British Association of Perinatal Medicine

Spotlight on Safety

External reservoirs of infection during an outbreak	
Situation	CPE outbreak on regional Surgical NICU with infection of four babies, directly contributing to death of two babies <26/40. Unexpected role of shared parental accommodation identified as a contributory factor.
Background	Maternity screening process for CPE was not properly followed in the index case and led to introduction of CPE on NICU unintentionally. Three further cases were found from this index case and unfortunately CPE played a significant part in the death of two extreme preterm babies.

Assessment	Appropriate IPC measures were immediately put in place on NICU after widespread screening of NICU patients including: review of maternity screening policy; cohorting babies; and significant restrictions imposed to limit footfall on NICU. These included temporary restriction on extended family visiting, and closing communal spaces within the NICU to allow cleaning and prevent unintended exposure with further spread. Deep cleaning was instigated across the NICU. A wide-ranging investigation into the outbreak was conducted in real time with strategic meetings used to plan ongoing screening and as the outbreak was contained how to lift restrictions in a stepwise fashion to come out of the outbreak. The ongoing investigation identified an unexpected potential reservoir to this outbreak in shared parental accommodation provided by a Charitable Trust, away from the NICU but within the hospital grounds. This facility had fixtures and furnishings which could not be cleaned to the same standards as those in the NICU, as well as shared areas such as bathrooms (none were en-suite) as well as communal areas (e.g. kitchens) used by both NICU families and families with children inpatient in other wards in the hospital such as PICU. This then led to concerns that there might be unwitting spread via this route between families into other critical care areas in the hospital. The NICU families accommodated in local hotels by the Trust as a temporary measure (with en-suite facilities for each family) until the parents accommodation was cleaned and processes for using it reviewed. With these measures, the outbreak was contained within a month and, after 6 months, restrictions in terms of use of shared space in the NICU and family presence on NICU were lifted. Wider learning was shared with the ODN and NICUs in our region during and after the outbreak.

Recommendations	The learning we wanted to share from this with the wider neonatal community was the unexpected finding about the standards of cleaning and facilities in the shared parental accommodation, off the NICU. As a surgical NICU taking critically ill babies from around the region, access to parental accommodation is essential to help provide family integrated care. However, it was clear from our experience that as standards for cleanliness and cleaning in hospitals are regularly reviewed and new technologies (such as UV cleaning or HPV cleaning) are updated and implemented, the same cannot be assumed for other areas or facilities that by extension are part of the wider estate used by families. We would encourage teams in NNUs who have access to externally provided accommodation for parents to review these as soon as possible to ensure that cleaning and cleanliness is to as near as possible the same standard as would be expected in NICU. Our experience would suggest that not doing so risks a persisting reservoir of infection in the circumstance of an outbreak and this risks unwittingly undoing IPC measures taken in the NICU during outbreaks of infection.