**TALES FROM THE FIELD: AUGUSTA HEALTH'S AUTOMATED SEPSIS SCREEN SYSTEM**

As part of the hospital's ongoing patient safety efforts, Augusta Health in Fishersville, Virginia established a sepsis task force in 2015 to find ways to reduce sepsis mortality. Augusta Health's multidisciplinary team developed an automated severe sepsis screening system that launched in May 2016 in the hospital's emergency department. The screening system employs an algorithm that analyzes patient clinical data to determine when a patient shows signs of becoming septic. Based on standard sepsis screening measures, an alert is activated when two or more variables (which include body temperature, pulse, respiratory rate, and white blood cell count) register outside of the normal range and one or more variables from an additional group (which includes systolic blood pressure and mean arterial pressure check, lactate level, or creatinine level) fall outside of the normal range. The sepsis mortality rate rises by 8% per hour delay in treatment, so the algorithm automatically runs every 15 minutes. When the parameters trigger an alert, a secure text is delivered directly to the ED charge nurse's cell phone. If the patient is determined to be septic after an assessment, the charge nurse alerts the entire hospital via an overhead communication. The house supervisor, a phlebotomist, and a pharmacist respond to the page by going to the ED and assisting with lab work, rapid administration of antibiotics, and documentation.

Augusta Health's sepsis mortality rate has dropped by 36% since the launch of the automated alert system. In addition, Augusta Health has decreased its readmission rate for patients with sepsis from 19% to 13%. Based on the alert's success in the ED, Augusta Health rolled out the automated sepsis alert system to its inpatient units in September 2017.

Key Takeaways:

* Leadership buy-in was a significant component of success.
* Have a physician champion to assist in staff buy-in and spread of new interventions and technologies.
* Alert systems can be "home grown" without specialized software programs, new hardware, or specialized devices.

To learn more about Augusta Health's automated severe sepsis screening system please read the Members in Action case study from The AHA Value Initiative [here](http://send.aha.org/link.cfm?r=g_idxxfTHAzw4e-AgdbEAA~~&pe=akTXnjUlyh9M4XQHfn5A6x7qfWq_MXoy0JI01MD8DSJu8xgFIQcZIpMdUuHHZj1-vBrhZBEbaMvYG2jA5I3N3Q~~&t=28r3yrh8Z744eWlJcmYDrw~~).

Optimal sepsis care and patient outcomes are tied to early identification and treatment.  Improvement strategies are numerous and a recent article in the American Journal of Medical Quality, *Effect of Audit and Feedback on Physician Adherence to Clinical Practice Guidelines for Pneumonia and Sepsis,* discusses an additional approach. The link to the abstract is [here](https://journals.sagepub.com/doi/abs/10.1177/1062860618796947).

Physicians in the study were randomly divided into six groups. Each group in turn became the intervention group in which they were given detailed feedback with blinded peer comparison. This strategy improved adherence. The authors state that “Feedback with blinded peer comparison significantly improved guideline adherence from 52% without feedback to 65% with feedback (difference = 13%, 95% confidence interval = 4% to 22%).”

Layering multiple strategies likely is the key to maximizing sepsis care and improving outcomes.

Don’t forget **feedback** as a critical strategy!

Do you provide feedback to the care team of your sepsis patients?

These are the key points from the literature:

1. Early screening/alerts
	1. EMS sepsis alerts
	2. Triage-based screening
	3. Routine scheduled screening of inpatients
		1. Manual screen built into rounding/assessment process
		2. Electronic surveillance of lab results and vital signs that creates alert
2. Timely response to alerts
	1. A rapid response team with sepsis protocols
	2. A sepsis response team with protocols
	3. A sepsis response team that includes a PA/ARNP/DO/MD, intensivist focused
3. Bundle compliance
	1. Sepsis Coordinator that keeps treatment team on track
		1. Follow up on lab, fluid and antibiotic orders
		2. Coordinates care of interdisciplinary team to include discharge planning and patient/family education
		3. Data analysis
		4. Track and trend issues
		5. Works with PI/QI to facilitate improvement through interdisciplinary team/committee
		6. Facilitates community awareness programs

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HRET HIIN has released a new resource, the Sepsis Readmissions Fishbowl Lessons Learned Report. It can be found [here](http://www.hret-hiin.org/resources/display/sepsis-readmissions-lessons-learned-report).

Between April and August 2018, the reducing sepsis readmissions fishbowl series followed five different hospitals across the HRET HIIN in their reduction journey. Review this resource for the key takeaways from the fishbowl. Some learnings include develop a care transition plan with community partners, refine patient education material, know and understand hospital data, and join your community coalition efforts.

HRET HIIN would like to thank the participating hospitals on their hard work and dedication to improvement:

* Anne Arundel Medical Center- Annapolis, MD
* Research Medical Center- Kansas City, MO
* Ransom Memorial Health- Ottawa, KS
* CalvertHealth Medical Center- Prince Frederick, MD
* Sky Ridge Medical Center- Lone Tree, CO

Be sure to access other readmissions related resources on the [HRET HIIN Readmissions](http://www.hret-hiin.org/topics/readmissions.shtml) page.

**New report shows significant national progress is slowing, causing concern**

CDC's [*Vital Signs*](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDAiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjUyOTI2Mjc0NSIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL3d3dy5jZGMuZ292L3ZpdGFsc2lnbnMvc3RhcGgvaW5kZXguaHRtbCIsImJ1bGxldGluX2lkIjoiMjAxOTAzMDUuMjY3MDUwMSJ9.2gde9zezhY26DitifrfxAZBKTVkhlL2TwNN0vulxAIs) reports today that more than 119,000 people suffered from bloodstream Staphylococcus aureus (staph) infections in the United States in 2017—and nearly 20,000 died. The report underscores that both types of S. aureus (methicillin-resistant or MRSA, and methicillin-susceptible or MSSA) can be deadly.

Staph is a type of germ often found on human skin and on surfaces and objects that touch the skin. While the germ does not always harm people, it can get into the bloodstream and cause serious infections, which can lead to sepsis or death.

[Today's findings](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDEiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjUyOTI2Mjc1NyIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL3d3dy5jZGMuZ292L21td3Ivdm9sdW1lcy82OC93ci9tbTY4MDllMS5odG0_c19jaWQ9bW02ODA5ZTFfdyIsImJ1bGxldGluX2lkIjoiMjAxOTAzMDUuMjY3MDUwMSJ9.vZg7eq7gqPuhc6U7c4OTnfaXUg_7ajlm88PzqwD1uJU) show that hospital infection control efforts successfully reduced rates of serious staph infections in the U.S. (about 17% each year 2005-2012). Recent data, however, show that this success is slowing and the rise in staph infections in the community may be linked to the opioid crisis.

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| Progress is slowing but success is possible. |

**The risk for serious staph infection is greatest when people:**

* Stay in healthcare facilities or have surgery.
* Have medical devices placed in their body.
* Inject drugs such as opioids.
* Come into close contact with someone who has staph.

Many hospitals, including Veterans Affairs (VA) Medical Centers, have successfully prevented staph infections and spread. [The VA reduced staph infections](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDMiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjUyOTI2Mjc3MyIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL3d3dy5jZGMuZ292L21td3Ivdm9sdW1lcy82OC93ci9tbTY4MDllMi5odG0_c19jaWQ9bW02ODA5ZTJfdyIsImJ1bGxldGluX2lkIjoiMjAxOTAzMDUuMjY3MDUwMSJ9.xfdc5MT9fuJOnbZUd5jxI3yQ_4-aYER0N0XDRtYEBfU) by implementing a multifaceted prevention program that included MRSA screening, use of Contact Precautions (gloves and gowns), and an increased emphasis on hand hygiene.

**Healthcare providers and administrators can protect patients:**

* Make staph prevention a priority.
* Follow CDC recommendations, including Contact Precautions, to prevent spread of staph.
* Consider additional interventions, like screening or decolonizing high-risk patients, if not meeting infection reduction goals.
* Treat infections appropriately and rapidly if they do occur.
* Educate patients about ways to avoid infection and spread, and about early signs of sepsis.

**Not a healthcare provider?** You can protect yourself and your family from staph infections, too: Keep your hands clean, cover wounds, avoid sharing items that contact skin (e.g., towels, razors), and watch for signs of infections (e.g., red, warm, painful skin).

**Learn more:**

* **CDC continues to recommend Contact Precautions** [for patients carrying or infected with resistant staph](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDQiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjUyOTI2Mjc3NyIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL3d3dy5jZGMuZ292L21yc2EvaGVhbHRoY2FyZS9pbnBhdGllbnQuaHRtbCIsImJ1bGxldGluX2lkIjoiMjAxOTAzMDUuMjY3MDUwMSJ9.fbvJF5utzN2FZywJNSFUNwwE6-VCUlK9ARPFAbsSRx0).
* **New healthcare resource:** [Strategies to Prevent Hospital-onset Staphylococcus aureus Bloodstream Infections in Acute Care Facilities](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDUiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjUyOTI2Mjc4MSIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL3d3dy5jZGMuZ292L2hhaS9wcmV2ZW50L3N0YXBoLXByZXZlbnRpb24tc3RyYXRlZ2llcy5odG1sIiwiYnVsbGV0aW5faWQiOiIyMDE5MDMwNS4yNjcwNTAxIn0.drVoMb_5wZBeDYAsK0NfrpyQ4AH2Fn7T3LEeHyHJiwc).
* **New data on USA100 and USA300 strains:** [Trends in incidence of methicillin-resistant Staphylococcus aureus bloodstream infections differ by strain type and healthcare exposure, United States, 2005–2013](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDYiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjUyOTI2Mjc4OSIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL2FjYWRlbWljLm91cC5jb20vY2lkL2FkdmFuY2UtYXJ0aWNsZS9kb2kvMTAuMTA5My9jaWQvY2l6MTU4LzUzNjQ1NTAiLCJidWxsZXRpbl9pZCI6IjIwMTkwMzA1LjI2NzA1MDEifQ.rIs1N-Zp_2aqCKEi_UNHpUDaF4iVc-DsxgFFi2dY3UU).
* **What is sepsis?** [Learn more about sepsis, the body’s extreme response to an infection](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDciLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjI0NzIwMDkyNyIsInVyaSI6ImJwMjpkaWdlc3QiLCJ1cmwiOiJodHRwczovL3d3dy5jZGMuZ292L3NlcHNpcy9pbmRleC5odG1sIiwiYnVsbGV0aW5faWQiOiIyMDE5MDMwNS4yNjcwNTAxIn0.6xSXxrwU1x0beDlMn6ADMabeGUSAZjWfjV56cn_Paqg).
* **Have more questions?** Tune in to [CDC’s Facebook page](https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImtpbXNAZmhhLm9yZyIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDgiLCJzdWJzY3JpYmVyX2lkIjoiNTE1ODkwNDA0IiwibGlua19pZCI6IjQ5NTE1NjQ5IiwidXJpIjoiYnAyOmRpZ2VzdCIsInVybCI6Imh0dHBzOi8vd3d3LmZhY2Vib29rLmNvbS9DREMvIiwiYnVsbGV0aW5faWQiOiIyMDE5MDMwNS4yNjcwNTAxIn0.DP9oM2cDiXgC_JQBuYsskL7pi_-QGTc3g34WRugzmEY) for a Facebook Live on March 26 with experts talking about how to protect yourself and your family from staph.

 .  While this is much more comprehensive and formal than what we are talking about, it does give us some ideas to think about.

<https://www.childrenshospitals.org/Programs-and-Services/Quality-Improvement-and-Measurement/Collaboratives/Sepsis/Sepsis-Collaborative-Enrollment>

Hello Jennifer!

Although I do not have Sepsis FAST team information, I do have some education that every hospital can reach out to their Emergency Medical Systems to help educate their EMS providers on early identification and communication to the receiving hospital.

If you are interested in engaging your EMS providers and uniting to educate EMS on early identification of Sepsis in the field, I want to share these tools, resources, and specific trainings on our website:

<https://greatplainsqin.org/initiatives/sepsis/>

Here is a direct link to our EMS Sepsis Training Modules (4 modules):

<https://learning.greatplainsqin.org/course/index.php?categoryid=2>