MDRGN – Infection Prevention
APR Wilson, University College London Hospital
Broadcast live from the HIS/FIS conjoint conference  www.hisconference.org.uk

Transmission
- Complex network of transmission between humans, sewage, environment, food, crops and food animals, and pets.
- Pressure of human/animal antibiotic use
- CTX-M E. coli often ciprofloxacin resistant
- Urinary infection most common
- Old age, long stay
- Clone E. coli ST-131 spread CTX-M-15

Multi-Drug Resistant Gram Negative Infections
INFECTION PREVENTION
APR Wilson
University College London Hospitals

EARS E. coli 3rd gen cephalosporin Resistance 2003
EARS Escherichia coli 3rd gen cephalosporin Resistance 2010

Sources
- Residential homes – reservoir gut carriage
- Domestic - hand hygiene after toilet
- Hospital : Klebsiella, Enterobacter, Serratia – hand hygiene

Basic Principles
- Reduce urinary catheterisation, intubation
- Enhanced cleaning
- Pre-emptive isolation
- Hospital transfer handover
- Outbreak control + root cause analyses
High risk of transmission
- Diarrhoea, urinary incontinence, close contact
- Highly transmissible strain
- Vulnerable patients
- First case in unit
- Rising number of cases with transmission despite precautions

Serious Incident
- Involve senior management
- Check for transmission + screen patients
- Consider Outbreak Group Meeting - Infection Control Lead, managerial, estates, nursing and clinical members
- Case definition - case finding
- Criteria for unit closure

Patient Isolation
- Single room or cohort
- Case mix, multidrug resistance, staffing
- Faecal colonisation - enhance environmental cleaning
- Antibiogram / send to reference lab
- Patient specific BP cuffs & stethoscopes

Antibiotic Stewardship
- Staff training
- Monitor and feedback use of antibiotics
- Limit 3rd generation cephalosporins, quinolones and aminoglycosides
- Do not treat colonisations

Screening
- Admissions to unit / ICU
- Preemptively isolate and screen admissions from high incidence units or known carriers
- Weekly screens
- Do not screen staff unless implicated

Cleaning
- Targeted high contact surfaces bed rails, commodes, door handles, taps
- Close ward and terminal clean
- Consider steam clean or hydrogen peroxide

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Education
- Training of staff on transmission
- Patient and visitor information leaflets
- Record mortality rate and produce report with root cause analysis

Carbapenem-resistant Enterobacteriaceae
- Single room isolation
- Look back 6 months
- Screen contacts – rectal swabs
- If uncontrolled close unit
- No routine surveillance
- Terminal clean – steam or hydrogen peroxide

Selective decontamination
- Topical non-absorbable antibiotics oropharynx and stomach
- SDD: Short course intravenous antibiotic
- SOD: no iv antibiotic
- 12 meta-analyses and 36 RCT; 10 studies show reduction in pneumonia
- Dutch study 5939 patients 3.5% reduction mortality

Problems
- Will ESBL E coli become common?
- Gut carriage – no accurate estimate
- Imported food
- Human - animal transmission
- BSAC/HIS/BIA Working Party

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