

Pediatric Sepsis Program among Children Hospitals in the State of Qatar: Think Sepsis, Save Lives

Ashour R, Labib A, El-Janahi M, Elsiddig S and Ezzeldin A.

Hamad Medical Corporation, Sidra Medicine-Qatar. Weill Cornell Medical College-Qatar

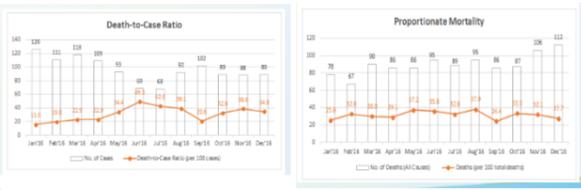


Description

Missing signs of early sepsis in children can result in delayed management, complications, and death. Standardized pediatric sepsis protocol based on electronic early warning system can guarantee early recognition of sepsis, timely management, and proper escalation, improve communication, create a culture of 'think sepsis' and ultimately improve patient outcomes.

The Case to Change

Delayed recognition & treatment initiation were identified as a common challenge in the timely management of children with suspected sepsis. Sharing our national effort in fighting sepsis in all children hospitals in Qatar (7 pediatric Hamad Medical Corporation (HMC) hospitals & Sidra medicine)



HMC sepsis death to case ratio 2016

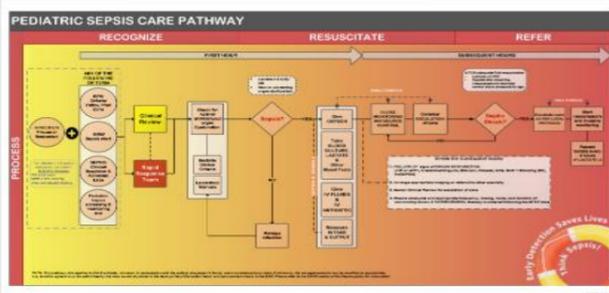
Aim

Early sepsis recognition & timely management through 95% compliance with sepsis 6 bundle in children hospitals by end 2019

Action Taken

- Pediatric sepsis (PS) committee established in 2017 & national Pediatric sepsis program was developed. Sepsis simulation sessions undertaken to fill staff knowledge gaps
- PDSA1: Sepsis watchers concept introduced to daily safety huddle
- PDSA2: Provide standardized PS diagnostic kit
- PDSA3: Unified PS Antibiotics kits created in all units with safe first dose preparation protocol
- PDSA4: ELearning module & education materials

Pediatric Sepsis Care Pathway

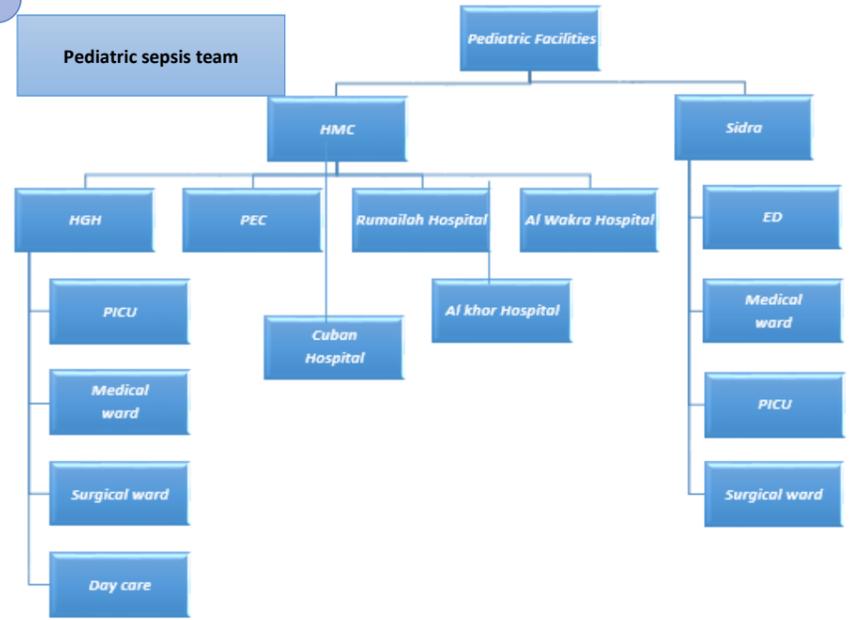


Pediatric sepsis screening

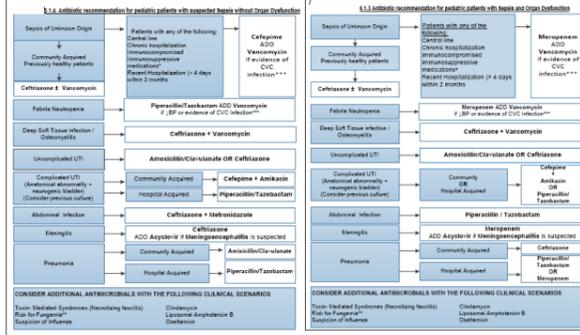
Pediatric Early Warning systems

Pediatric sepsis diagnostic kit

-Dr Mohamed El Janahi, Senior Consultant Pediatric ID chair, Chair-Pediatric Department, hospital sepsis lead
 Dr Ahmed Labib, Senior Consultant MICU and HMC sepsis program lead
 - Dr Rasha Ashour, Senior Consultant Pediatrics, HMC & Sidra, pediatric sepsis program lead
 -Dr Sohair Elsiddig Associate Consultant Pediatrics- HMC
 -Dr Asmaa Ezzeldin, Clinical Pharmacist-HMC
 -Nurse and physician representatives from each pediatric unit in all HMC hospitals & all pediatric



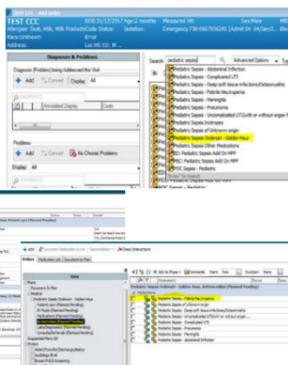
Pediatric sepsis antibiotic algorithm /Age & source



Pediatric sepsis antibiotic kit



Pediatric sepsis - Golden Hour order set



Family education materials



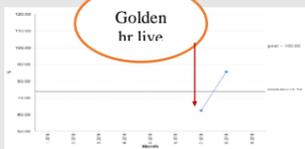
Pediatric sepsis education



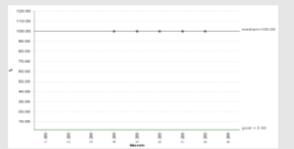
Results

- Well-established electronic pediatric sepsis golden-hour order set (88% initiated order set in HMC-PICU).
- 100% reliable vital signs documentation at HMC-PEC.
- 100% compliance with sepsis6 bundle in Sidra-ED,
- IV antibiotics administered within 60 minutes of time zero 58 % in HMC-PICU, 50% in HMC-medical & 100% in HMC-PEC & Sidra-ED

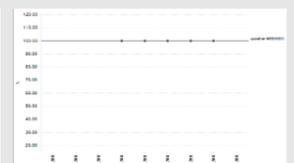
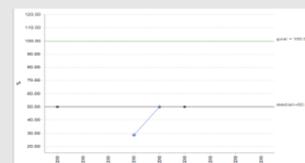
% of sepsis or suspected sepsis patients with a sepsis 6 order set initiated PICU HMC



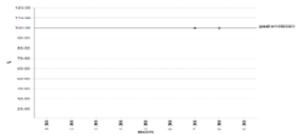
% reliable vital signs documented in HMC-PEC



% patients administered IV antibiotics within 60 minutes of time Zero



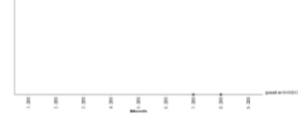
% compliance with the sepsis six bundle ED Sidra



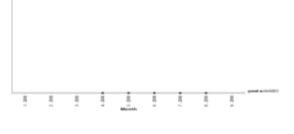
% compliance with watchers – sepsis 6 in daily ward huddle



Sepsis mortality -Sidra ED



Sepsis mortality -PEC HMC



Next steps

- The multidisciplinary paediatric sepsis team meets on regular basis to follow the implementation process in all hospitals and evaluate the performance every three months
- To continue staff education & reminders
- Data collection by well-trained sepsis champions

References :- Davis AL, Carcillo JA, Aneja RK, Deymann AJ, Lin JC, Nguyen TC, et al. American College of Critical Care Medicine Clinical Practice Parameters for Hemodynamic Support of Pediatric and Neonatal Septic Shock. *Critical Care Medicine* 2017; 45(6): 1061-93.
 -Singer M, Deutschman CS, Seymour CW, Shankar-Hari M, Annane D, Bauer M, et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). *JAMA* 2016; 23; 315(8): 801-10.