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Induction video helps increase awareness but doesn't translate into reduced contaminates in ICU blood cultures

Background

Blood cultures are commonly taken in critical care. Cultures are an essential part of diagnostic work ups as recommended by international guidelines (1). Taking cultures allows causative pathogens to be isolated and antimicrobial treatment rationalised, as recommended by The National Institute for Health Care Excellence for antimicrobial stewardship (2). However, if there is poor technique there is risk of contamination of the blood culture which may lead to diagnostic confusion and delay. These contaminants are defined by Public Health England and recorded as part of ICNARC reporting.

Anecdotally there has been a number of different methods described by clinical staff on how they take cultures in Nottingham University Hospitals Critical Care (NUHCC). Many had learnt from senior colleagues from watching rather than looking at protocol. The aim of this QI project was to standardise practice amongst new starters in order to reduce contamination rates.

Objectives

- To increase awareness of correct blood culture technique.
- To standardise how new starters learn to take blood cultures on NUHCC.
- To reduce the incidence of contamination of blood cultures.

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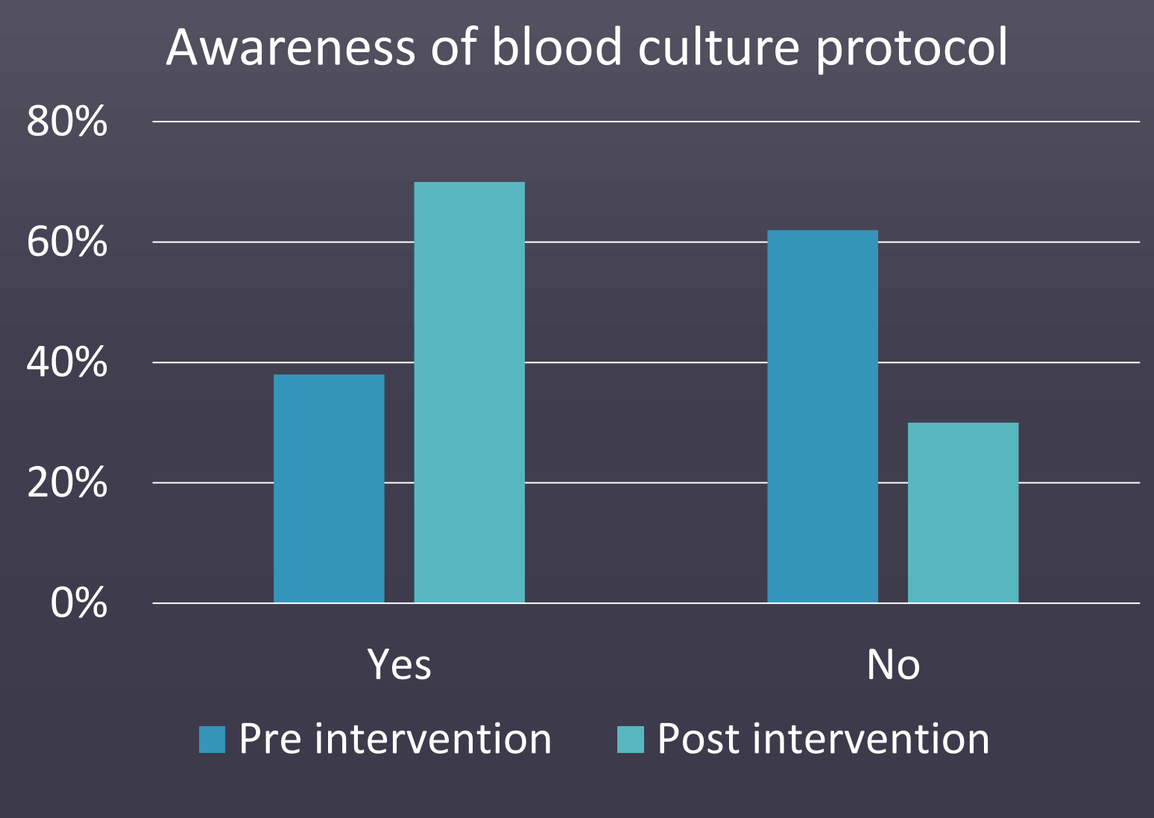
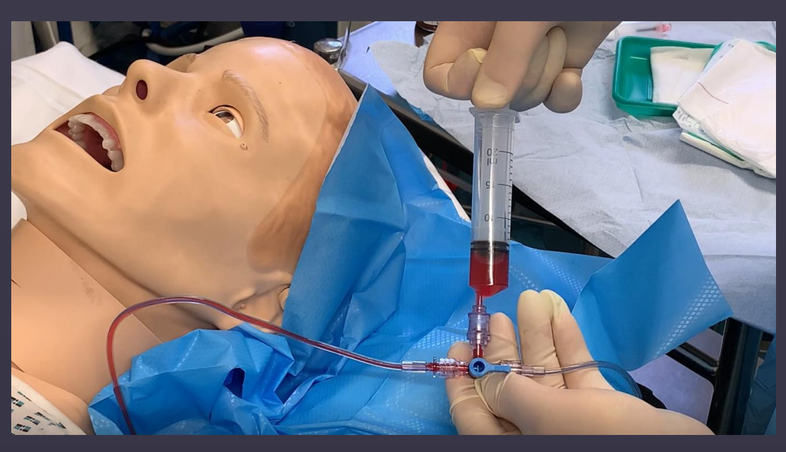
Methods

- Staff survey prior to and after induction
- Video created and presented on YouTube and sent to new starters in August 2021
- Analysis of PHE blood culture data





Results

- Increased awareness of standardised procedure from 38% to 70%
- Of the new starters in 2021, 9/10 said they learnt from watching the video
- Contaminate rate increased from 4.7% to 7.8% from 2020 to 2021

Conclusions

- Video demonstrations are an effective way of disseminating standard operating procedures to new starters
- Despite trainees being aware of recommended techniques this has not reduced contamination rates
- This is multifactorial and related to the case mix between 2020 and 2021
- The average date of culture was 7.8 days in 2020 and 15.1 days in 2021. Previous research on our unit has shown longer stay patients are more likely to have contaminates in their cultures
- Future Plans
  - Simulation at induction
  - Competition and prizes to trainees with fewest contaminates

References

1. de Backer D, Dorman T. Surviving sepsis guidelines: A continuous move toward better care of patients with sepsis. JAMA - Journal of the American Medical Association [Internet]. 2017 Feb 28 [cited 2021 Apr 7];317(8):807–8. Available from: https://jamanetwork.com/journals/jama/fullarticle/2598893
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