Presentation Type:
Poster Presentation - Top Poster Award
Subject Category: CLABSI
Effectiveness of a Multidisciplinary Team-Approach on Central-Line–Associated Bloodstream Infections
Geehan Suleyman; Melissa Ahrens and Ann Keegan

Background: Although there has been a significant reduction in central-line–associated bloodstream infection (CLABSI) rates in the past decade with the implementation of evidence-based practices, an estimated 30,100 CLABSI occur each year in acute-care facilities. CLABSIs are associated with increased length of stay, cost, morbidity, and mortality, and they are preventable. In this study, we assessed the impact of a multidisciplinary team approach on CLABSI rates at a 319-bed teaching hospital in northwestern Ohio. **Methods:** In this before-and-after retrospective study, we compared the CLABSI rate per 1,000 central-line days, standardized infection ratio (SIR), and standardized utilization ratio (SUR) in the preintervention period (January 1, 2016, to December 31, 2018) to those of the intervention period (January 1, 2019, to December 31, 2020). Despite hospital-wide nursing education focusing on central-line maintenance in 2017, our SIR and SUR remained above the national benchmark. Starting in August 2018, we began to focus on insertion practices and physician education. An infection preventionist observed resident central-line insertion training and noted that there was no emphasis on infection prevention measures. There was a best practice knowledge gap. Thus, the indications for central-line use were updated, the insertion checklist was standardized, and the vascular access policy was revised to limit femoral and internal jugular vein use. Infection prevention training was provided to all providers involved in central-line insertions. Nurses were tasked with observing insertion of every central line and stopping the procedure if there is was an observed break in sterile technique. A central-line report listing indications and duration was developed and was sent to the nursing directors who assessed daily need with providers and prompted removal of unnecessary lines. The infection prevention medical director provided CLABSI prevention education to providers. **Results:** The CLABSI rate per 1,000 central-line days decreased from 0.90 in the preintervention period to 0.34 in the postintervention period, resulting in a 62% reduction in CLABSI rate. The SIR decreased from 0.886 to 0.323 (p-value <0.05), yielding a 64% reduction. The SUR also decreased from 1.156 to 0.874 (p-value <0.001) with a 24% reduction. **Conclusion:** A multidisciplinary team-approach with emphasis on standardized insertion checklist to ensure adherence to sterile technique and prompt removal of unnecessary central lines, and physician insertion training focusing on IP practices may potentially reduce CLABSI rates.
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Sustainable Neonatal CLABSI Surveillance: Consensus Toward New Criteria in the Netherlands
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Group Name: Working Group on Neonatal Infectious Diseases of the Section of Neonatology of the Dutch Paediatric Society
Background: Central-line–associated bloodstream infections (CLABSIs) are a main focus of infection prevention and control initiatives in neonatal care. Standardized surveillance of neonatal CLABSI enables intra- and interfacility comparisons, which can contribute to quality improvement. To date, there is no national registration system for CLABSI in neonatal care in the Netherlands. Across neonatal intensive care units (NICUs), several different sets of CLABSI criteria and surveillance methods are used for local monitoring of CLABSI incidence rates. To achieve standardized CLABSI surveillance, we conducted a consensus procedure with regard to nationwide neonatal CLABSI surveillance criteria. **Method:** A modified Delphi consensus procedure for the development of nationwide neonatal CLABSI surveillance criteria was performed between January 2016 and January 2017 in the Netherlands. An expert panel was formed by members of the Working Group on Neonatal Infectious Diseases of the Section of Neonatology of the Dutch Paediatric Society. The consensus procedure consisted of 3 expert panel rounds. Figure 1 shows a detailed description of the consensus procedure. **Result:** The expert panel achieved consensus

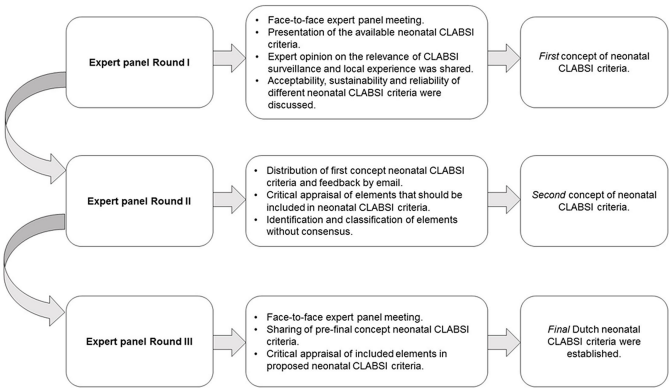

Figure 1.

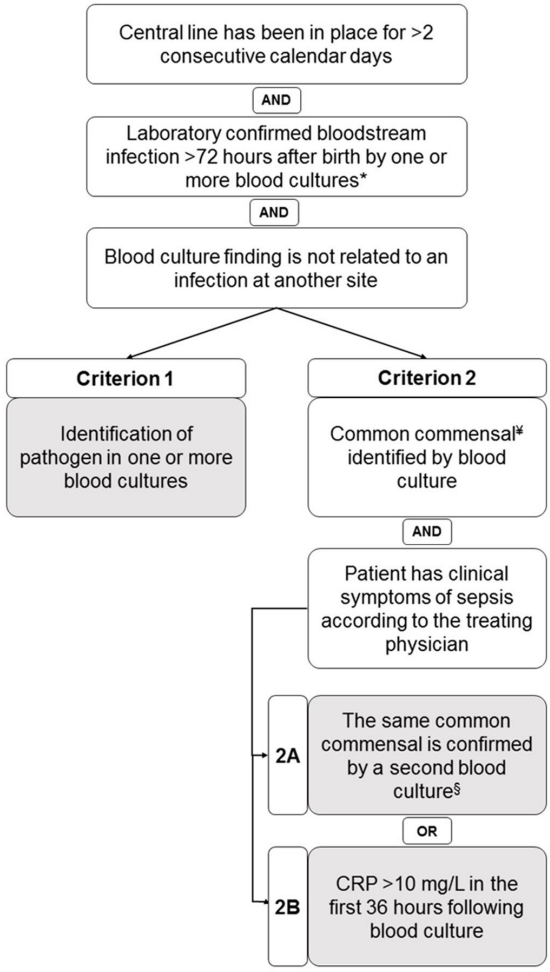

Figure 2.

on Dutch neonatal CLABSI surveillance criteria, which are summarized in Figure 2. Neonatal CLABSI is defined as a bloodstream infection occurring >72 hours after birth, associated with an indwelling central venous or arterial line and laboratory confirmed by 1 or more blood cultures. In addition, the blood culture finding should not be related to an infection at another site and one of the following criteria can be applied: (1) a bacterial or fungal pathogen is identified from 1 or more blood cultures; (2) the patient has clinical symptoms of sepsis and (2A) a common commensal is identified in 2 separate blood cultures or (2B) a common commensal is identified by 1 blood culture and C-reactive protein (CRP) level is >10 mg/L in the first 36 hours following blood culture collection. **Conclusion:** The newly developed Dutch neonatal CLABSI surveillance criteria are concise, are specific to the neonatal population, and comply with a single blood-culture policy in actual neonatal clinical practice. International agreement upon neonatal CLABSI surveillance criteria is needed to identify best practices for infection prevention and control.

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Does Every Patient with a Positive SARS-CoV-2 RT-PCR Test Require Isolation? A Prospective Analysis

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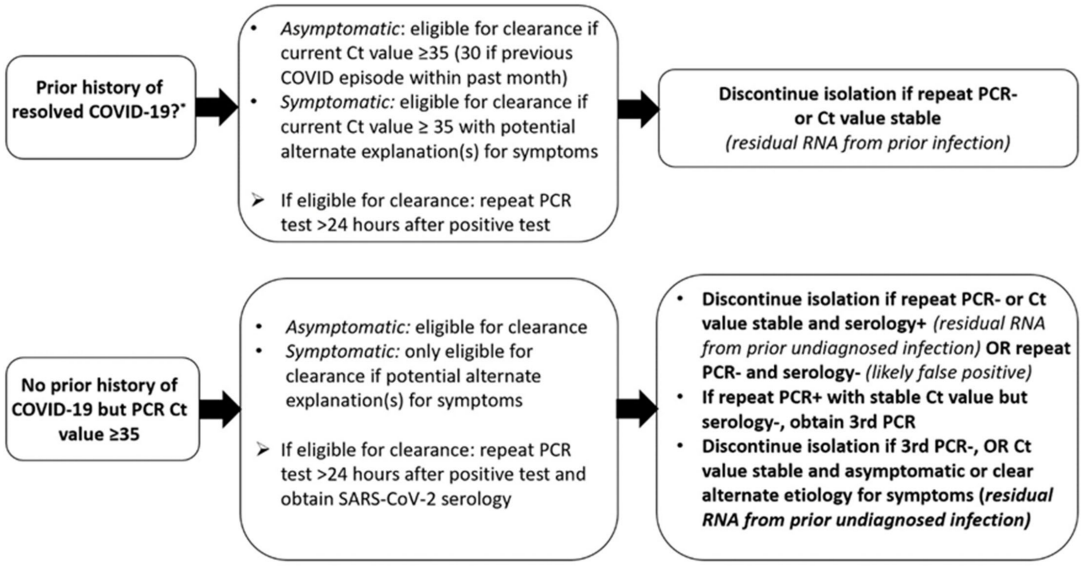
Group Name: CDC Prevention Epicenters Program **Background:** **Reverse**-transcriptase polymerase chain reaction (RT-PCR) tests are the reference standard for diagnosing SARS-CoV-2 infection, but false positives can occur and viral RNA may persist for weeks-to-months following recovery. Isolating such patients increases pressure on limited hospital resources and may impede care. Therefore, we quantified the percentage of patients who tested positive by RT-PCR yet were unlikely to be infectious and could be released from isolation. **Methods:** We prospectively identified all adults hospitalized at Brigham and Women's Hospital (Boston, MA) who tested positive for SARS-CoV-2 by RT-PCR (primarily Hologic Panther Fusion or Cepheid Xpert platforms) between December 24, 2020, and January 24, 2021. Each case was assessed by infection control staff for possible discontinuation of isolation using an algorithm that incorporated the patient's prior history of COVID-19, current symptoms, RT-PCR cycle threshold (Ct) values, repeat RT-PCR testing at least 24 hours later, and SARS-CoV-2 serologies (Figure 1). **Results:** Overall, 246 hospitalized patients (median age, 66 years [interquartile range, 50–74]; 131 [53.3%] male) tested positive for SARS-CoV-2 by RT-PCR during the study period. Of these, 201 (81.7%) were deemed new diagnoses of active disease on the basis of low Ct values and/or progressive symptoms. Moreover, 44 patients (17.9%) were deemed noninfectious: 35 (14.2%) had prior known resolved infections (n = 21) or unknown prior infection but positive serology (n = 14), high Ct values on initial testing, and negative or stably high Ct values on repeat testing. Also, 5 (2.0%) had recent infection but >10 days had passed since symptom onset and they were clinically improving. In addition, 4 (1.6%) results were deemed false positives based on lack of symptoms and at least 1 negative repeat RT-PCR test (Figure 2). One patient was asymptomatic with Ct value <35 but was discharged before further testing could be obtained. Among the 44 noninfectious patients, isolation was discontinued a median of 3 days (IQR, 2–4) after the first positive test. We did not identify any healthcare worker infections attributable to early discontinuation of isolation in these patients. **Conclusions:** During the winter COVID-19 second surge in Massachusetts, nearly 1 in 5 hospitalized patients who tested positive for SARS-CoV-2 by RT-PCR were deemed noninfectious and eligible for discontinuation of precautions. Most of these cases were consistent with residual RNA from prior known or undiagnosed infections. Active

Figure 1. Algorithm for evaluating patients with positive SARS-CoV-2 RT-PCR tests for potential discontinuation of transmission-based precautions



*"Resolved" COVID-19 refers to a prior infection for which isolation had previously been discontinued. PCR+ patients with recently diagnosed and unresolved COVID-19 infection were assessed for potential discontinuation of isolation based on time/symptom-based criteria (10 days for asymptomatic or mild infections, or 20 days for severe infections or immunocompromised patients + clinical improvement for symptomatic patients).