A QI project to introduce point of care CRP testing for asymptomatic babies receiving antibiotics on the post natal ward

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Aims:

- To see if point-of-care (POC) rather than laboratory C-reactive protein (CRP) testing on the postnatal ward (PNW) leads to earlier discharge for asymptomatic babies, ≥37 weeks gestation, who have been screened and treated for sepsis based on risk factors alone.

Method:

- Babies ≥ 37 weeks gestation receiving antibiotics for sepsis risk factors alone (maternal group B streptococcal infection, prolonged rupture of membranes > 18 hours and suspected maternal sepsis) on the PNW were prospectively identified from the daily handover list.
- Babies were excluded if clinically unwell. In our Trust all babies who meet the threshold for screening and treating for infection have a CRP at birth and a second CRP taken at 18-24 hours of life.
- Babies who remain clinically well with second CRP <10mg/L will stop antibiotics prior to the 48-hour blood culture result and be discharged back to midwifery care.
- Data was collected before and after the introduction of midwifery-lead POC 2nd CRP testing to see if the 2nd CRP was taken at the correct time and if it lead to earlier discharge from the PNW.

Results:

	Cohort 1- laboratory 2nd CRP	Cohort 2- POC 2nd CRP
Number of babies	35	19
Most common reasons for antibiotics	Maternal pyrexia/sepsis Prolonged rupture of membranes	Maternal pyrexia/sepsis
Birth CRP<1mg/L	97%	100%
Average length of time (hours) between 1st and 2nd CRP (target 18-24)	25	24
% with 2nd CRP<10mg/L, suitable to have antibiotics stopped	63%	53%
Average time taken to stop antibiotics after CRP result (hours)	8	5
Total number unnecessary antibiotic doses given	8	5 *
Average time of discharge to midwifery care after 2nd CRP result (hours)	16	15.5

* Although this seems like less unnecessary doses were given in the second cohort, that first cohort had more patients in it, so this doesn't show an improvement. In fact, if you look at it as extra doses given per baby, it was higher for the second cohort

Conclusions:

- Using a POC CRP for the repeat CRP in these low risk cases seemed to slightly reduce the delay in the second test happening and on average meant that it happened within the 18-24h recommended interval. However, the difference was small so this would need to be looked at further.
- Using the POC CRP for the repeat test didn't seem to help reduce the number of unnecessary antibiotic doses being given in this sample.
- Even when these low risk babies have a second CRP <10mg/L and so from an infection point of view can be discharged, the vast majority end up staying for other reasons – primarily feeding support, so overall this won't necessarily help to speed up discharges for the majority of babies. It may help in cases where there are no additional reasons for the baby to stay in hospital.
- Perhaps when this is more embedded in practice, it can improve the subsequent doses of un-needed antibiotics and also ensure that the second CRP is repeated in the recommended time frame, but further evaluation would be needed. From our initial QI project it doesn't appear that there currently would be a benefit to POC CRP over lab CRP on the PNW for these babies.