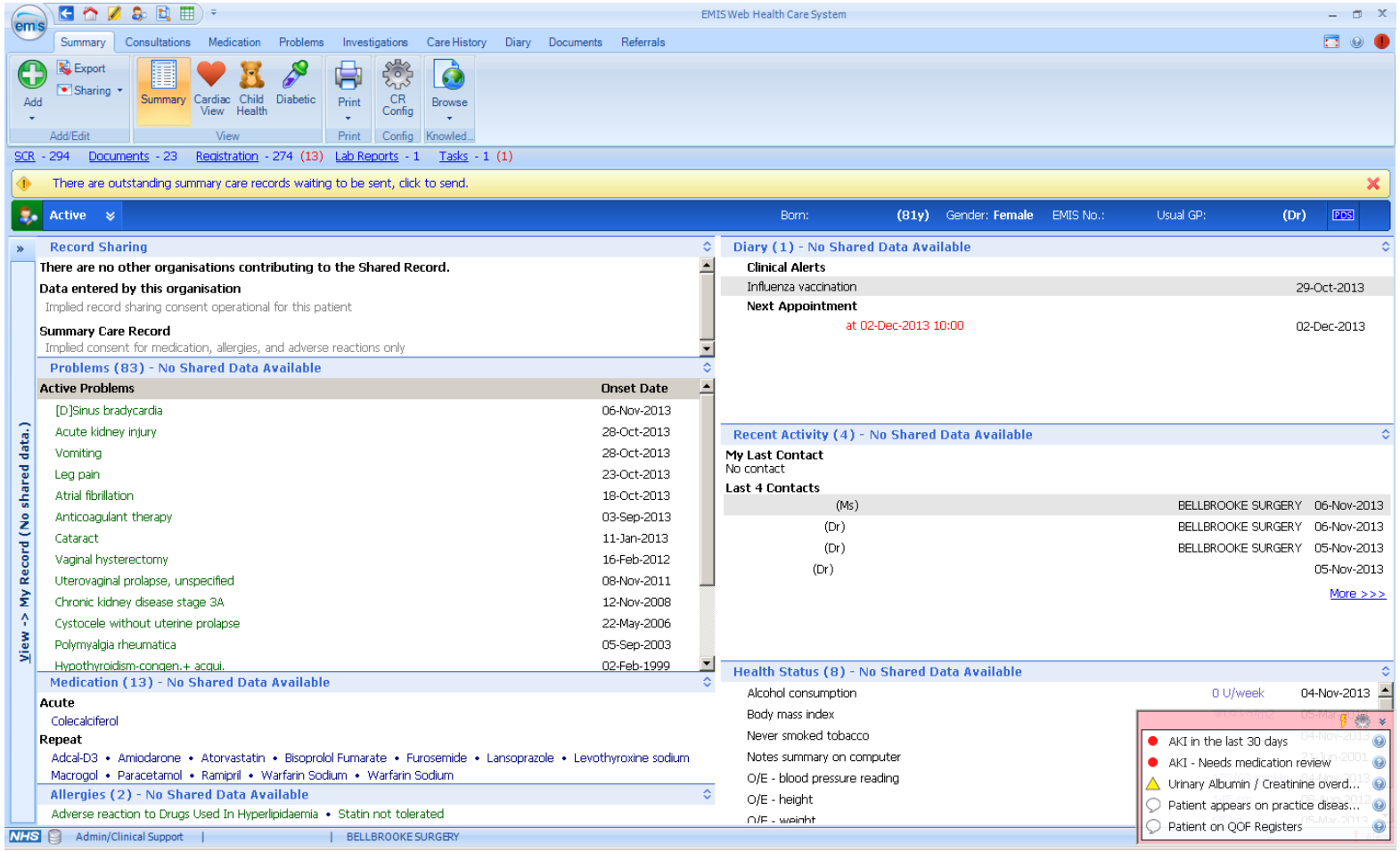
- Consider temporary suspension of ACEi/ARB +/- diuretics
- Consider temporary suspension of metformin (to avoid risk of lactic acidosis)
- Stop medications such as NSAIDs
- In the absence of an obvious cause of AKI, consider if any new drugs have been introduced that have a temporal relationship to the change in renal function: especially antibiotics and PPIs

– Early review and repeat U/Es: seek help from nephrology on call for patients who are getting worse despite the above

Doing the basics well: Post AKI care

- Review medications
  - Consider restart medications that have been stopped during an AKI episode – check kidney function 1/52 after reintroduction
  - If drug implicated in causing AKI (e.g. PPI leading to interstitial nephritis or NSAIDS) practice records should be updated to prevent receiving in the future
- Assess the degree of renal recovery
  - Consider repeat renal function in patients who have not returned to baseline
  - If evidence of new onset CKD, then recheck proteinuria and Creatinine at 3 months
  - Consider contact nephrology for advice
- Reduce risk of further episodes of AKI
  - Communication of risk and use of sick day rules
  - Integrate read code into templates: **Patient kidney card given**
- Coding the occurrence of an AKI episodes
  - (Read codes exist for AKI 1, AKI 2, AKI 3)

Doing the basics well:
AKI Register & e-alert



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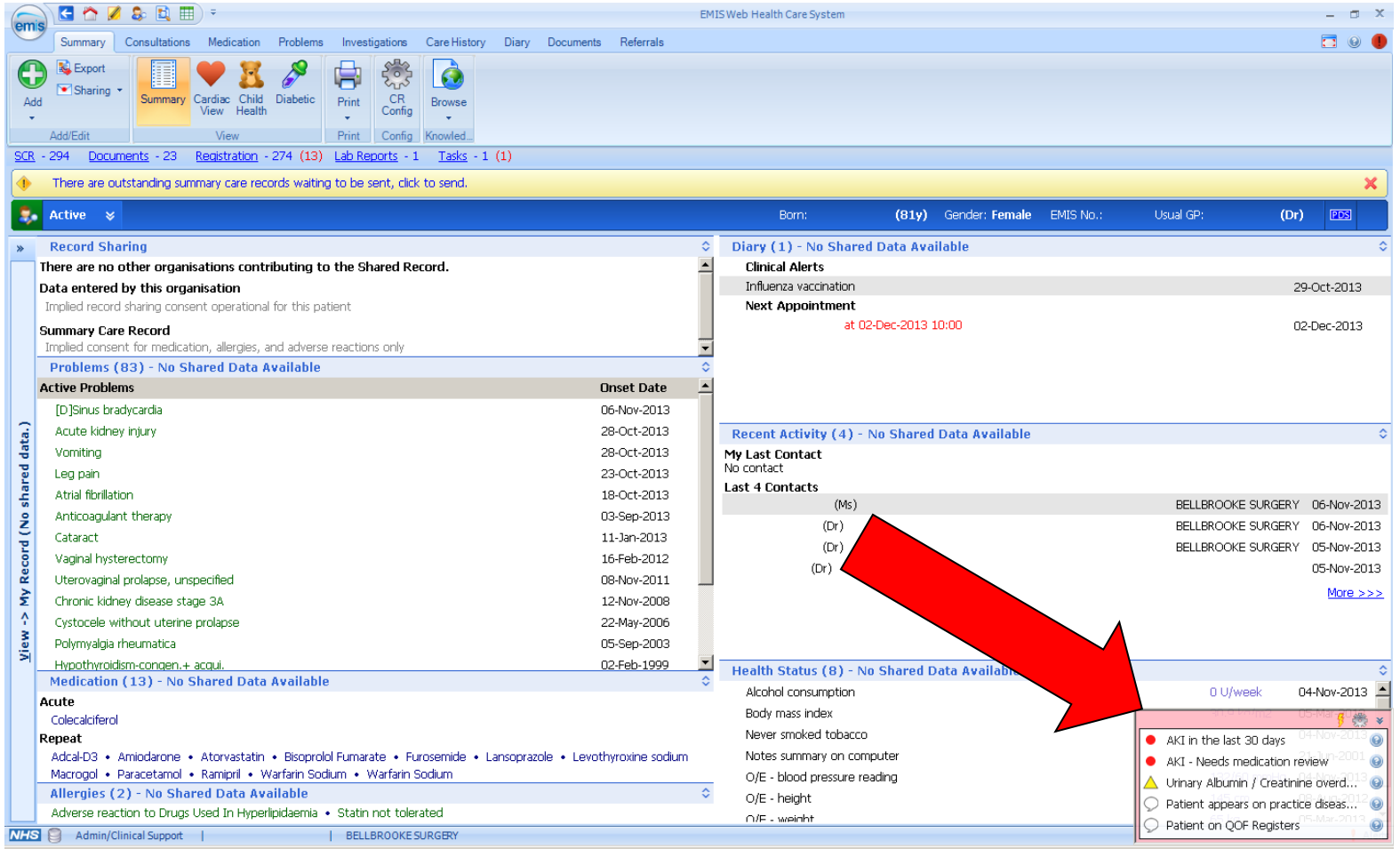

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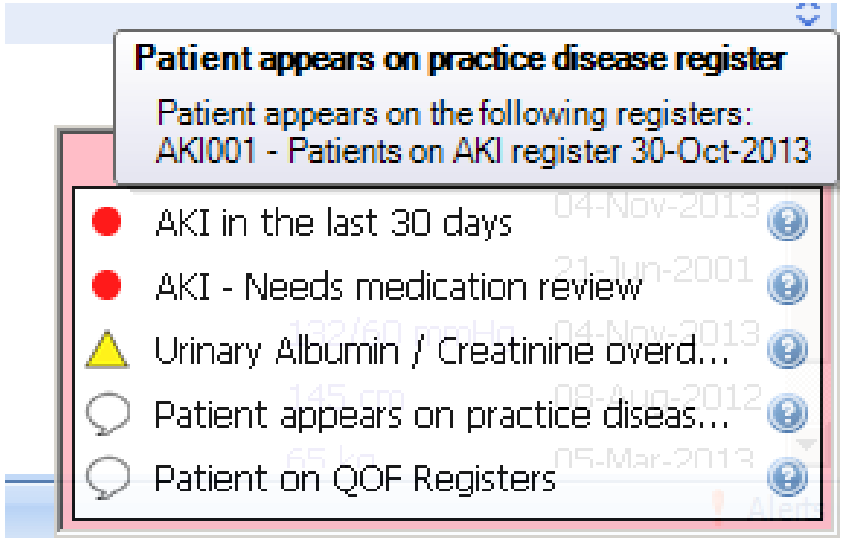
Doing the basics well
AKI Registers & e-alerts



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