MULTI DRUG RESISTANT ORGANISM COLONISATION (MRSA, ESBL etc.) ● 1/3

Use this guideline in conjunction with your local Trust policy

This guideline describes the screening and follow-up action for the following organisms:

- Methicillin-resistant *Staphylococcus aureus* (MRSA)
- Multi-resistant Gram-negative bacilli (MGNB) including:
  - extended spectrum beta lactamase (ESBL)-producing Enterobacterales
  - carbapenemase-producing Enterobacterales (CPE)
  - other carbapenemase-producing multi-drug resistant GNB

SCREENING

Babies transferred from other hospitals

- Screen on arrival. Include babies who attend other hospitals for invasive day case procedures (e.g. PDA ligation)
- MRSA:
  - swab nose and perineum plus umbilicus if still moist, and swab any skin lesion (e.g. indwelling vascular line)
  - urine if long-term urinary catheter present
- MGNB:
  - obtain rectal swab or swab from stool sample; swab must contain visible faecal material to ensure a reliable screening result
  - urine if long-term urinary catheter present
- Barrier nurse until **all** swabs confirmed negative at 48 hr

Routine screening on unit

- MGNB: monthly
- MRSA: monthly
- Frequency of screening may be increased on advice of lead infection prevention doctor/infection prevention team if unexplained acquisition of MRSA and/or MGNB occurred on ward

Infection control alerts

- Infection control alert to be triggered for 2 yr after last positive result, irrespective of any negative follow-up screens
- Babies colonised with CPE and other carbapenemase-producing GNB require an infection control alert to be displayed for 5 yr after the last positive result, irrespective of any negative follow-up screens
- Babies identified by infection prevention team as a close contact of a baby with CPE will require a patient infection control alert up to 5 yr; can be removed when 3 follow-up screens for MGNB, submitted since the creation of the alert, reported as 'MGNB **not** isolated'

MANAGEMENT OF INCIDENTAL FINDINGS

If new case MRSA reported in patient, offer screening for MRSA:

Mother

- Screen mother with nasal, perineal, wound and skin lesion swabs, if any of the following:
  - delivery by caesarean section
  - mother had recent admission to hospital before delivery
  - mother has chronic health problem (e.g. diabetes mellitus, asthma)
  - mother has other risk factor, high BMI or is a healthcare worker with patient contact
  - mother or household member has a history of skin/soft tissue infection abscess or recurrent skin infections in the last 12 months
- If none of these risk factors present, screening contacts is not necessary unless advised by consultant microbiologist

Contacts on NICU (patients only):

- Those who have been in close proximity of the index case (i.e. in the same room)
- Potentially all babies on the ward following a risk assessment and discussion with consultant of the week, co-ordinator, infection prevention team and consultant microbiologist
- Healthy babies about to be discharged home do not require screening unless advised by consultant microbiologist

Decolonisation of MRSA carriers

- Discharge term healthy babies without decolonisation treatment

- Smaller babies with indwelling lines or CPAP probes are more at risk of infection and should be treated
- Decolonisation may fail due to presence of indwelling lines/foreign body material; repeat once all indwelling lines/foreign bodies removed
- mupirocin (Bactroban Nasal®) ointment applied to inner surface of each nostril 3 times daily for 5 days; if MRSA reported as high level resistant to mupirocin discuss with consultant microbiologist
- wash daily with antimicrobial wash, e.g. chlorhexidine or octenidine, for 5 days
- Repeat screening swabs 48 hr after all antibiotic treatment has finished and if baby not about to be discharged
- Successful eradication can be assumed if 3 consecutive swabs taken at 3–7 day intervals are negative. Do not attempt to decolonise more than twice during any 1 admission

MGNB

- Do not attempt decolonisation. Do not treat asymptomatic rectal carriage. Colonisation is in the gut. Drugs are ineffective – may severely damage gut flora and encourage development of resistant organisms
- MGNB: gut carriage not permanent, however may last for several months to years
- barrier nurse until discharge

MANAGEMENT OF OUTBREAK

MRSA

- ≥2 babies with same strain of MRSA constitutes an outbreak
- considered 'the same' if they have been sent by microbiology to a reference laboratory for typing and have been reported by reference laboratory as 'indistinguishable'

Action on advice of infection prevention team

- Screen all babies in NNU (swabs as above)
- Optimise infection control measures: see **local infection control policy**
- If further cases of the same strain occur:
- arrange incident meeting to discuss further measures, e.g. swabs from all clinical staff on unit
- If contact screening of clinical staff for MRSA recommended by lead infection prevention doctor/consultant microbiologist, to be co-ordinated by infection prevention team in collaboration with occupational health (OH)
- results sent to OH and infection prevention team
- contact screening for MRSA of healthcare workers must follow local infection prevention guidance

MGNB

- ≥2 babies with same type of MGNB/CPE constitutes an outbreak
- considered 'the same' if sent by microbiology to reference laboratory for typing, and reported as 'indistinguishable'
- For CPE ≥2 babies with the same carbapenemase gene (OXA-48, KPC, VIM, NDM-1 etc.) irrespective of organism if associated in time and space constitutes an outbreak

Action

- Screen all babies in NNU on advice of infection prevention team
- Optimise infection control measures: see **local infection control policy**
- If further cases of same strain occur arrange incident meeting to discuss further measures e.g. environmental screening etc.

CPE

- Screen all contacts (should be alerted on local hospital system)
- 3 rectal swabs/swab from stool sample, ≥24 hr apart
- if baby on antibiotics: take ≥1 swab >48 hr after stopping antibiotics
- if all 3 swabs negative: clear of CPE contact status
- if any swab positive, following required:
  - strict isolation
  - long sleeved gowns
  - gloves
  - barrier nursing
  - barrier cleans
- Barrier nurse all colonised babies until discharge

MULTI DRUG RESISTANT ORGANISM COLONISATION (MRSA, ESBL etc.) ● 3/3

- Ensure strict infection prevention measures in place for all babies identified as CPE contacts/with close contact alert
- If CPE reported during current hospital admission:
  - strict infection prevention measures to remain in place (irrespective of any negative follow-up screens)
  - follow-up screens not required
  - if baby discharged whilst being investigated as contact, follow-up rectal swabs in the community are not required
  - if readmitted whilst having a close contact alert, commence/continue follow-up MGNB screening and repeat on different days until 3 follow-up screens have been reported as 'MGNB **not** isolated'
  - close contact alert will remain on hospital system for 5 yr, unless 3 follow-up screens reported as 'MGNB **not** isolated'