

Patient centred care versus multi-resistant organism centred care:

*A new way to look at MRO management
in acute care settings*

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Patient-centred care

- The modern mantra of healthcare
 - The rights, experiences and views of patients are at the centre and drive the care process delivered
- Australian Charter of Healthcare Rights state:
 - Patients have the right to access services that address their healthcare needs
 - Patients have the right to receive safe and high quality health services, provided with professional care, skill and competence

Focus of MRO management

- Risk associated with MRO infections
- Precautions required to prevent transmission
- The presence of a MRO can determine the level of access to healthcare services
- We may even reason that:
 - *The inconvenience of the one patient protects the many.*

Traditional MRO management

- Priority single room placement
- Gown/Apron and gloves
- Changes to shared equipment management
- Changes to environmental cleaning management
- Scheduling patients to be last on the list for procedures or interventions
- Restriction on number of HCWs entering rooms
- Restriction of patient movements
- Visitor restrictions

Day 1: patient not known to be colonised with MRSA



Day 8: MRSA isolated wound swab



Impact on individual patient care

- Reduced direct observation
- Delay in patient transfers
- Placement outside of admission specialty
- Alienation
- Fear of giving it to their family
- Feeling dirty
- Restricted access to critical equipment e.g: resuscitation trolleys

Dhar S et al 2014; Morgan DJ et al 2014; Masse V 2013.



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Impact on individual patient care

- Environmental cleaning delayed or missed
- Delay in interventions and investigations
 - last on the listfirst to be cancelled
- Compromised rehabilitation
- Reduced HCW interactions
- Compromised clinical handover
- Compromised patient confidentiality

So why do we do this?

- More important to stop transmission of MROs to patients
- Preventing transmission of any organism is important
 - Human microbiome includes:
 - antibiotic sensitive bacteria - same species as MROs
 - Also pathogenic organisms

Normal Microbiome

Upper Respiratory Tract

- *Staphylococcus sp.*
- *Streptococcus sp.*
 - *Streptococcus pneumoniae*
 - *Viridans Streptococcus*
- *Haemophilus sp.*
- Anaerobes

Skin

- *Staphylococcus sp.*
- Coryneform bacteria or “Diphtheroids”
- *Propionibacterium sp.*

Large Intestine

- Anaerobes
- *Enterococcus sp.*
- Enterobacteriaceae
 - *E. coli*
 - *Klebsiella sp.*
- *Streptococcus sp.*
- *Lactobacillus sp.*
- *Candida sp.*

Genital Tract

- *Lactobacillus sp.*
- *Streptococcus sp.*

Approximately 100 trillion bacteria on the human body



Microbiome Hospitalised Patient

Upper Respiratory Tract

- *Staphylococcus sp.*
- Anaerobes
- Enterobacteriaceae
 - *E. coli*
 - *Klebsiella sp.*
- *Candida sp.*
- *Pseudomonas sp.*

Skin

- *Staphylococcus sp.*
- Enterobacteriaceae
 - *E. coli*
 - *Klebsiella sp.*

Large Intestine

- Anaerobes
- *Enterococcus sp.*
- Enterobacteriaceae
 - *E. coli*
 - *Klebsiella sp.*
- *Candida sp.*
- *Pseudomonas sp.*

Genital Tract

- *Candida sp.*

Why do we do this?

- MRO infections are more dangerous
- Poor outcomes
 - not caused by the intrinsic nature of the MRO
 - associated with the delay of appropriate antibiotic treatment

Godsell, Shaban & Gamble 2013; Gastmeier et al. 2012; Yilmaz et al. 2016, Big & Malani 2010; De Rosa et al. 2015;



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Why do we do this?

- Need to do more than standard precautions to stop transmission of MROs
- MRO transmission is identical to sensitive organisms i.e. contact transmission

Why do we do this?

- Gloves needed to stop transmission
- Gloves do not replace the need for hand hygiene
- Gloves interfere with hand hygiene compliance

Hand Hygiene Australia: Glove Use Policy
Dhar S et al 2014



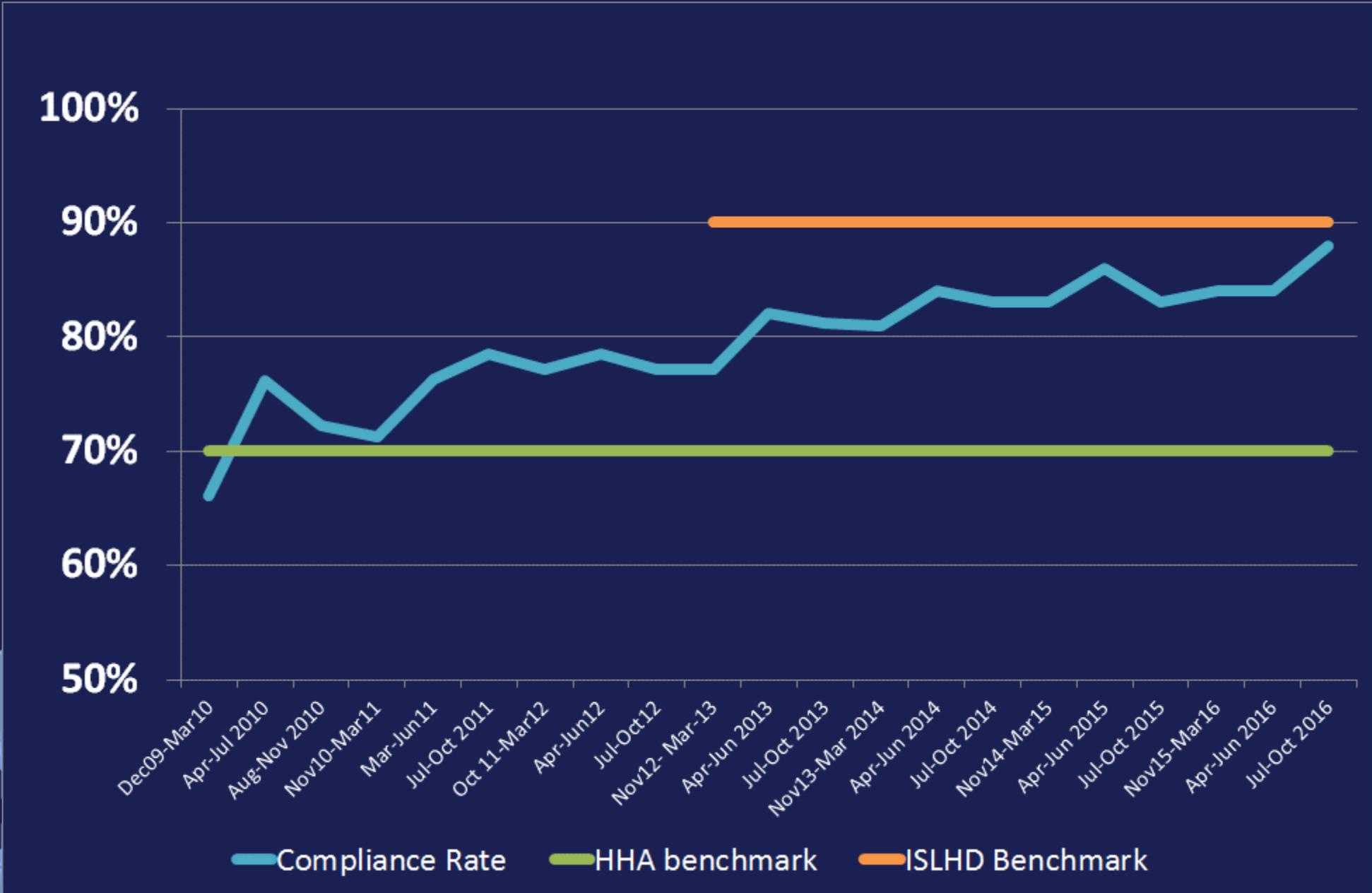
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Our conclusions

- MROs and sensitive organisms have the same route of transmission
- Compliance with standard precautions should reduce the risk of transmission for sensitive organisms and MROs

Strengthened Standard Precautions model

- >70% compliance with hand hygiene
 - ISLHD HH benchmark 90%



Strengthened Standard Precautions model

- >70% compliance with hand hygiene
 - Raised the benchmark to 90%
- Cleaning and disinfection of all toilets twice a day
- Aprons used for direct contact with all patients
- Glove use restricted to blood and body substance contact
- Point of use access to detergent wipes for non-critical reusable equipment cleaning.

Patient-centred care supported

- Removal MRO-based assessment of the need for Contact Precautions
- Universal application of modified standard precautions
 - scheduling patients last on a list not needed
- Patient-focussed risk assessment
 - Individual patient transmission risks
 - Type of clinical setting

How buy-in was achieved

- Ensuring access to resources to facility compliance with standard precautions
- At least **2 years prior** to implementation
 - “Preached” standard precautions can prevent transmission of sensitive and resistant organisms
 - Formal presentations
 - Staff enquiries
 - Informal conversations

Risk assessment tool

- Transmission risk associated with the patient

1	Risk factors presented by the MRO colonised/infected patient that would increase the likelihood of transmission to others							
1A	Patient behaviours →	<u>Controllable behaviours</u> <ul style="list-style-type: none"> • Continent • Neonate or <12 months • Cooperative ambulant adult/adolescent • Bed/chair bound • Ambulant with assistance of staff 			<u>Less controllable behaviours</u> <ul style="list-style-type: none"> • Incontinent or poor continence management • 1 - 15 years old • Uncooperative/cognitively impaired ambulant patient • Ambulant without assistance of staff (e.g. falls risk) 			
1B	Clinical transmission risks →	Good skin integrity	Poor skin integrity ^a	Enteric symptoms (diarrhoea)	Good skin integrity	Poor skin integrity ^a	Enteric symptoms (diarrhoea)	

^a: including exfoliating skin conditions, exuding wounds and abscess, but **NOT** including skin tears

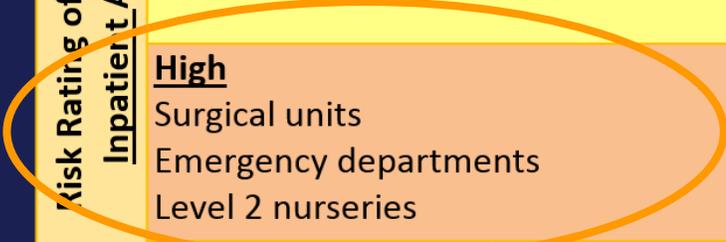
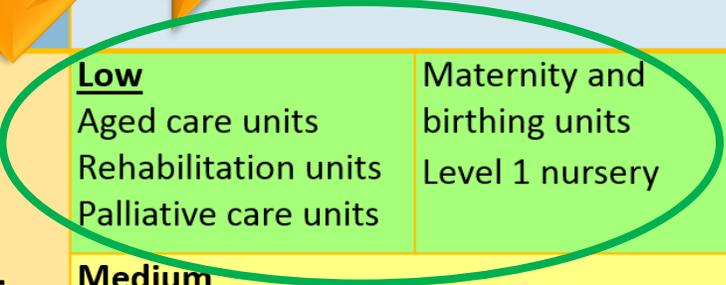
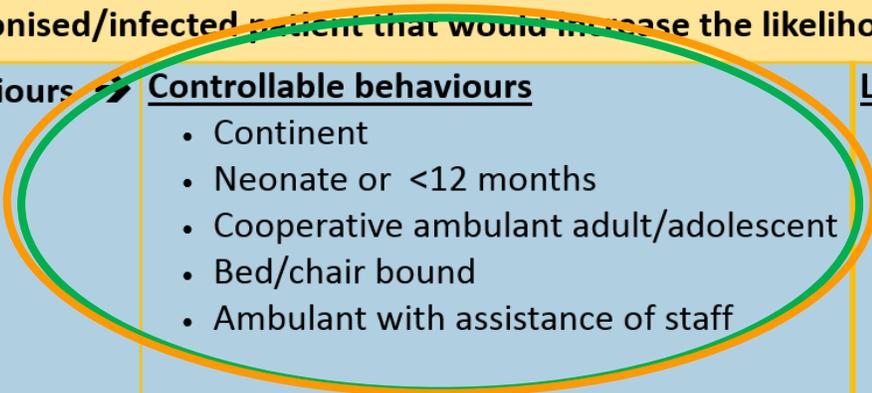
Risk assessment tool

- The clinical setting

2	Risk Rating of Clinical Inpatient Areas	<u>Low</u> Aged care units Rehabilitation units Palliative care units	Maternity and birthing units Level 1 nursery
		<u>Medium</u> Acute medical units Paediatric units	
		<u>High</u> Surgical units Emergency departments Level 2 nurseries	
		<u>Extreme</u> Intensive care units Renal dialysis units	Haematology and oncology units Transplant units

Based on AHFG Part D Infection Control Risk Assessment

1 Risk factors presented by the MRO colonised/infected patient that would increase the likelihood of transmission to others									
1A	Patient behaviours →		<u>Controllable behaviours</u>			<u>Less controllable behaviours</u>			
			<ul style="list-style-type: none"> Continent Neonate or <12 months Cooperative ambulant adult/adolescent Bed/chair bound Ambulant with assistance of staff 	<ul style="list-style-type: none"> Incontinent or poor continence management 1 - 15 years old Uncooperative/cognitively impaired ambulant patient Ambulant without assistance of staff (e.g. falls risk) 					
2	Clinical transmission risks →		Good skin integrity	Poor skin integrity ^a	Enteric symptoms (diarrhoea)	Good skin integrity	Poor skin integrity ^a	Enteric symptoms (diarrhoea)	
	Risk Rating of Clinical Inpatient Areas	<u>Low</u> Aged care units Rehabilitation units Palliative care units	Maternity and birthing units Level 1 nursery	Standard precautions	Standard precautions	Standard precautions <i>Single room if available, or allocated toilet</i>	Standard precautions	Standard precautions	Standard precautions <i>Single room if available, or allocated toilet</i>
		<u>Medium</u> Acute medical units Paediatric units		Standard precautions	Standard precautions	Standard precautions <i>Single room if available, or allocated toilet</i>	Standard precautions	Standard precautions	Standard precautions <i>Single room</i>
		<u>High</u> Surgical units Emergency departments Level 2 nurseries		Standard precautions	Standard precautions <i>Single room if available</i>	Standard precautions <i>Single room if available, or allocated toilet</i>	Standard precautions	Standard precautions <i>Single room if available</i>	Standard precautions <i>Single room</i>
		<u>Extreme</u> Intensive care units Renal dialysis units	Haematology and oncology units Transplant units	Standard precautions	Standard precautions <i>Single room if available</i>	Standard precautions <i>Single room if available, or allocated toilet</i>	Standard precautions <i>Single room if available, or allocated toilet</i>	Standard precautions <i>Single room if available, or allocated toilet</i>	Standard Precautions <i>Single room</i>

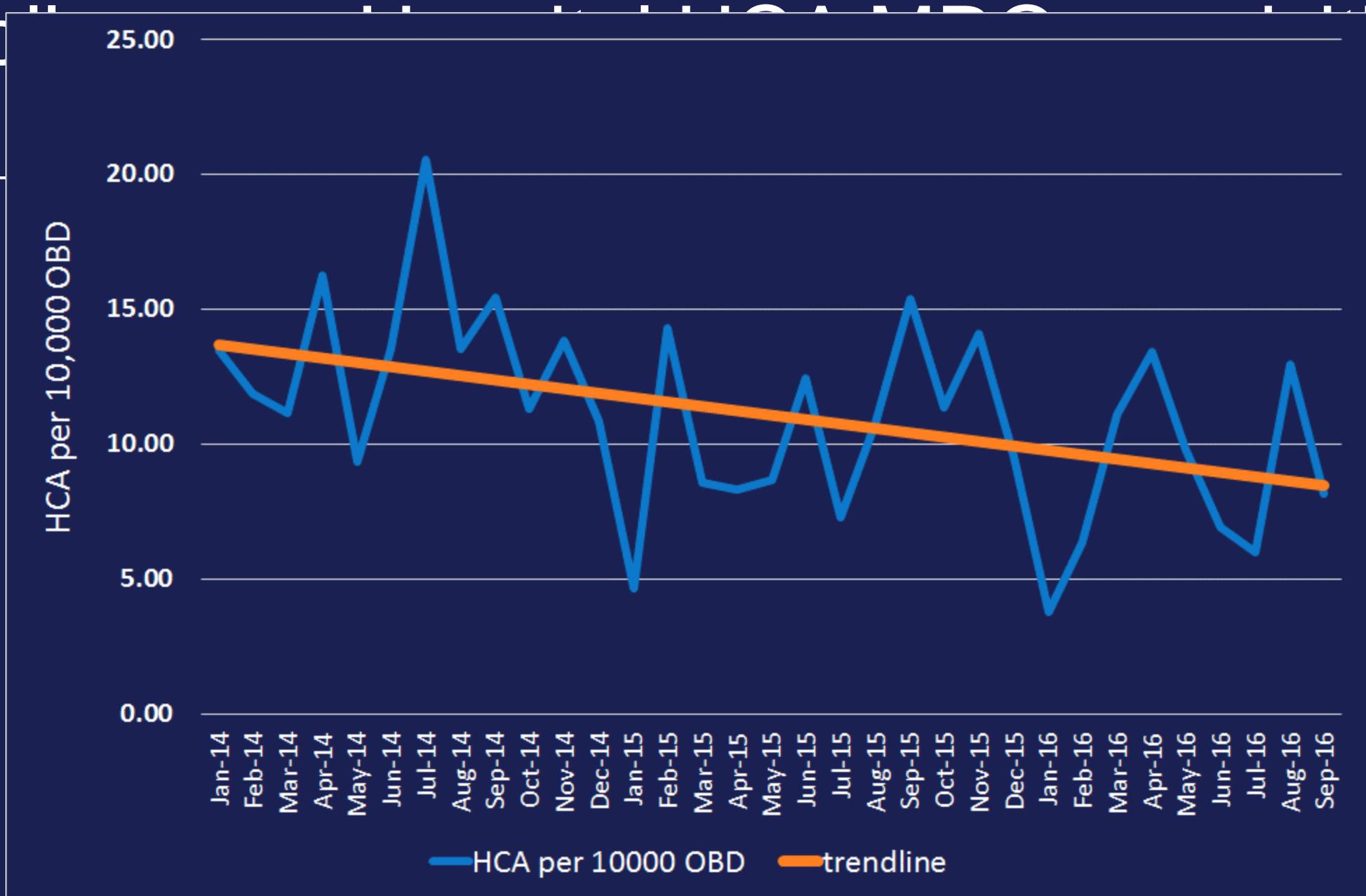


Results

- Reduction in overall rates of MRSA, VRE and multi-resistant gram negative organisms (MRGNs)
 - from **13.5 HCA** per 10,000 OBD in Jan-2014
 - to **8.2 HCA** per 10,000 OBD in Sept-2016.
- 60% reduction in HCA MRO acquisitions

World

Regions



Conclusion

- Patient-centred care should not be compromised because of infection prevention and control practice
- MRO transmission can be controlled through the implementation of modified Standard Precautions and a risk assessment approach
- Is it time for infection prevention and control services to reconsider how we approach infection control and the management of MROs?

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Questions?

