

Use of Antibiotics in Katherine Hospital

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Overview

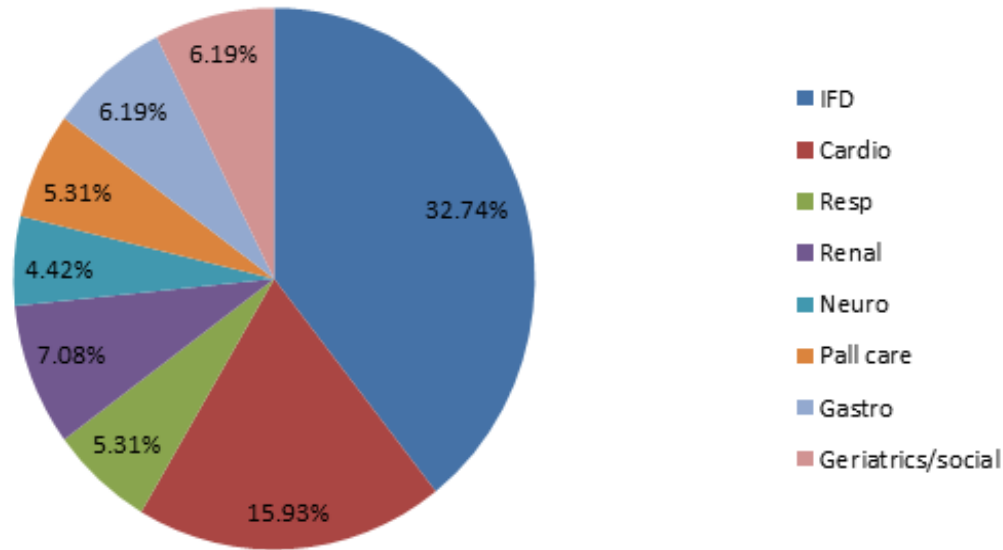
- Infection in Katherine Hospital
- Current Guidelines for Severe Sepsis
- Antimicrobial Resistance Globally & Locally
- Infection Control Strategies in Katherine Hospital
- Antimicrobial Stewardship TEHS
- Antimicrobial Stewardship Locally
- Challenges and Changes

Katherine Hospital Admissions 2016/17

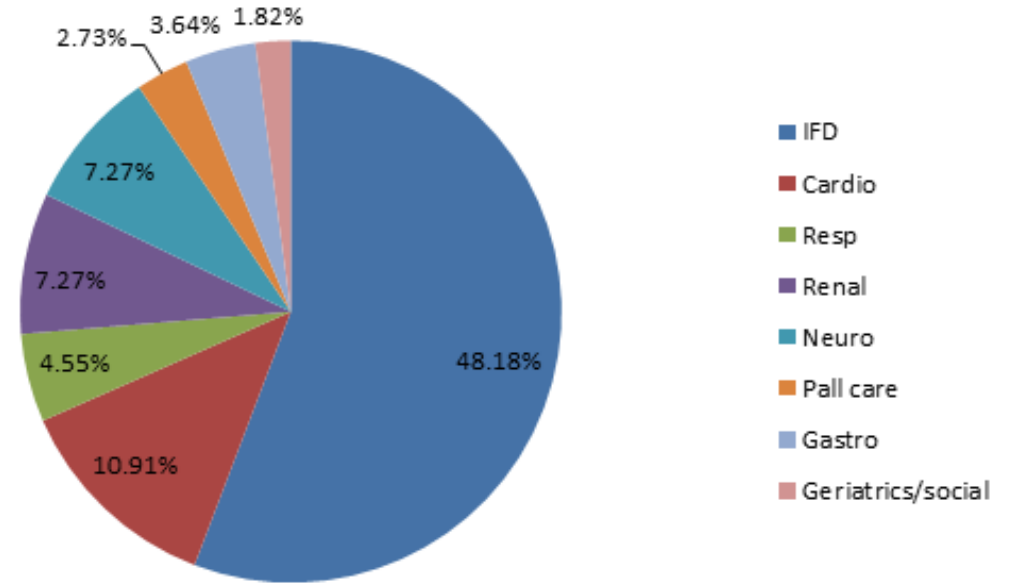
	DRG May 16/17			
	COPD - minor	Resp	61	4.3%
	Chest pain	Cardio	55	3.8%
→	Respiratory infn (minor)	IFD	55	3.8%
→	Respiratory infn (major)	IFD	48	3.3%
	COPD - major	Resp	71	4.9%
	Injuries - minor		32	2.2%
	Renal/GU signs/sx	Renal	31	2.2%
→	Renal/GU infection	IFD	28	2.0%
→	Cellulitis (minor)	IFD	28	2.0%
→	Cellulitis (major)	IFD	27	1.9%
	Seizures (minor)	Neuro	26	1.8%
	Other		25	1.7%
	Other respiratory	Resp	24	1.7%
	CCF (minor)	Cardio	23	1.6%
	RBC disorder (major)	Haem	19	1.3%
	Arrhythmia	Cardio	19	1.3%
	Alcohol Tx		18	1.3%
	Circulation disorder	Cardio	17	1.2%
	Seizures (major)	Neuro	17	1.2%
			1435	

Katherine Hospital Presentations Wet vs Dry

DRY Season Medical Issues



WET Season Medical Issues



Courtesy of Dr Pip Tallis

Antibiotic Guidance in Top End

- Appropriate to local pathogens and resistance patterns
- Severe Sepsis
 - Advises regarding recognition of sepsis
 - Takes into account Wet and Dry Season
 - MRSA

Resistance to antibiotics now 'ticking timebomb'



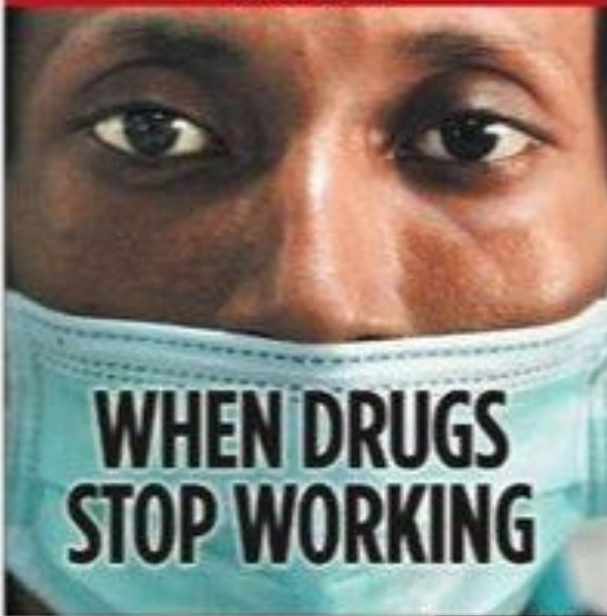
■ 'Catastrophic threat' warning from Government's Chief Medical Officer
■ Even minor surgery may lead to death!
■ Call for tighter rein on GP prescriptions

New wave of 'superbugs' pose dire threat, says medical chief

Warning over rising death toll as antibiotics fail to tackle infections

New superbug found in two patients here

FIRST OF TWO PARTS



WHEN DRUGS STOP WORKING

The most lethal infectious diseases on the planet are mutating at an alarming rate worldwide. The reason: Overuse and misuse of the drugs that were supposed to save us.

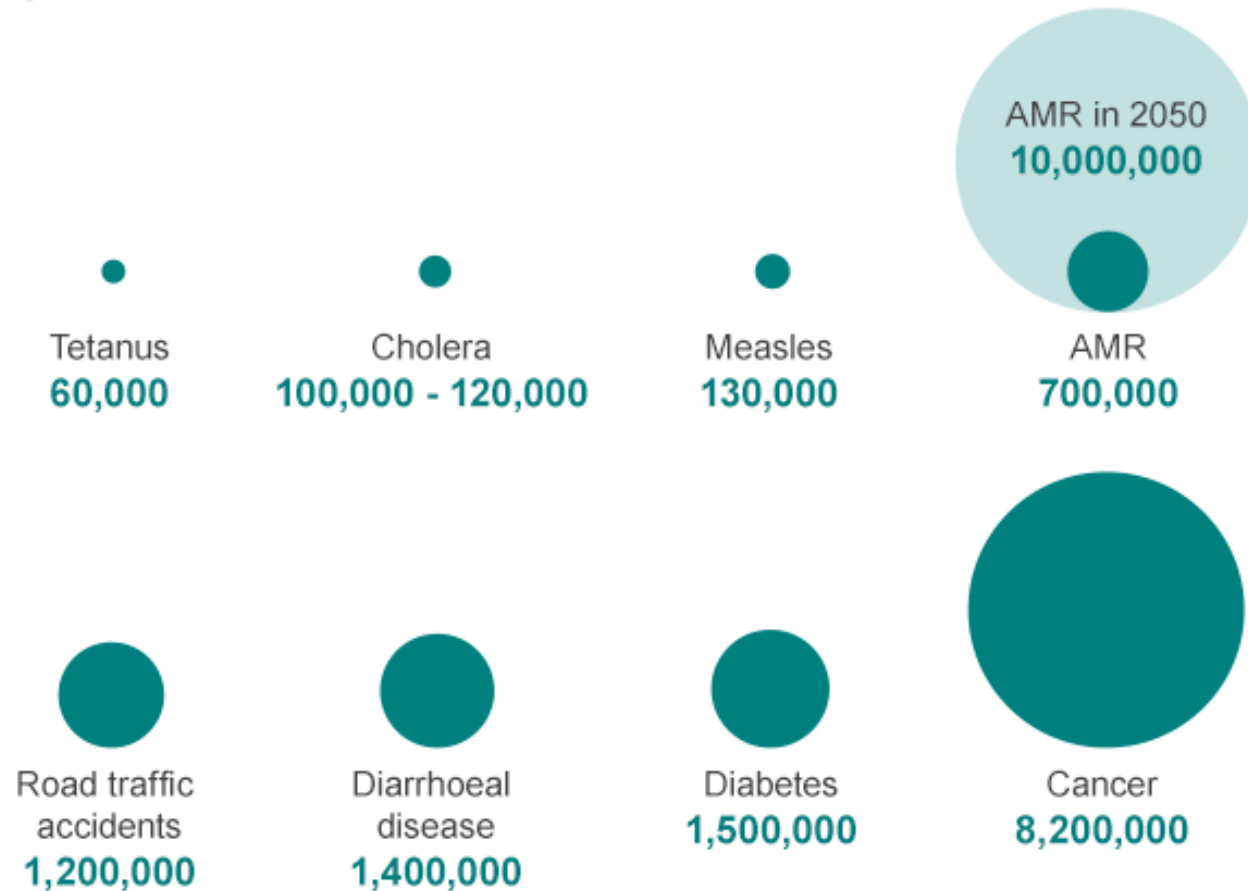
BY ANNE HUGHES AND MARTHA REMICK
Illustration by [illegible]

LANTANA — It started with a cough, an asthma flare-up, given, aggressive, especially drug-resistant forms of tuberculosis. The Associated Press learned of his case, which would mean his own health could be at risk.

A TIME SCENE: Tuberculosis and HIV patient Hanchuan Hanchuan, 35, looks out from the isolation ward in Thailand. He has learned to fight back against drugs, making his a tougher climb for which his medications exist.

Antimicrobial Resistance - Globally

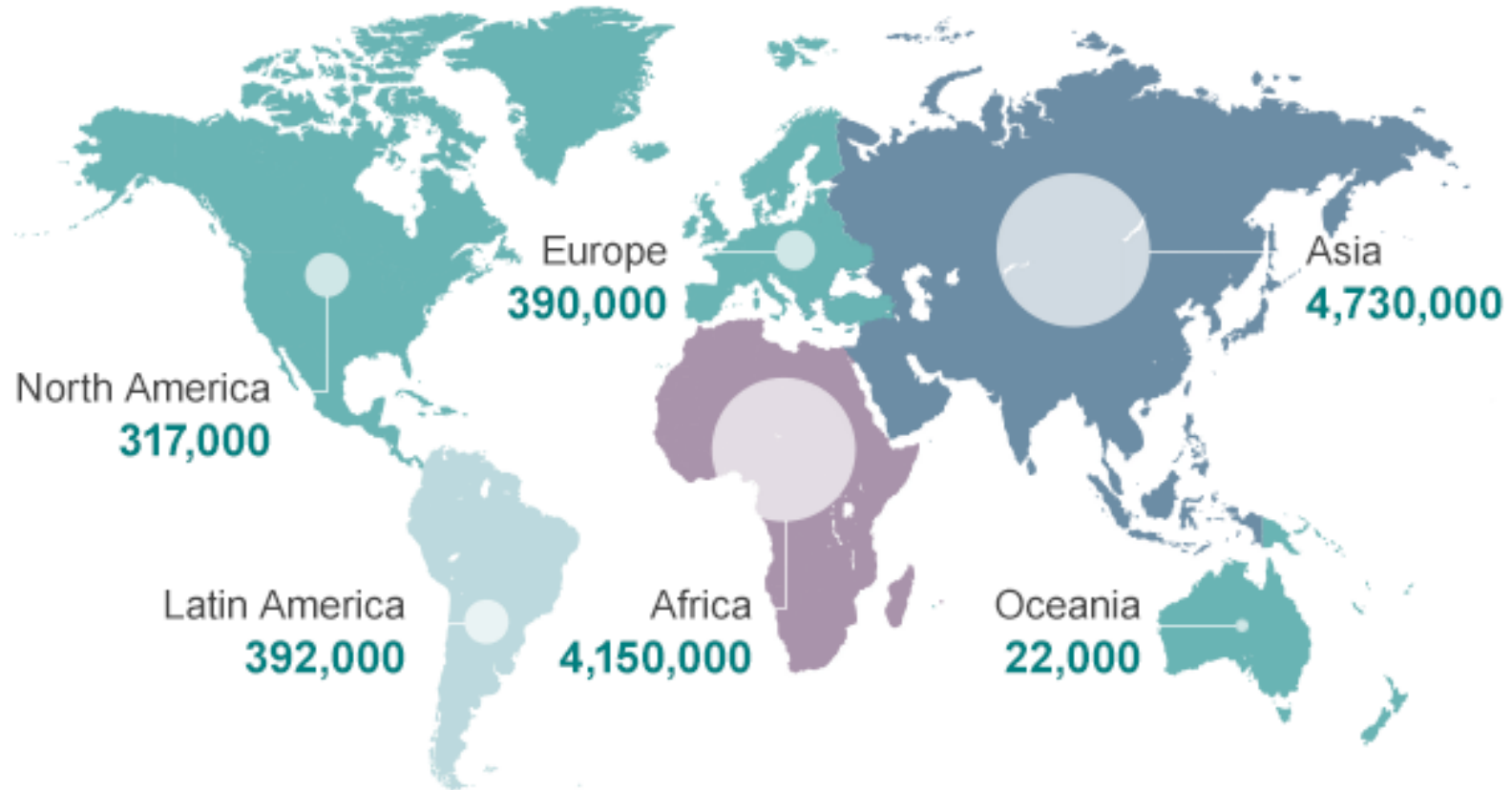
Deaths attributable to antimicrobial resistance every year compared to other major causes of death



Source: Review on Antimicrobial Resistance 2014

Antimicrobial Resistance - Globally

Deaths attributable to antimicrobial resistance every year by 2050



Source: Review on Antimicrobial Resistance 2014

Antimicrobial Resistance - Locally

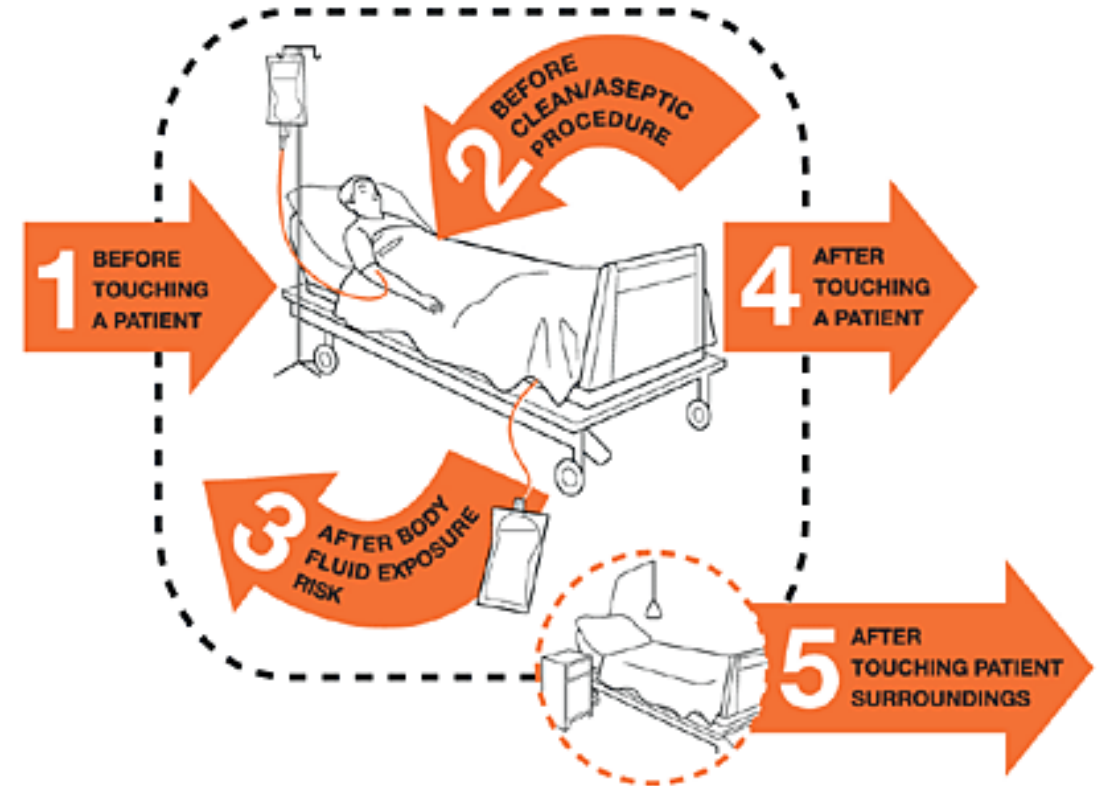
- MRSA (high rates in community)
- Enterobacteriaceae
 - Extended Spectrum Beta-Lactamase producing E Coli
 - Klebsiella
- *Neisseria Gonorrhoeae*
- Vancomycin Resistant Enterococcus (not so common)
- Carbapenem Resistance Enterobacteriaceae (not in the Top End yet???)

What do we do at Katherine Hospital?



Stop acquisition of resistant organisms

- Handwashing
- Aseptic Technique
- Good nursing care
- Infection Control Team



Antimicrobial Stewardship

- Antimicrobial stewardship programs are aimed at “optimizing antimicrobial selection, dosing, route, and duration of therapy to maximize clinical cure or prevention of infection while limiting the unintended consequences, such as the emergence of resistance, adverse drug events, and cost.”
 - Avoid prolonged courses
 - Try to narrow cover as soon as possible
 - Minimise side effects

Antimicrobial Stewardship - TEHS

- TEHS Antimicrobial Stewardship Committee
- Sepsis Guidelines and Therapeutic Guidelines
- AMS ward round
- Restricted antibiotic list
- IFD codes
- TEAMS app
- Ongoing audit of the above (monitoring of prescribing EMMA)
- Raising Awareness Amongst Staff

Antimicrobial Stewardship - Katherine

- IFD codes provided by physicians for some restricted antibiotics
 - AMS input from the pharmacy team 5 days a week
 - Access to guidelines and apps for all staff
 - Education and Induction
-
- TEHS AMS Big Brother is watching!

Antimicrobial Stewardship- Locally

- 90.2% antibiotic prescribing appropriate in Katherine Hospital (*TEHS Audit data 2016*)
- Smaller Hospital
- Regular dialogue with colleagues
- Continued Audit
- Acting on data collected



Antimicrobial Stewardship - Locally

ROYAL DARWIN HOSPITAL 2015

Type of Error	Number of Occurances	Percentage of Orders	Grade
Overly broad antimicrobial used	55	5.29%	3
IV antibiotic treatment continuing lon	46	4.42%	2
Vancomycin dose incorrect in respect	30	2.88%	3
Ceftriaxone/Metronidazole used first	25	2.40%	3
Over/underdosage in respect to poor	23	2.21%	3
Surgical prophylaxis course extending	21	2.02%	4
Antimicrobial treatment continuing af	18	1.73%	4
Penicillin/cephalosporin not use d des	14	1.35%	3
Drug - bug mismatch	11	1.06%	4
Dosage incorrect	8	0.77%	3

KATHERINE HOSPITAL 2016

Broad definition of issue	Count	Percentage of orders
Overly broad antimicrobial used	4	3.15%
Penicillin/cephalosporin not used despite	3	2.36%
Vancomycin dose incorrect in respect to	3	2.36%
Antimicrobial not indicated	2	1.57%
Ceftriaxone/Metronidazole used first line for pancreatitis or intra-abdominal	2	1.57%
Dosage incorrect	1	0.79%
Antimicrobial unlikely to treat causative organism	1	0.79%
Ceftriaxone used first line for pyelonephritis	1	0.79%
IV antibiotic treatment continuing long term for non-severe infection	1	0.79%

Katherine Hospital Challenges

- Doctor Turnover and locums
- Diabetic Foot Problems
- Gent and Vanc assays
- Biofire in Katherine Lab?



Thank You

