

## **UC Irvine**

### **Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health**

#### **Title**

Ultrasound for the Diagnosis of Diverticulitis: A Systematic Review and Meta-analysis

#### **Permalink**

<https://escholarship.org/uc/item/5bk0v2gq>

#### **Journal**

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 20(5.1)

#### **ISSN**

1936-900X

#### **Authors**

Holladay, D  
Fullmer, R  
Peksa, G  
et al.

#### **Publication Date**

2019

#### **Copyright Information**

Copyright 2019 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

## 1 Ultrasound for the Diagnosis of Diverticulitis: A Systematic Review and Meta-analysis

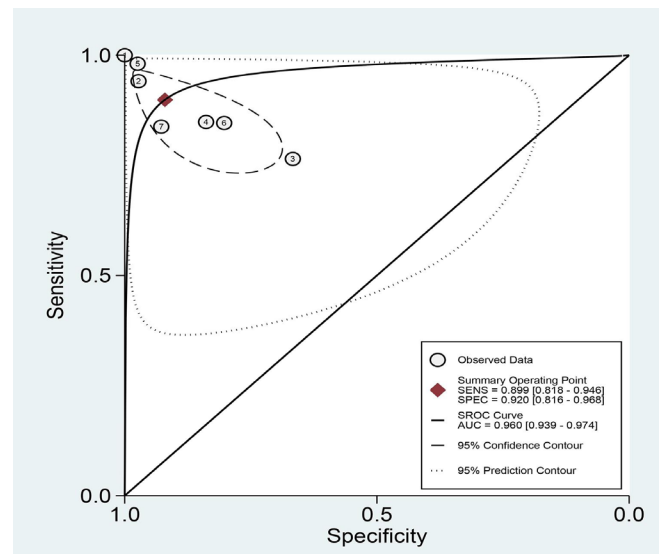
Holladay D<sup>1</sup>, Fullmer R<sup>2</sup>, Peksa G<sup>1</sup>, Gottlieb M<sup>1</sup> / <sup>1</sup>Rush University Medical Center, Chicago IL, USA; <sup>2</sup>Swedish Covenant Hospital, Chicago IL, USA

**Objective:** Diverticulitis is a commonly encountered diagnosis in the emergency department (ED). Computed tomography (CT) of the abdomen and pelvis is the most commonly used imaging modality for diagnosis. However, CT has several disadvantages including radiation, cost, availability, and possible contrast-induced nephropathy. Ultrasound offers a portable, less costly alternative without radiation or contrast.

**Design and Method:** We conducted a search of PubMed, Embase, Scopus, the Cochrane Database of Systematic Reviews, Cochrane Central Register, CINAHL, and LILACS for prospective trials evaluating the accuracy of ultrasound for diverticulitis. Two physician-investigators independently extracted data from the included studies into a pre-designed data collection form. Studies were independently assessed for quality by two separate physician-investigators using the Quality Assessment of Diagnostic Accuracy Studies (QUADAS-2) tool.

**Results:** This systematic review identified seven studies comprising 700 total patients. Overall, ultrasound was found to be 89.9% sensitive (95% confidence interval [CI], 81.8-94.6%) and 92.6% specific (95% CI, 81.6-96.8%) with a positive likelihood ratio of 11.3 (95% CI, 4.4 to 28.6) and a negative likelihood ratio of 0.11 (95% CI, 0.06 to 0.21).

**Conclusion:** This review demonstrates that ultrasound is sensitive and specific for the diagnosis of diverticulitis and may offer an alternative to computed tomography CT. Further studies should be performed in the ED population and by emergency medicine providers.



## 2 Association of Response Time Interval and Good Neurological Outcome According to Bystander Cardiopulmonary Resuscitation

Kim S<sup>1</sup>, Ryoo HW<sup>1</sup>, Ahn JY<sup>1</sup>, Lee JH<sup>1</sup>, Lee DE<sup>1</sup>, Kim JH<sup>2</sup> / <sup>1</sup>Department of Emergency Medicine, Kyungpook National University Hospital, School of Medicine, Kyungpook National University, Daegu, Korea; <sup>2</sup>Department of Emergency Medicine, Yeungnam University College of Medicine, Daegu, Korea.

**Objective:** Response time interval (RTI), which refers to the time between the victim's collapse and a response by emergency medical services (EMS), is crucial in determining the initiation of cardiopulmonary resuscitation (CPR) and subsequent patient outcome. Our goal was to determine the different effects of RTI by bystander CPR on good neurological outcome. We hypothesized that bystander CPR would ensure a good score on the cerebral performance categories (CPC) scale and affect RTI.