

Improving the outcome of AKI across the world

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ISN



ISN Mission:

**Advancing the diagnosis, treatment
and prevention of kidney diseases**

in the developing and developed world





Adding Insult to Injury

**A review of the deaths of 675 AKI cases
in major UK hospitals
over 3 months in 2007**

Key findings



- Only 50% of AKI care considered good
- Poor assessment of risk factors
- Unacceptable delay in recognition of AKI in 43%
- 22 patients (3%) died with a primary diagnosis of post-admission AKI which was predictable and avoidable
- Complications: missed (13%), avoidable (17%) or badly managed (22%)

Conclusion



- Systematic failings in AKI care
- Failures in:
 - Recognition and management of AKI
 - Recognition and management of complications
 - Referral and support
- Failures in recognition of the acutely ill

HOW DOES AKI DIFFER IN THE DEVELOPING WORLD ?



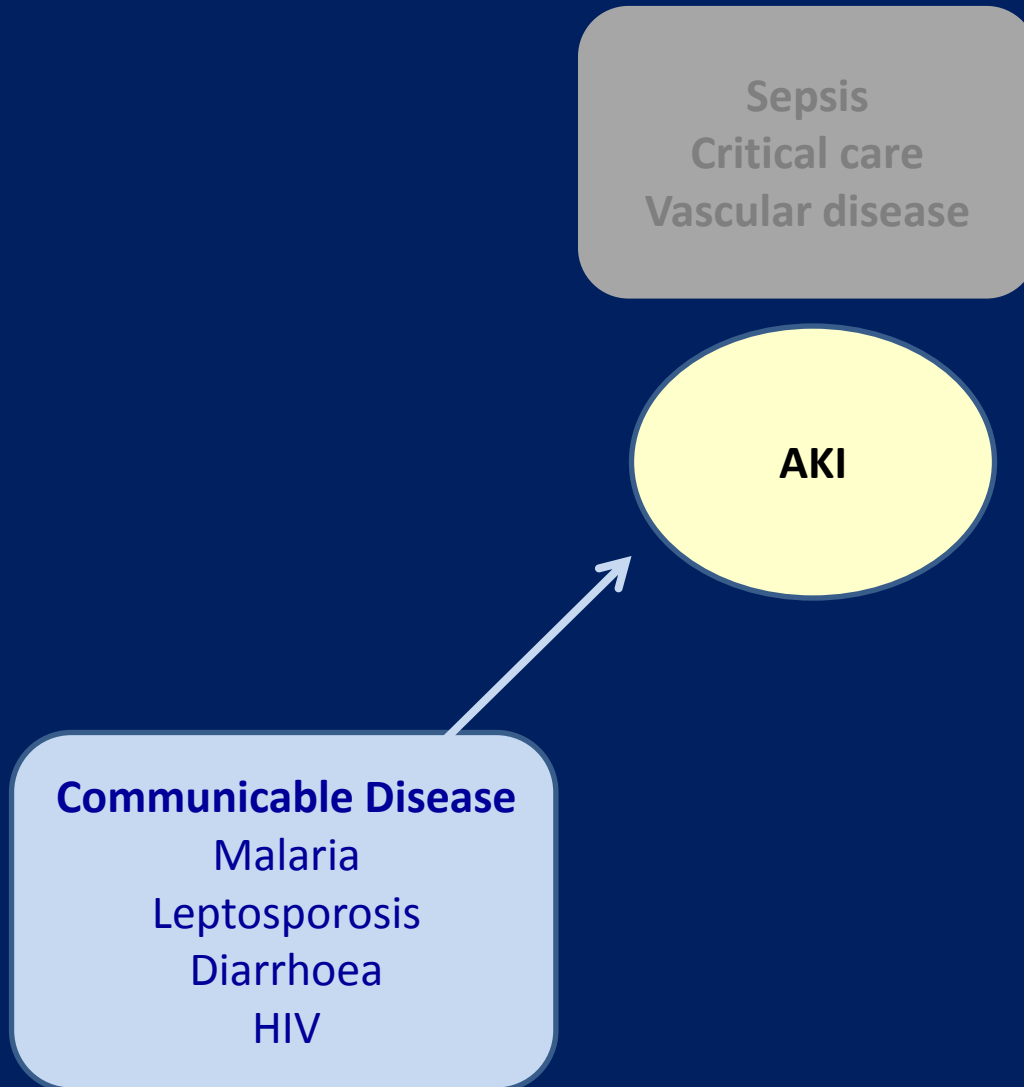
AKI

HOW DOES AKI DIFFER IN THE DEVELOPING WORLD ?

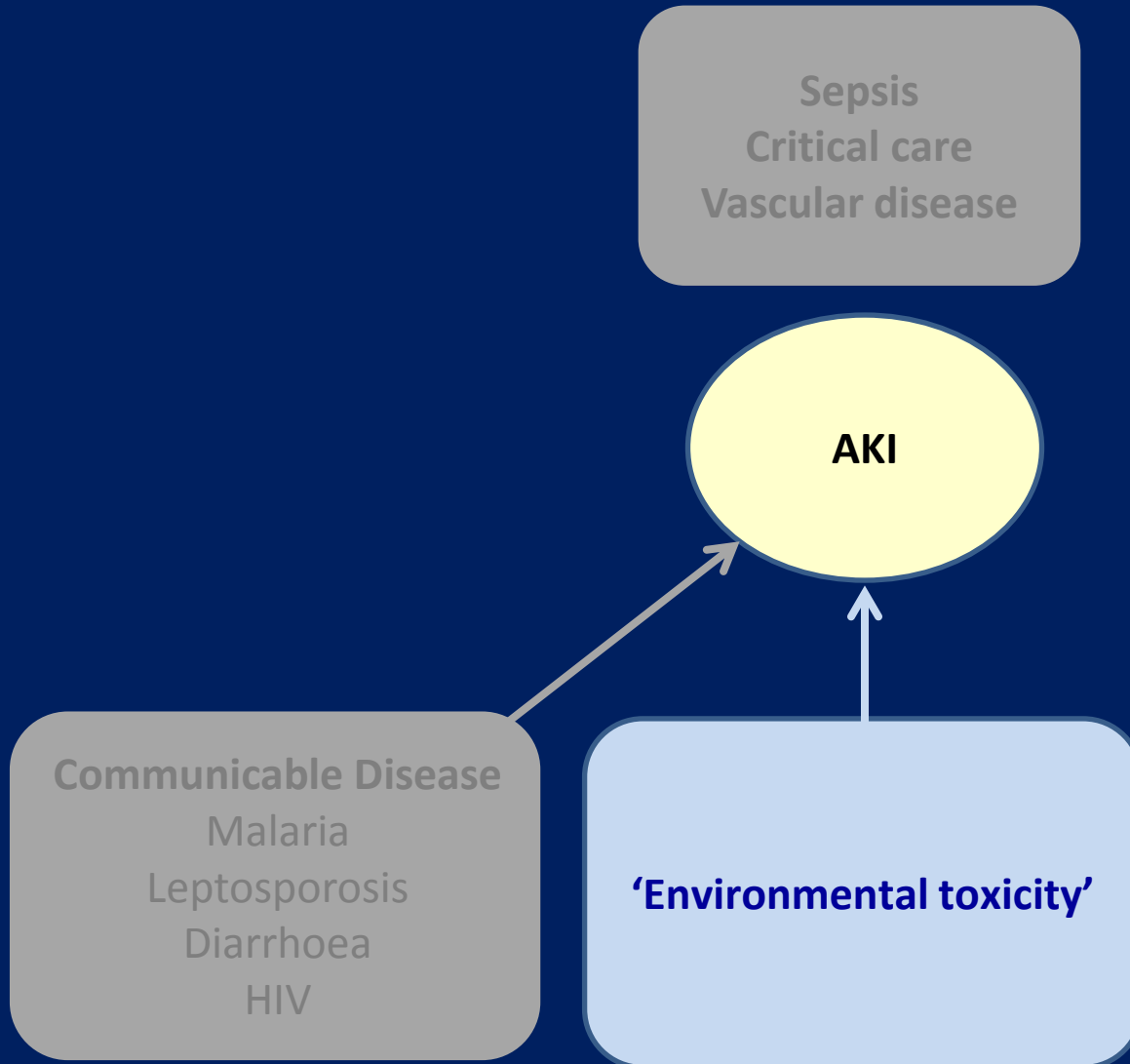
Sepsis
Critical care
Vascular disease

AKI

HOW DOES AKI DIFFER IN THE DEVELOPING WORLD ?



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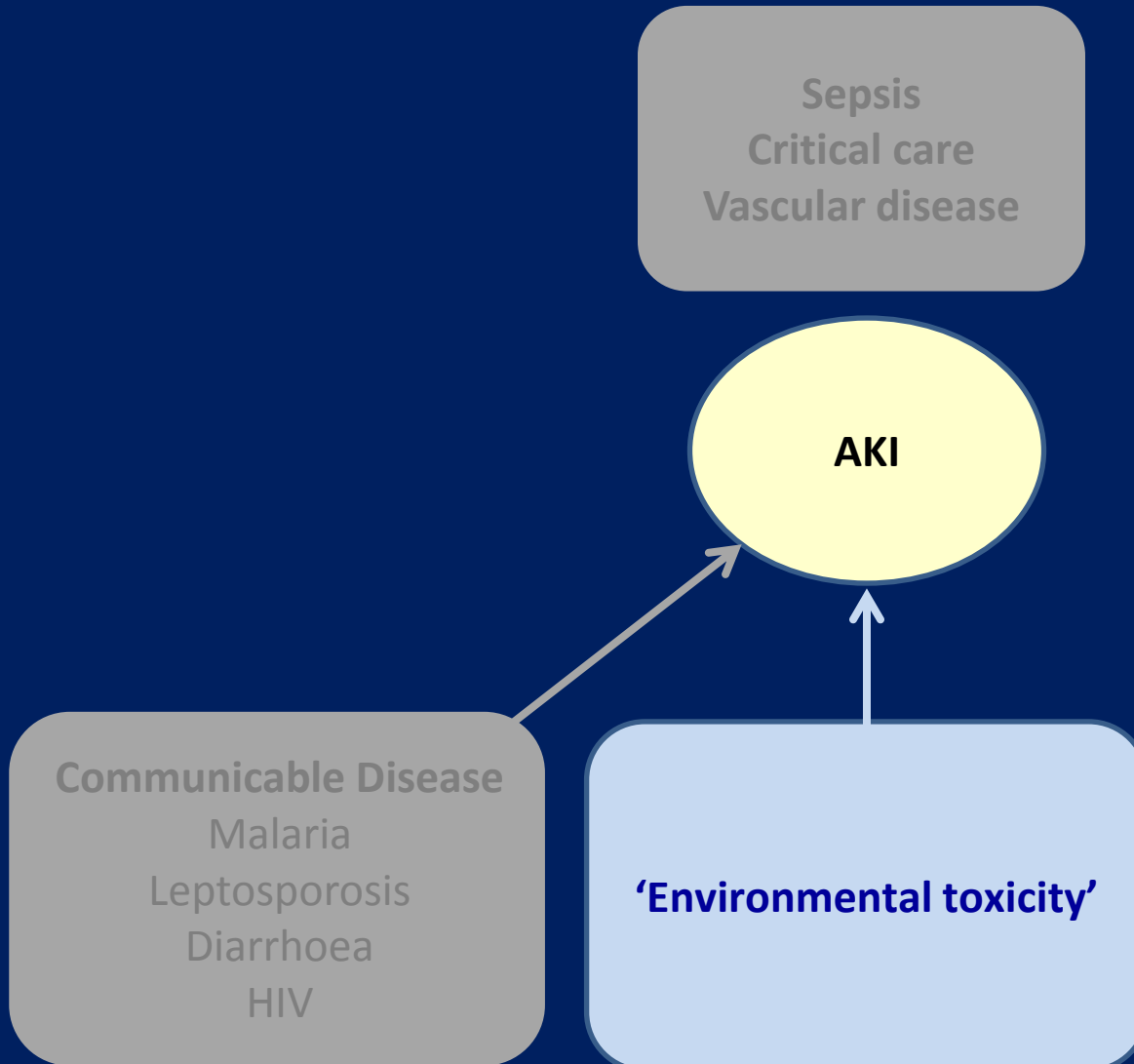




RENAL DISASTER RELIEF TASK FORCE



HOW DOES AKI DIFFER IN THE DEVELOPING WORLD ?





Photos by Dr Chen Au Peh



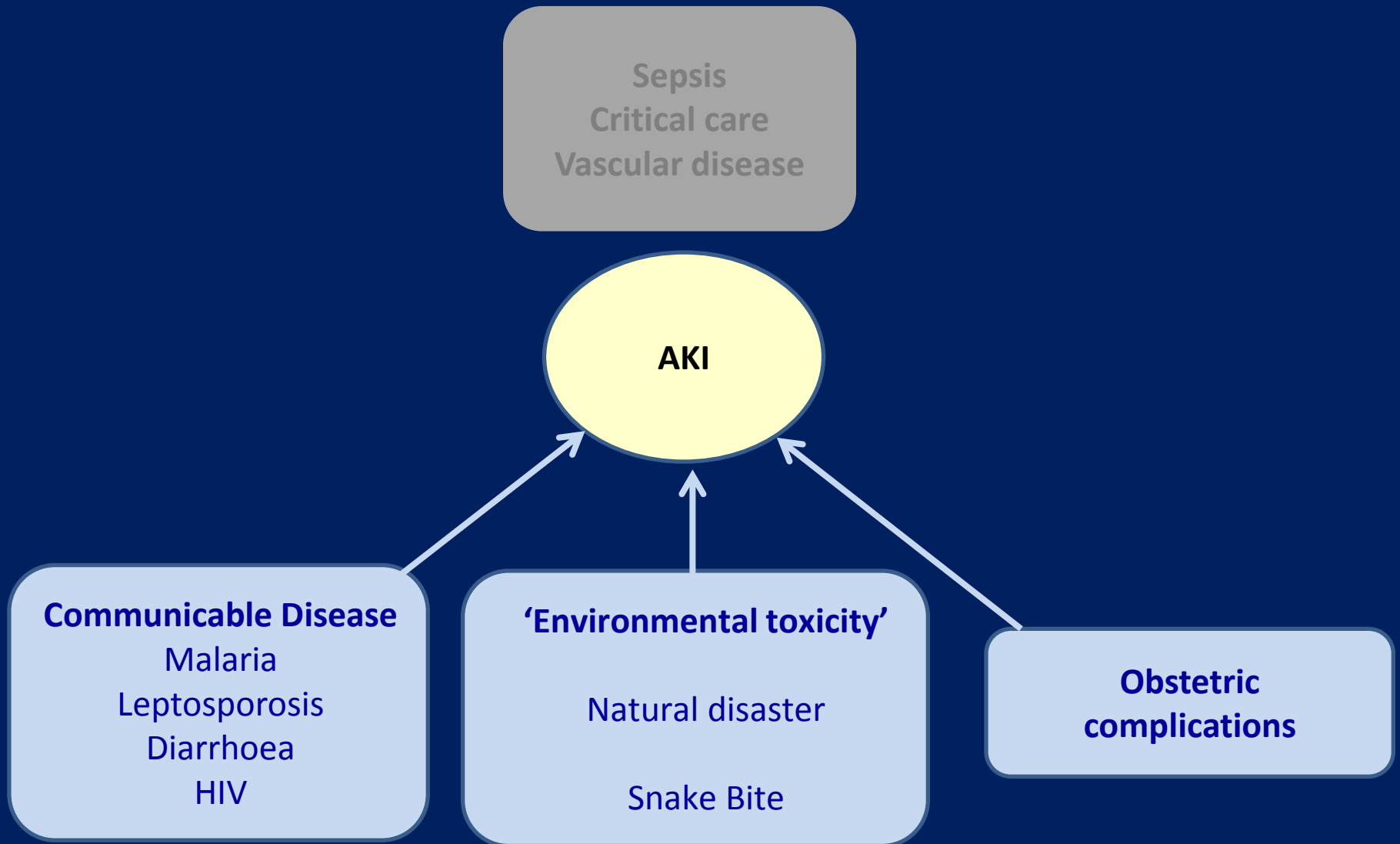
RUSSELL'S VIPER



Department of Nephrology, Yangon General Hospital

WARD ADMISSIONS	2013
AKI (SNAKE BITE)	200
AKI (Other)	132
CKD	585
Acute-on-CKD	21
Nephrotic syndrome	170
Post-strep GN	28
Lupus	96

HOW DOES AKI DIFFER IN THE DEVELOPING WORLD ?



PREVENTION OF AKI

Sepsis
Critical care
Vascular disease

AKI

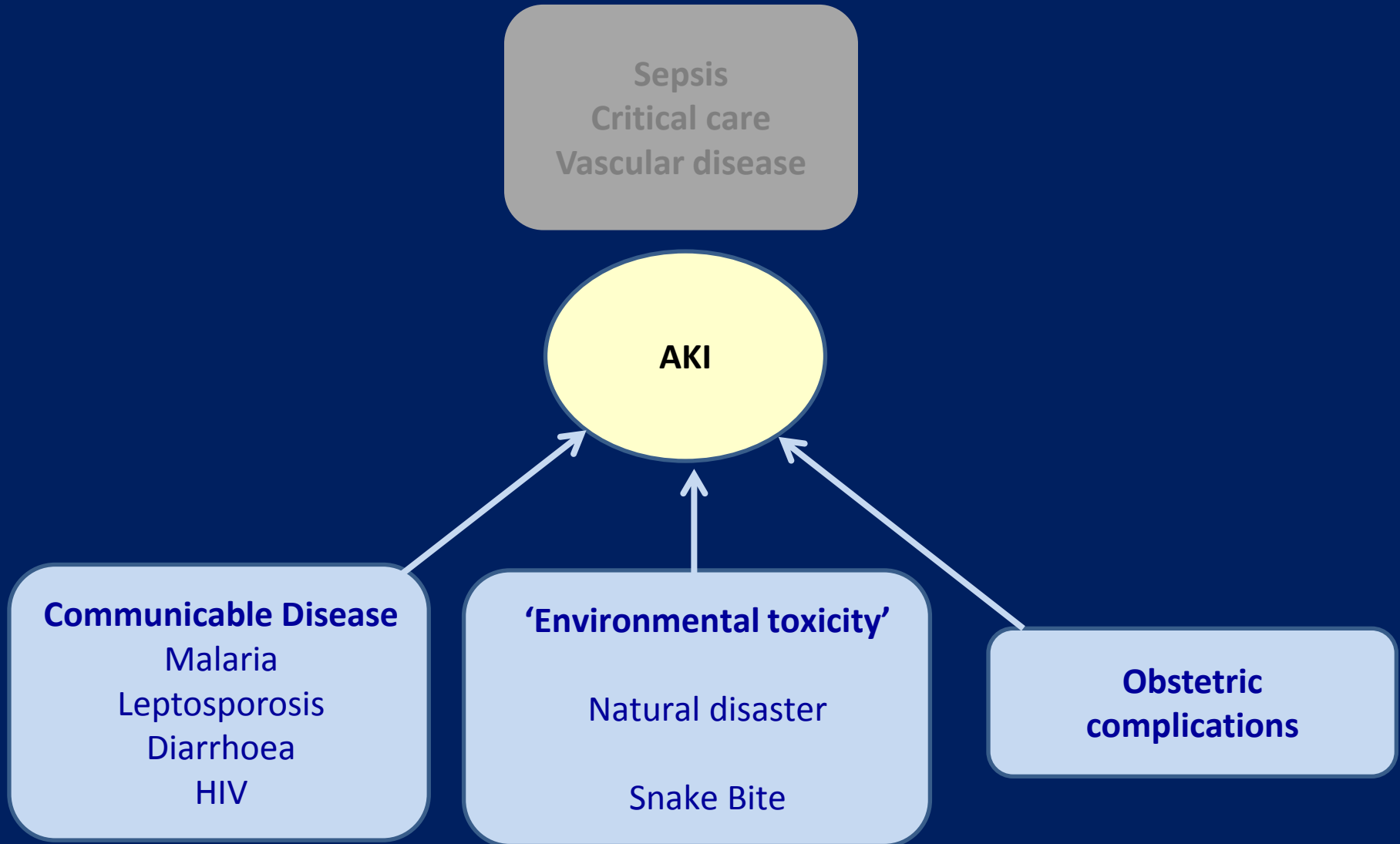
Communicable Disease

Malaria
Leptosporosis
Diarrhoea
HIV

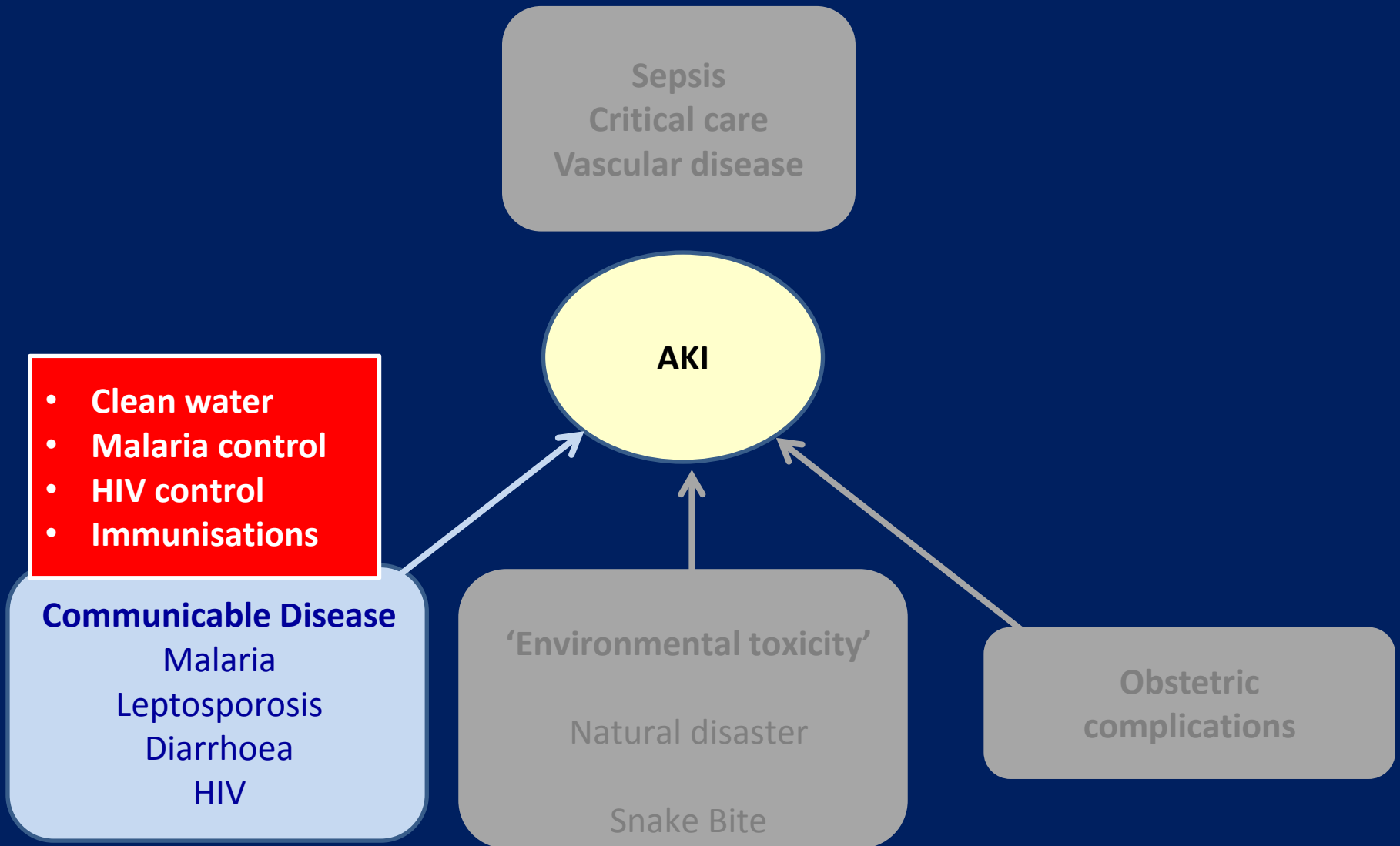
'Environmental toxicity'

Natural disaster
Snake Bite

Obstetric complications



PREVENTION OF AKI







Recommendation for the management of crush victims in mass disasters

Sever MS et al. NDT 2012; 27 Suppl 1: 1-67

PREVENTION OF AKI

Sepsis
Critical care
Vascular disease

AKI

- Clean water
- Malaria control
- HIV control
- Immunisations

Communicable Disease

Malaria
Leptosporosis
Diarrhoea
HIV

- Building quality
- Access to antivenom

'Environmental toxicity'

Natural disaster
Snake Bite

Obstetric
complications

PREVENTION OF AKI

Sepsis
Critical care
Vascular disease

AKI

- Clean water
- Malaria control
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Communicable Disease

Malaria
Leptosporosis
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HIV

- Building quality
- Access to antivenom

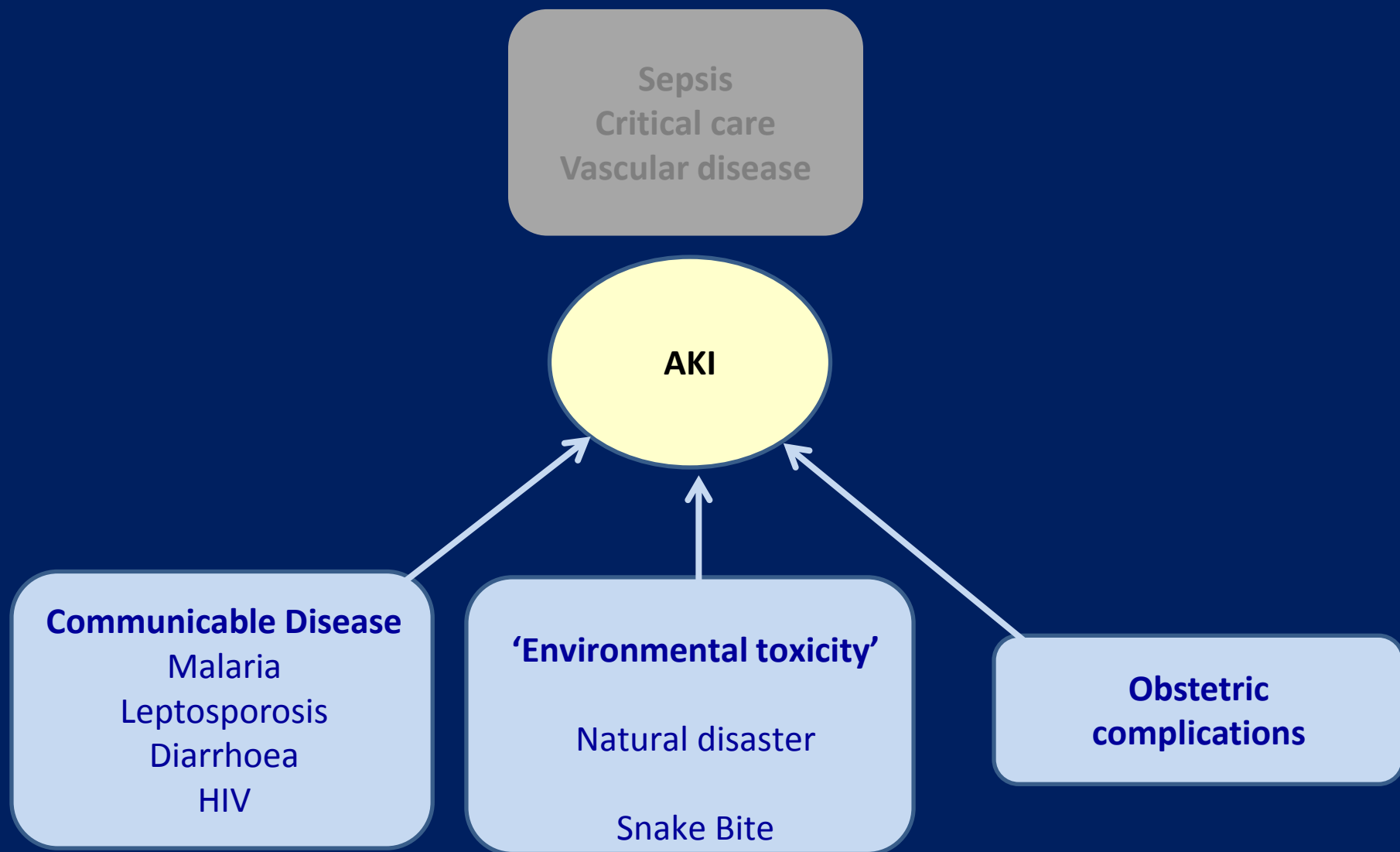
'Environmental toxicity'

Natural disaster
Snake Bite

- Maternity care

Obstetric complications

TREATMENT OF AKI IN LOW RESOURCE SETTINGS



TREATMENT OF AKI IN LOW RESOURCE SETTINGS

Treatment including acute PD

- saves young lives
- is cost effective
- gives major health gain

AKI

Communicable Disease

Malaria
Leptosporosis
Diarrhoea
HIV

'Environmental toxicity'

Natural disaster
Snake Bite

Obstetric
complications

Saving Young Lives in Africa and South East Asia (SYL)



SAVING YOUNG LIVES

Treating Acute Kidney Injury

.... in very low resource settings

SAVING YOUNG LIVES

Treating Severe AKI

.... with acute peritoneal dialysis

.... where there was no dialysis

SAVING YOUNG LIVES

Treating Severe AKI

.... with acute peritoneal dialysis

**PD is the only dialysis modality
that makes sense
in very low resource settings**

SAVING YOUNG LIVES

Treating Severe AKI

.... with acute peritoneal dialysis

**Of course dialysis is only one element in
.....prevention, identification, and
management of AKI**

OBJECTIONS TO ACUTE PD PROGRAMS

.... voiced by those who have never worked in a very low resource setting

'PD is a second rate treatment'

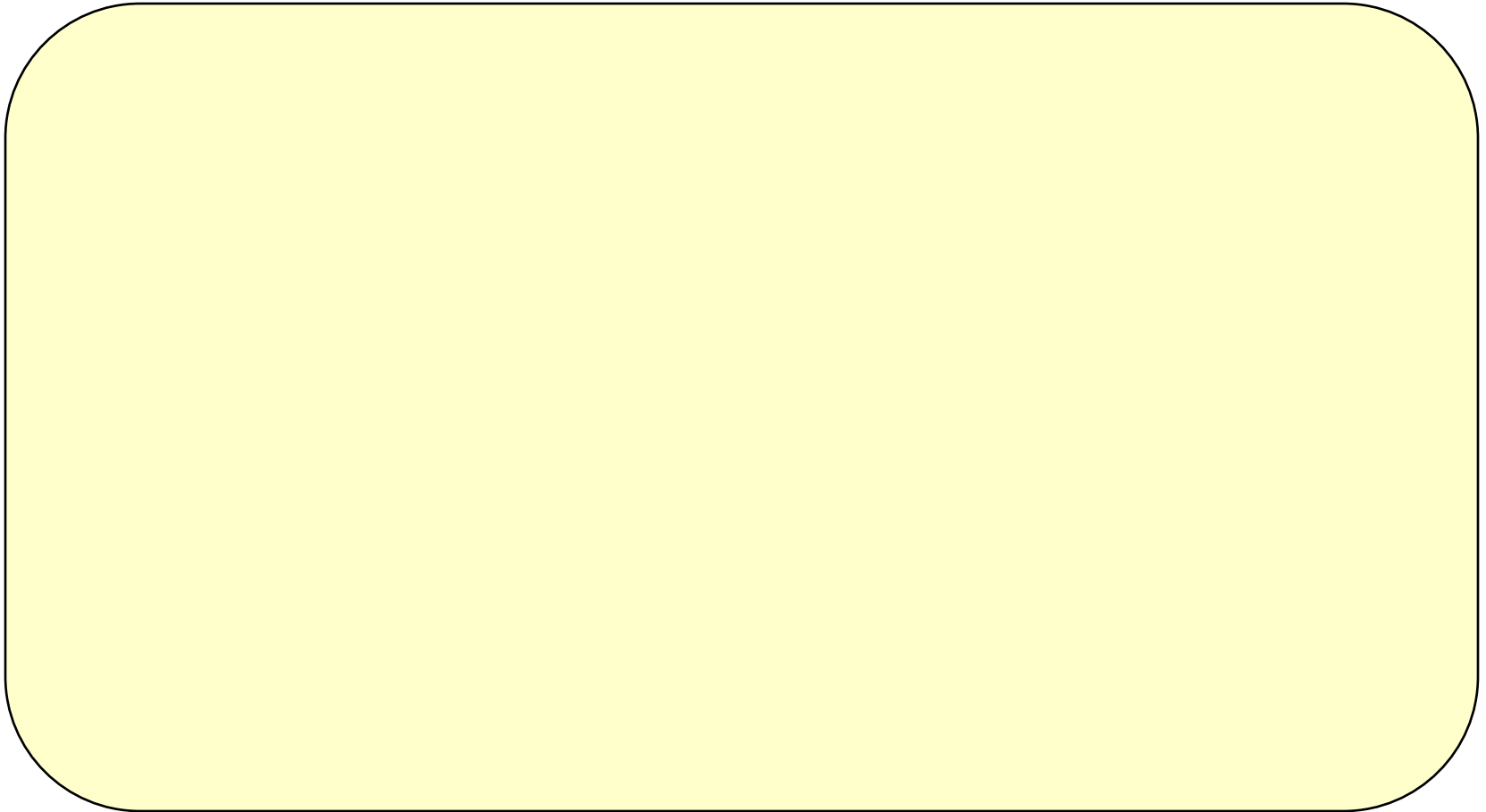
'It is unaffordable – we should focus in prevention'

'Suppose we do acute PD and the kidneys do not get better'

'Suppose we do acute PD and the kidneys only partly recover'

Acute PD in Moshi, Tanzania

Kilimanjaro Christian Medical Centre



Acute PD in Moshi, Tanzania

Kilimanjaro Christian Medical Centre

Supplies

Acute PD in Moshi, Tanzania

Kilimanjaro Christian Medical Centre

Supplies

Nurses

Physicians

African Practical Skills Workshop

Red Cross Hospital, Cape Town, South Africa

Mignon McCulloch
Alp Numanoglu



In 2012 & 2013
SYL has funded
~30 physicians & nurses
to attend the course



ISPD Guideline: Peritoneal Dialysis for Acute Kidney Injury

Cullis B *et al.* PD International & Kidney International 2014; 34: 494

Adult & Paediatric Guidelines

Global applicability – Optimal and Minimum Standards

-

ISPD Guideline: Peritoneal Dialysis for Acute Kidney Injury

Cullis B *et al.* PD International & Kidney International 2014 ; 34: 494

TECHNIQUES

- Catheter insertion Tenckhoff catheter inserted by a surgeon [1B] (**Optimal**).
- Cook or Tenckhoff catheter inserted at the bedside by a Seldinger technique[1B]
 - Improvised catheters if nothing else is available (**Minimum standard**)

ISPD Guideline: Peritoneal Dialysis for Acute Kidney Injury

Cullis B *et al.* PD International & Kidney International 2014 ; 34: 494

PD FLUIDS

Commercially prepared solutions should be used [1C] (**Optimal**)

However where resources do not permit this, then locally prepared fluids may be lifesaving [2D]

There is a high potential risk of contamination when preparing fluid and every effort should be made for this to be performed by pharmacists in a sterile environment not at the bedside. [1D]

(Minimum Standard)

ISPD Guideline: Peritoneal Dialysis for Acute Kidney Injury

Cullis B *et al.* PD International & Kidney International 2014 ; 34: 494

EXAMPLES OF LOCALLY PREPARED PD FLUIDS

1 L Ringer Lactate + 30mL 50% Dextrose

Na 127mmol/L, Lactate 27 mmol/L, Ca 1.36 mmol/L, K 3.8 mmol/L, Glucose 1.45%, Osmo 342

Fluid similar to lactate-based commercial PD solutions

1 L Plasmalyte + 30mL 50% Dextrose

Na 126mmol/L, HCO₃ 27 mmol/L, Mg 1.45 mmol/L, K 3.8 mmol/L, Glucose 1.45%, Osmo 346

Fluid very similar to bicarbonate-containing commercial PD solutions

Acute PD in Moshi, Tanzania

Kilimanjaro Christian Medical Centre

Supplies

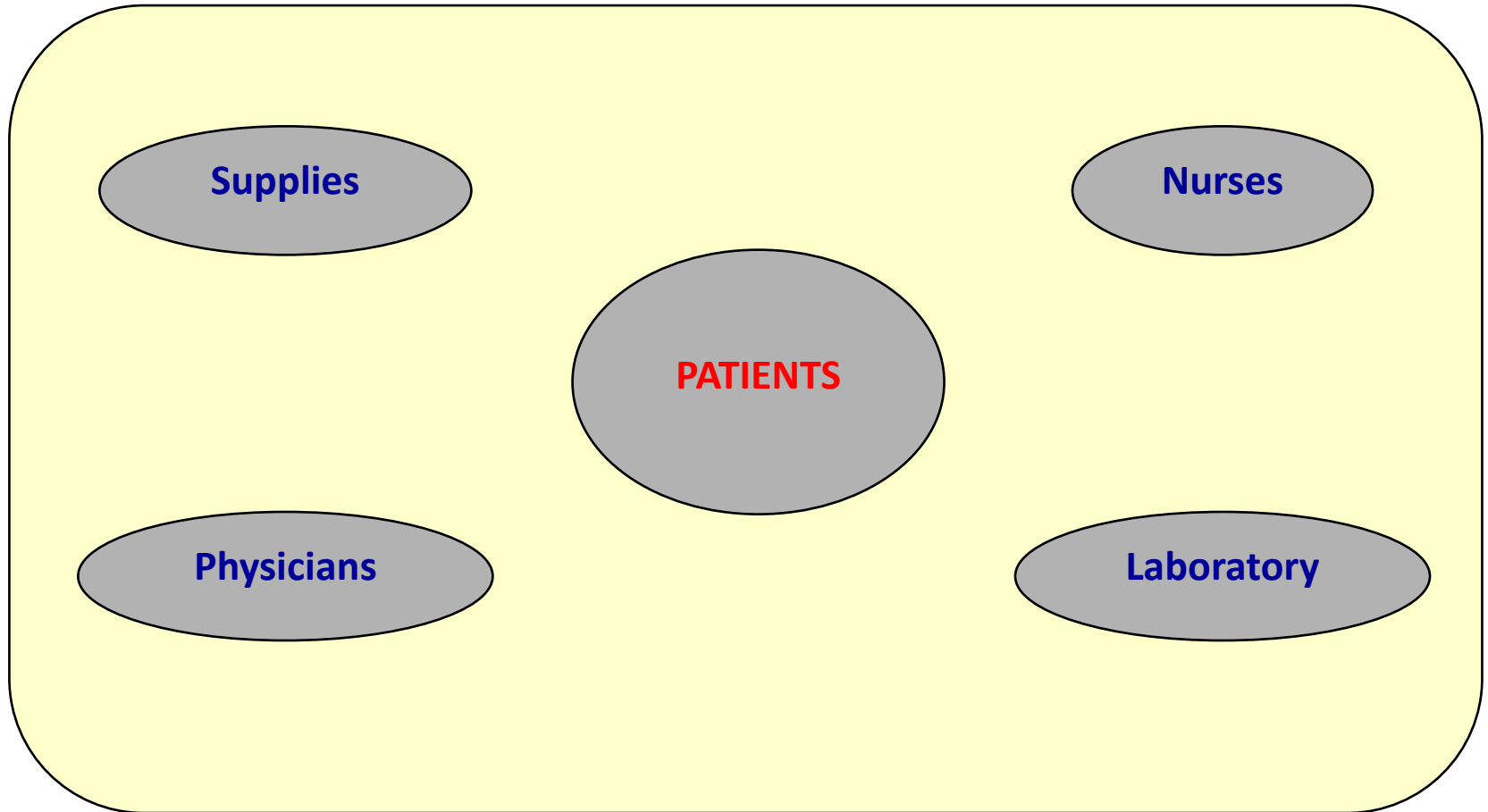
Nurses

Physicians

Laboratory

Acute PD in Moshi, Tanzania

Kilimanjaro Christian Medical Centre



Acute PD in Moshi, Tanzania

Kilimanjaro Christian Medical Centre

We know the need is huge....
.... but fewer patients than expected treated

Only 20 patients in 1st 2 years - 80% survival rate

Supplies

Nurses

PATIENTS

Physicians

Laboratory

'Saving Young Lives' Sites



Sites treating patients

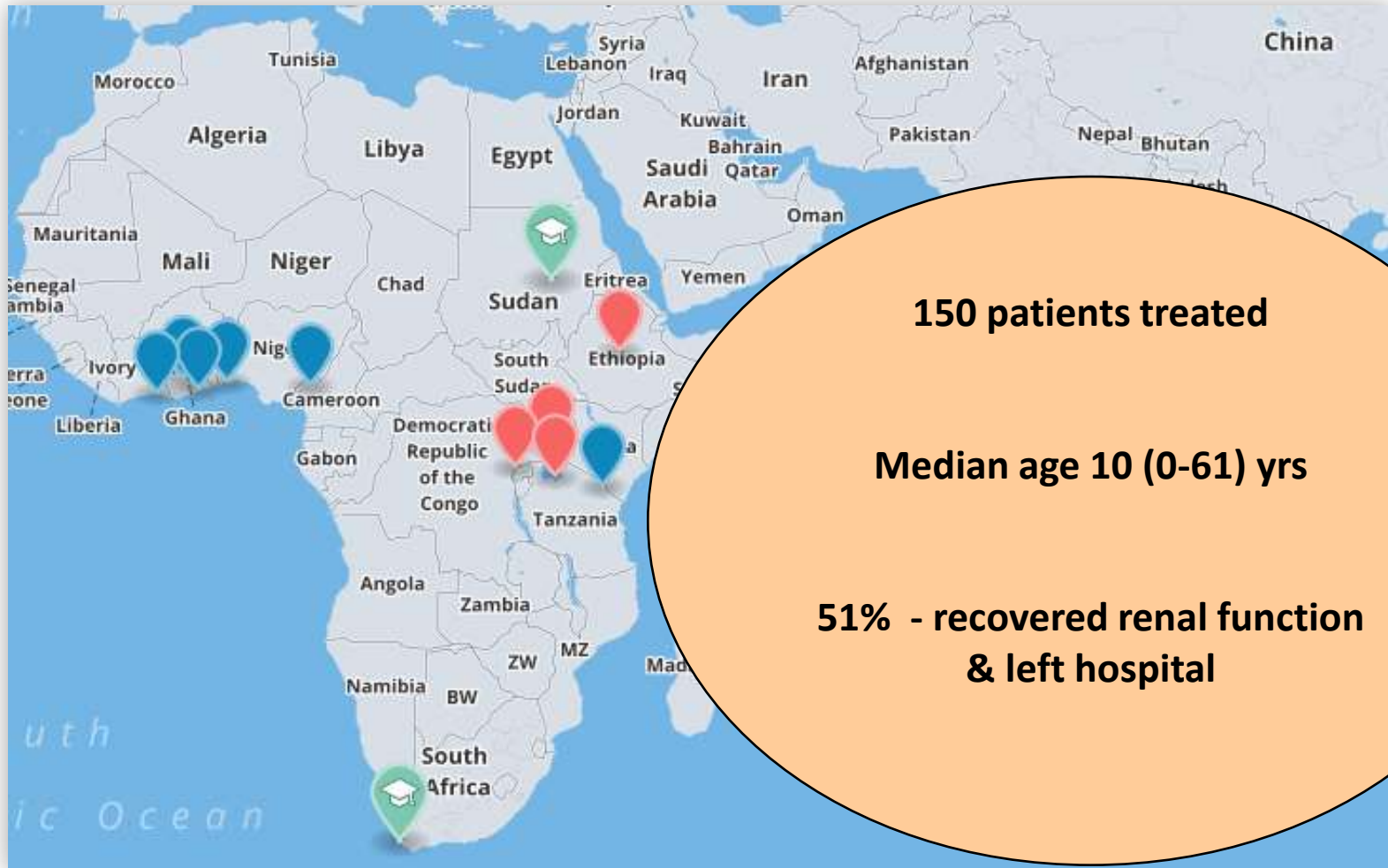


Sites selected but not treating yet



Training centres

'Saving Young Lives' Sites



Sites treating patients



Sites selected but not treating yet



Training centres

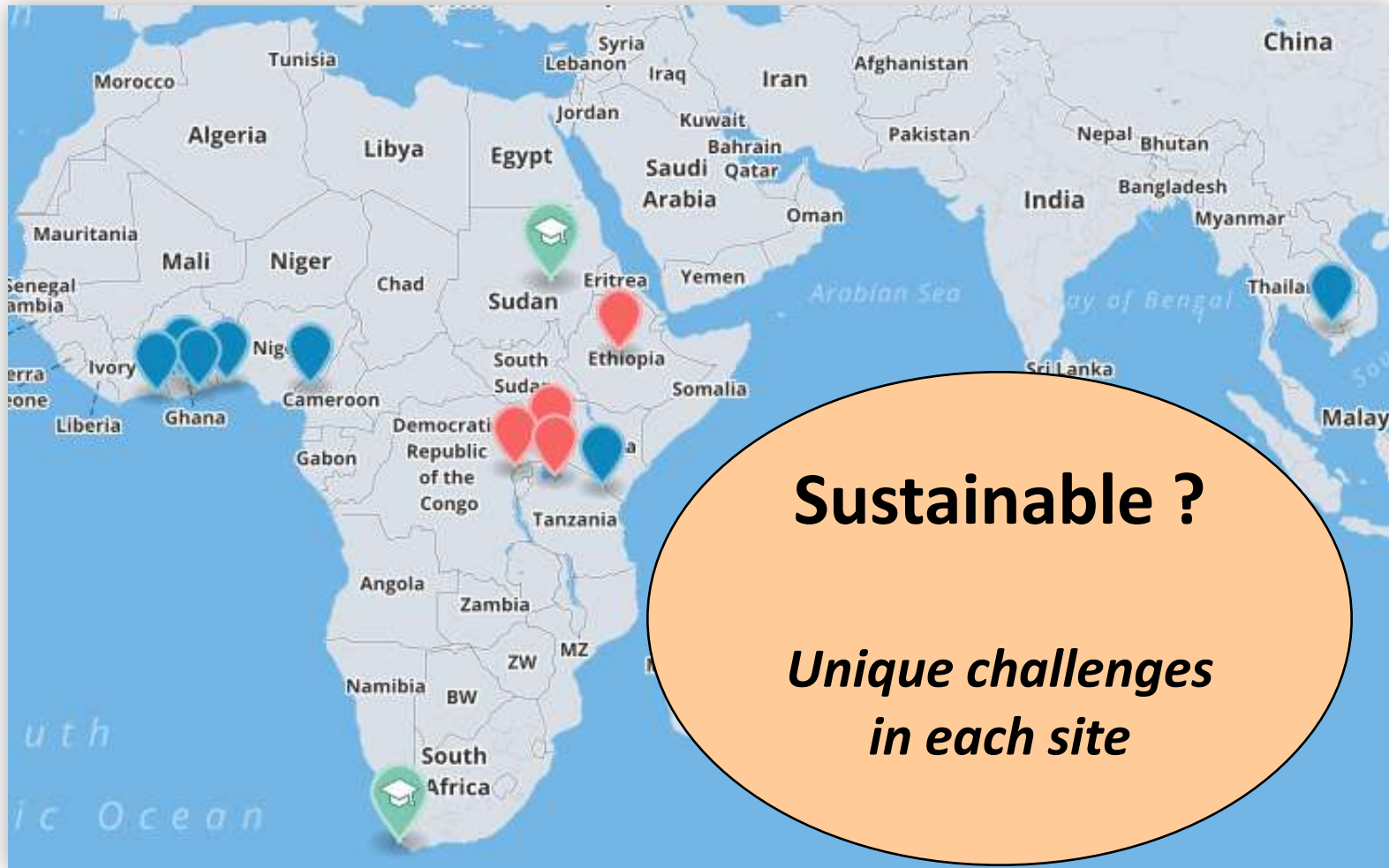
Saving Young Lives **in Africa and South East Asia (SYL)**

Of course

The need - the solutions

... not unique to Africa or South East Asia

'Saving Young Lives' Sites



Sites treating patients



Sites selected but not treating yet



Training centres

SAVING YOUNG LIVES

CHALLENGES

Understanding healthcare process inside & outside hospital

|

Understanding cultural issues which delay change

Understanding what resources are available

SAVING YOUNG LIVES

CHALLENGES

Understanding healthcare process inside & outside hospital

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SAVING YOUNG LIVES

CHALLENGES

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Understanding cultural issues which delay change

Understanding what resources are available

0 by 25

AN ISN HUMAN RIGHTS INITIATIVE

**Nobody should die of preventable
and treatable Acute Kidney Injury
(AKI) by 2025!**



www.0by25.org

Advancing Nephrology Around the World

0 by 25

Zero preventable
deaths from AKI
by 2025



Eliminate preventable deaths
from AKI worldwide by 2025

EVIDENCE

AWARENESS

INTERVENTION





Eliminate preventable deaths from AKI worldwide by 2025

1. Collate existing knowledge of the epidemiology of AKI

Analysis by IHME, Seattle, USA

THE LANCET
December 15, 2012 – January 4, 2013
www.thelancet.com

The Global Burden of Disease Study 2010

The cover of The Lancet journal for the issue dated December 15, 2012, to January 4, 2013. The main title is 'THE LANCET'. Below the title, it says 'December 15, 2012 – January 4, 2013' and 'www.thelancet.com'. The featured article is 'The Global Burden of Disease Study 2010'. The cover image shows several hands of different skin tones reaching up to touch a globe of the Earth.

ISN - partner

... did *not* include AKI





Eliminate preventable deaths
from AKI worldwide by 2025

2. Generate new data about global AKI

GLOBAL SNAPSHOT 2014

324 physicians from 72 countries

Cross-sectional data on adults & children with AKI under their care

Data on risk, etiological factors and management

Outcomes at 7 days





LOCATION OF PHYSICIANS CONTRIBUTING TO AKI GLOBAL SNAPSHOT 2014





LOCATION OF PHYSICIANS CONTRIBUTING TO AKI GLOBAL SNAPSHOT 2014



Total	4018
High income	1260
Upper middle income	1605
Lower middle income	958
Low income	195





Eliminate preventable deaths
from AKI worldwide by 2025

Increase our knowledge about global AKI



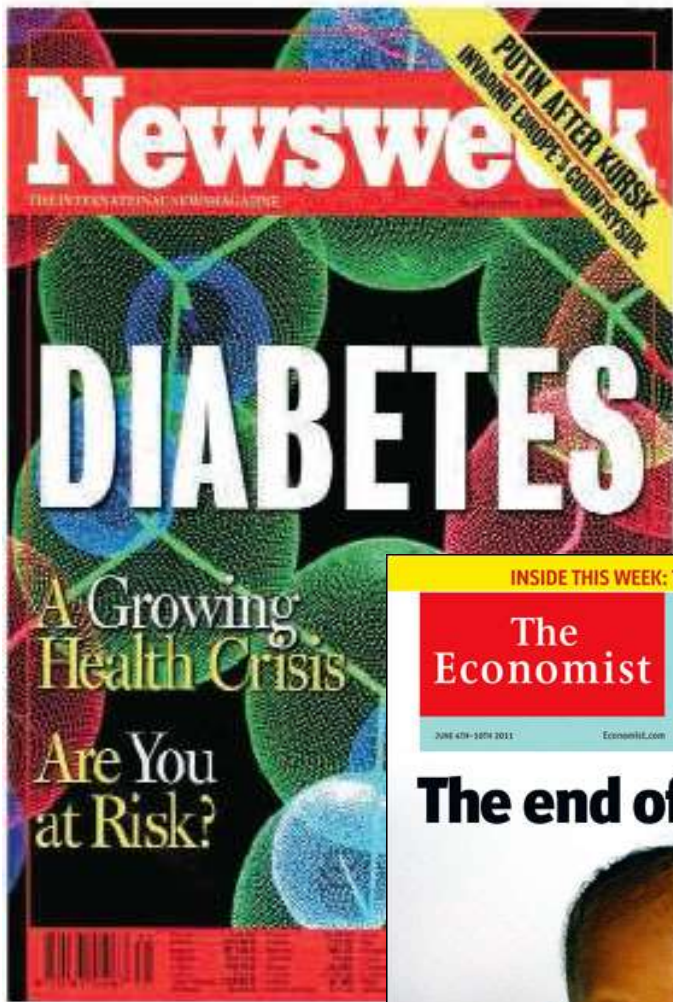


**Eliminate preventable deaths
from AKI worldwide by 2025**

Increase our knowledge about global AKI

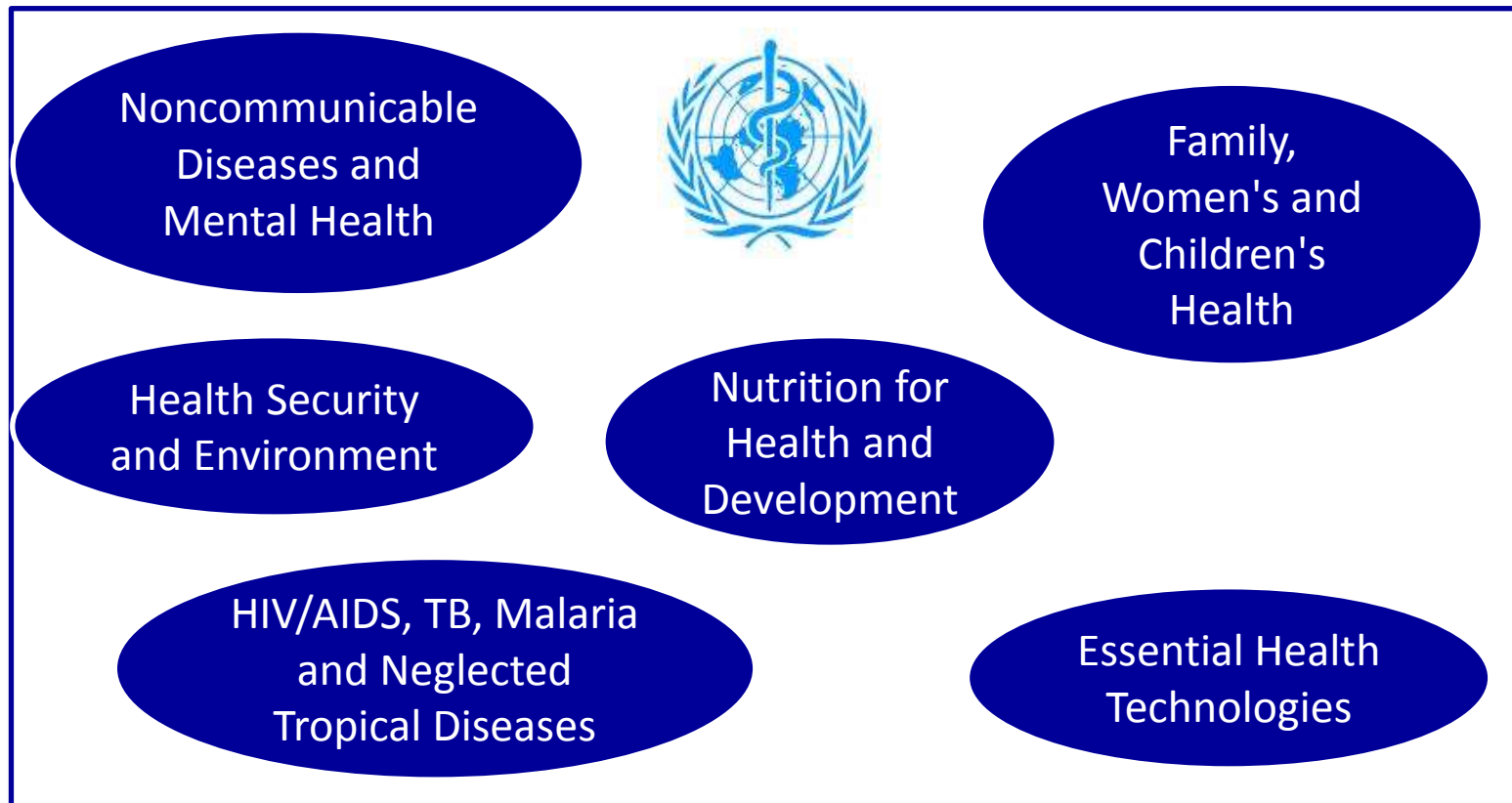
Increase awareness of AKI





Positioning kidney disease at WHO

ACUTE KIDNEY INJURY



Government Approaches to Health Issues

Some generalisations

Governments are concerned about common problems

Governments are concerned about high cost problems

.... fear of kidney disease

Governments want hard epidemiological data

... in their own population

Governments want evidence of success

... in their own population

Governments want hard financial data

... in their own population

ADVOCACY with LMIC GOVERNMENTS

The word 'dialysis' provokes anxiety

They fear chronic dialysis



A DIFFERENT PARADIGM

AKI as an acute reversible illness

Analogy with malaria or pneumonia

Treatment is affordable



**Eliminate preventable deaths
from AKI worldwide by 2025**

Increase our knowledge about global AKI

Increase awareness of AKI

Develop globally applicable interventions for AKI

Prompt detection of reversible AKI

Access to therapy including dialysis

Education and training for healthcare workers





Eliminate preventable deaths from AKI worldwide by 2025

Develop globally applicable interventions for AKI

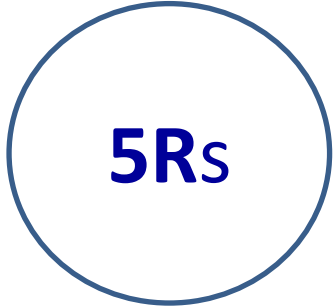
RISK

RECOGNITION

RESPONSE

RENAL SUPPORT

REHABILITATION





Eliminate preventable deaths from AKI worldwide by 2025

Develop globally applicable interventions for AKI

RISK

RECOGNITION

RESPONSE

RENAL SUPPORT

REHABILITATION

'SAVING YOUNGLIVES'

5Rs





Eliminate preventable deaths from AKI worldwide by 2025

Develop globally applicable interventions for AKI

RISK

RECOGNITION

**VERY LOW
RESOURCE
SETTINGS**

RESPONSE

RENAL SUPPORT

HEALTH CENTRES
Non-physician health workers

DISTRICT HOSPITALS

REFERRAL HOSPITALS - Dialysis

REHABILITATION





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RISK

RECOGNITION

**VERY LOW
RESOURCE
SETTINGS**

RESPONSE

RENAL SUPPORT

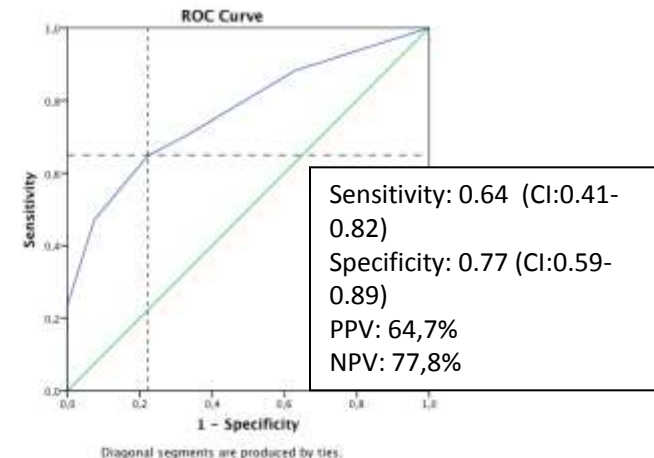
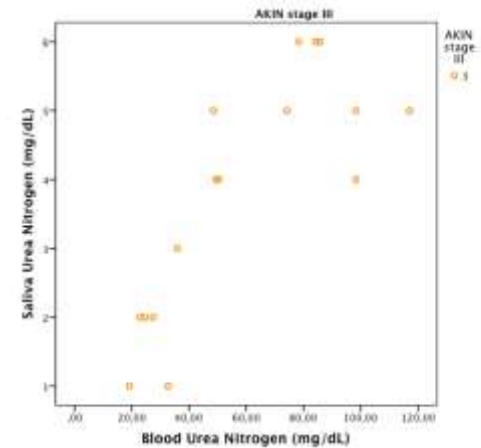
EDUCATION & TRAINING
CONSISTENT CARE PATHWAYS
POINT OF CARE TESTING

REHABILITATION



“Spit it out to check your kidneys”

Saliva urea nitrogen dipstick as a new bedside diagnostic tool for Acute Kidney Injury



Silva VC, Vieira A, Raimann JG, Carter M,
Callegari J, Levin NW, Kotanko P, Pecoits-Filho R
Brazil & USA



Eliminate preventable deaths from AKI worldwide by 2025

Increase our knowledge about global AKI

PARTNERSHIP

Develop globally applicable interventions for AKI



AKI AROUND THE WORLD

We are making progress.....

but there is still much to do



AKI AROUND THE WORLD

We are making progress.....

0by25

HOME

ABOUT+

GET INVOLVED+

LUISA STRANI

LOGOUT

0by25

Zero preventable
deaths from AKI
by 2025



Advancing Nephrology Around the World

