1 HOUR TO TREAT.
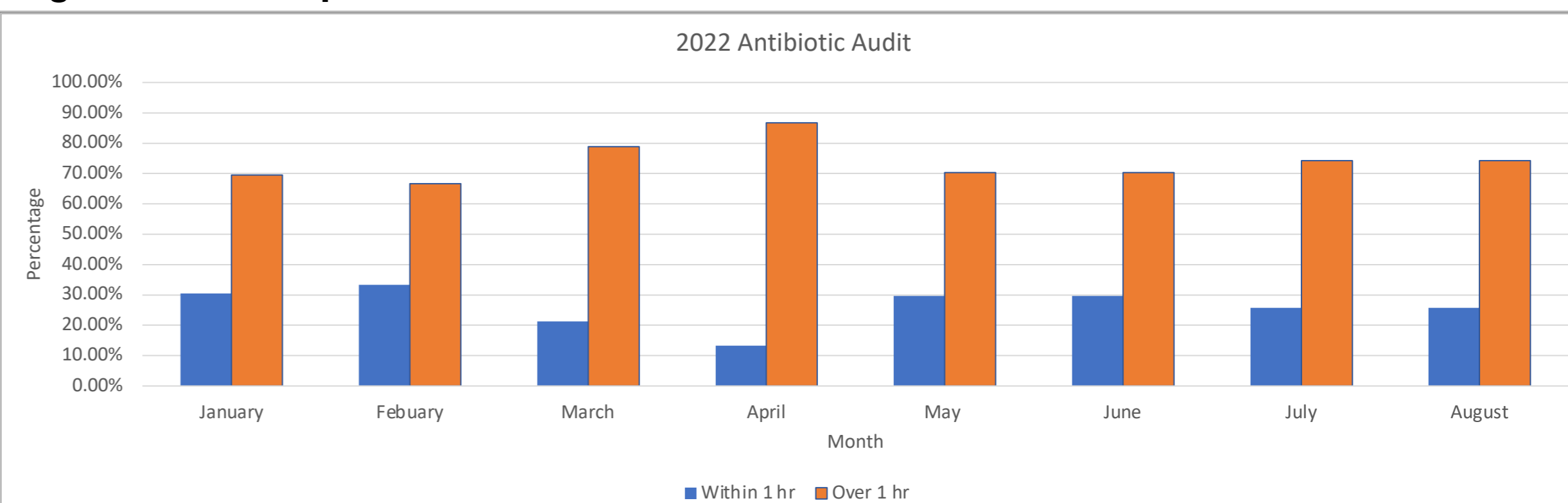## A Quality Improvement Project in an LNU.
PRIORITISING THE GOLDEN HOUR TO IMPROVE ANTIBIOTIC ADMINISTRATION.
Carina Tanner – ANNP

Background – Neonatal infections in the UK population, confirmed by positive blood or cerebral spinal fluid culture, affects 2.9/1000 live births each year (Vergnano *et al,* 2011). Early onset sepsis is the term used to describe systemic infections of bacterial, viral or fungal origin which occur within the first 72 hours of life (Shane *et al,* 2017). Clinical indicators of infection may intersect the physiological changes that occur after birth challenging detection and commencement of treatment (Natarajan *etal,* 2014). NICE guidance recommends commencing antibiotic treatment within 1 hour from decision to treat in the neonatal population (NICE, 2021). Local unit data (Figure 1) suggests less than half of infants are treated within this timeframe, indicating the need for investigation and improvement. Lack of knowledge and awareness of this guidance and the Golden Hour was the hypothesised cause therefore a teaching package was implemented with the intention of improving compliance through education.

Aim – To implement a teaching package to improve timely antibiotic administration from decision to treat within the local neonatal unit located in a District General Hospital located in the South-West of England. A 6-month time scale for completion was proposed.

Figure 1 : Pre improvement data

Design/Method – A Quality Improvement methodology was employed in the implementation of this project following stakeholder identification and mapping. An education board and teaching sessions were introduced in an incremental way, starting with a small cohort and increasing as teaching was evaluated. A questionnaire combining closed questions and interval response scales was utilised to gauge understanding before and after teaching to measure effectiveness. Alongside this a data collection sticker was introduced to clearly document decision to treat time and antibiotic administration time to aid audit. PDSA cycles were used to evaluate the effectiveness of the teaching session allowing adaptations to content as required.

Results – A 30% improvement in the number of infants receiving antibiotics within one hour of the decision to treat was anticipated following the implementation of the teaching package over a 6 month period. The run chart in Figure 2 shows unit data from 2021-2023. The data from point A onwards shows an increase in achievement of the one-hour target for treatment. This rise is thought to have occurred due to increased awareness and discussion. The information board and teaching was implemented at point B. It is anticipated that each PDSA cycle will show a continuation of upward trend and rise in median.

Figure 2:

Run Chart of past and current data.

Arrow A = Introduction to project and audit sticker.

Arrow B = Introduction of information board.
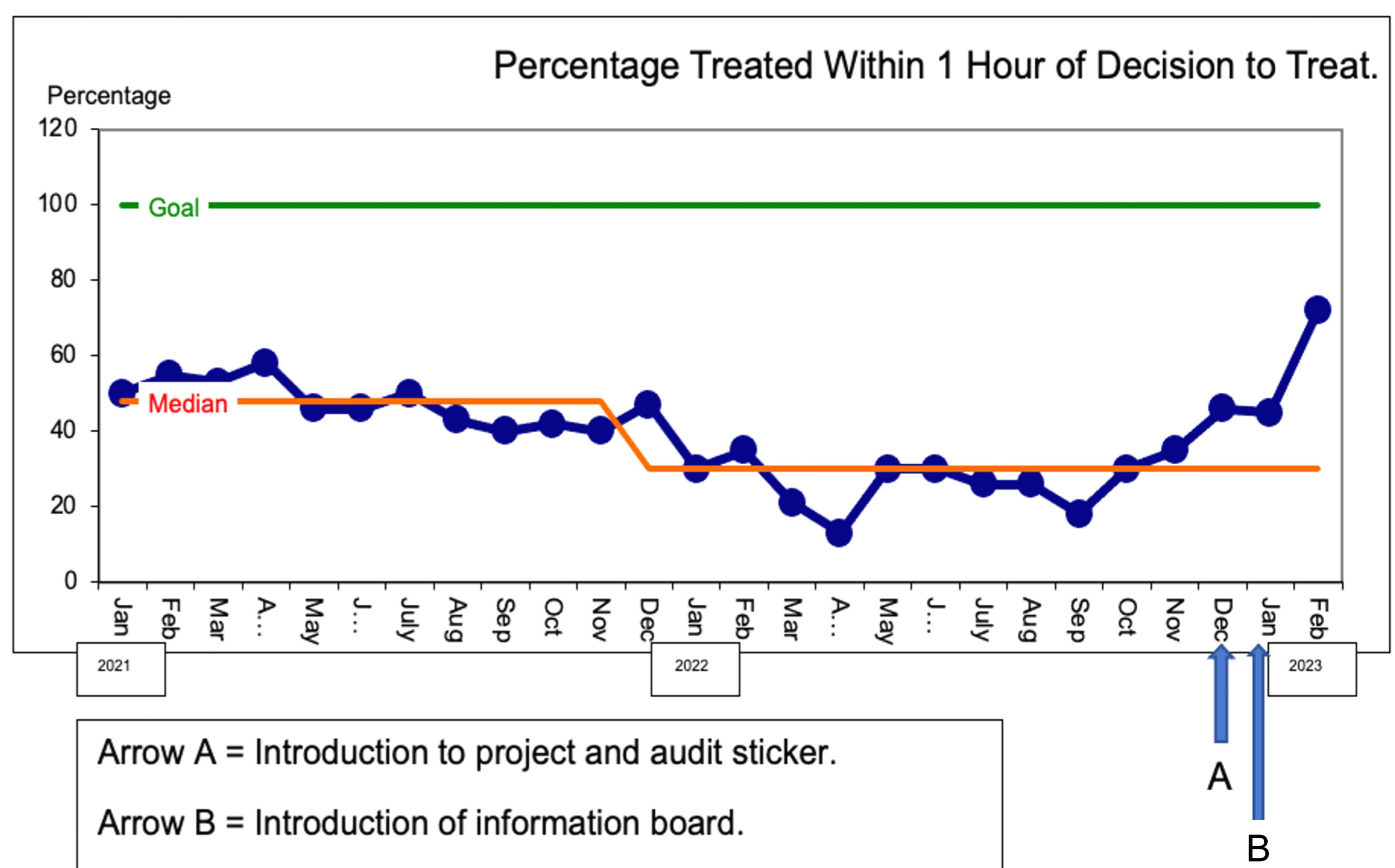
Conclusion – Improvement has been shown in audit figures since the initial introduction of the education board. Provision of the teaching sessions continues with further improvement anticipated. This work has generated data which will influence future QI work in the local setting, supporting the development of a workplace culture that is open and welcoming to change and improvement.

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Shane, A.L., Sánchez, P.J. and Stoll, B.J. (2017) 'Neonatal sepsis'. *Lancet.* 14(390) pp.1770-1780. doi: 10.1016/S0140-6736(17)31002-4.

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