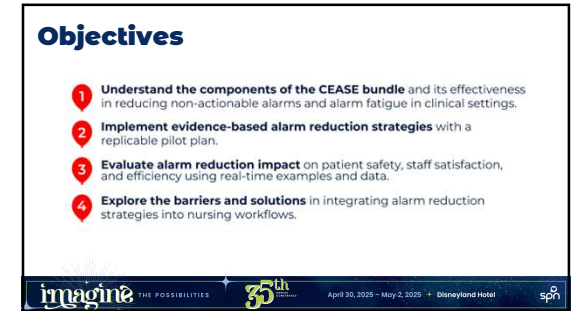




1



2



3

Top Pediatric Health System



More than 150-year history providing care to children from birth to adulthood.

Nearly 3,000 nurses across the system.

Two world-class hospitals (488 licensed beds in Dallas, 212 in El Paso) and 60 locations offering specialty care in North Texas.

Magnet Recognized, first achieved in 2009, with redesignations in 2013, 2018, and 2023.

More than 10,000 team members care for more than 300,000 children a year.

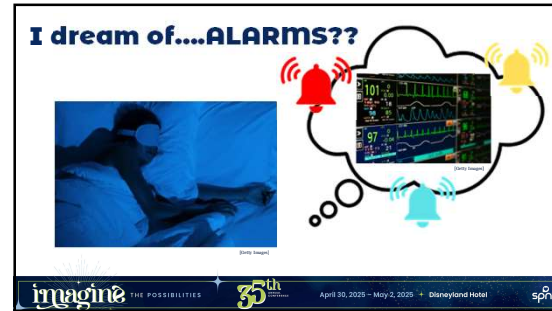
Two academic research partners and joint pediatric enterprise affiliation to UT Southwestern Medical Center.

children'shealth.org

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

4

I dream of....ALARMS??




imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

5

Sound Off: we want to hear from you

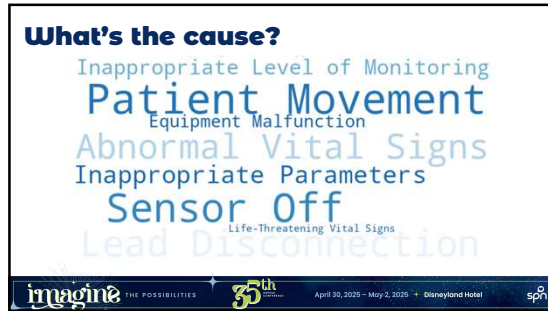
- Adapted from Healthcare Technology Foundation Clinical Alarms Survey (2023)
- "Actionable alarms" = real change that requires clinical intervention
- "Non-actionable alarms" = alarms that do not indicate a real change that requires clinical intervention to resolve



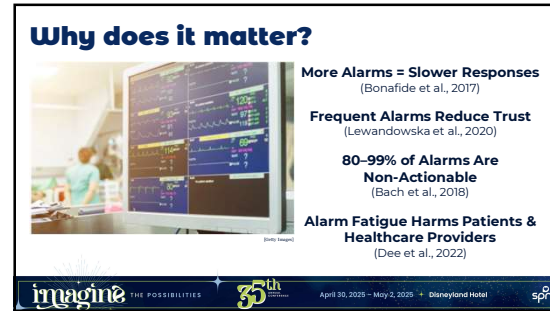
Anonymous SPN Alarm Management Survey

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

6



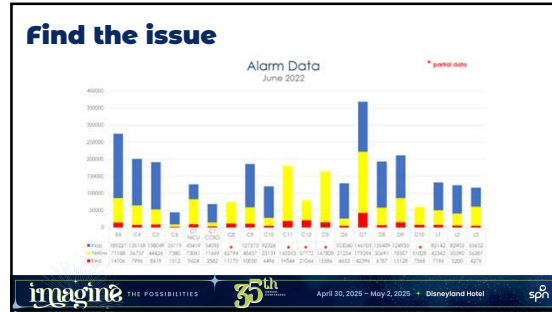
7



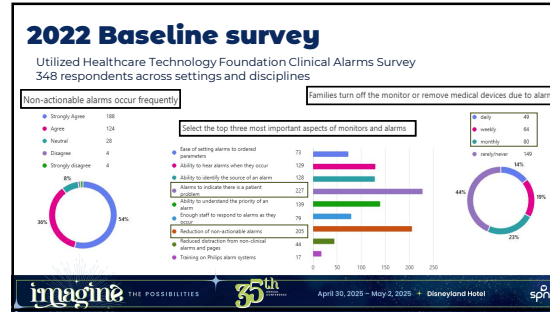
8



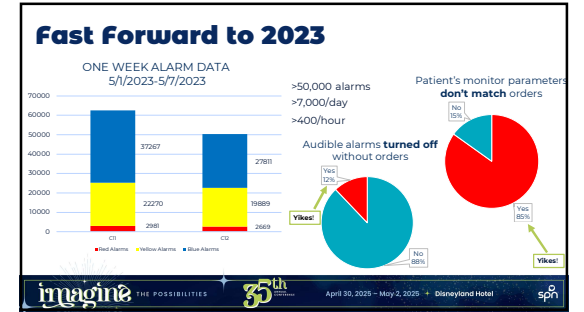
9



10




11



12

Practice Problem

Too many alarms → Ineffective alarm management → Alarm fatigue → Critical alarms missed → Patient safety at risk
 Non-compliance with policy → Nursing licenses at risk




RISK

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

13

PICO

In a pediatric intensive care unit, will implementing a nurse-led alarm management bundle, compared to the current practice, affect perceived alarm fatigue and overall alarm burden?




imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn


14

Literature Review


SEARCH STRATEGY



DATABASES:
OVID, CINAHL,
MEDLINE, PUBMED



SEARCH TERMS:
"ALARM FATIGUE",
"ALARM
MANAGEMENT",
"ALARM REDUCTION",
"NON-ACTIONABLE
ALARMS", "ALARM
SAFETY"



44 JOURNAL
ARTICLES
REVIEWED;
14 WITH RELEVANT
EVIDENCE

RECOMMENDATIONS

- Nurse-led alarm management strategies have been effective in reducing alarm fatigue
- Healthcare teams need education on the dangers of alarm fatigue
- Bundled approaches to safety can be more effective than a single intervention

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

15

Key Finding

CEASE BUNDLE
An Innovative, Nurse-Driven, Evidence-Based, Patient-Customized Monitoring Bundle to Decrease Alarm Fatigue in the Intensive Care Unit (Lewis & Oster, 2019)

- Communication
- Electrodes
- Appropriateness
- Set up Customized Alarms
- Education

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

16

Pilot Plan


Pre-Pilot Survey

Education Sessions

5-Day CEASE Implementation

Post-Pilot Survey

Monitor Data Pull



imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

17

Pre-Pilot Data Survey Themes

"You get numb—it's like the boy who cried wolf when 90% of alarms aren't real." –PICU RN

ALARM FATIGUE IN THEIR WORDS

- 81% of responses described tuning out alarms – e.g., "ignore," "block it out," "like white noise in the background."

BARRIERS TO ALARM MANAGEMENT

- 100% of responses mentioned providers, orders, or inappropriate parameters

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

18

Educational Strategies

PILOT PRO TIP: ENGAGE STAFF WHERE THEY ALREADY ARE!

- RN Staff Meetings
- Provider Staff Meetings
- Show the data
- Show the literature




(Shelly Bergard)

imagine THE POSSIBILITIES **35th** April 30, 2025 - May 2, 2025 + Disneyland Hotel **spn**

19


CEASE Bundle Implementation

Were you able to communicate to colleagues about suspending patient alarms when providing care that may produce false alarms? 72% YES	Have the ECG leads been changed in the last 24 hours? 98% YES Does your patient have the correct pulse ox size and placement? 97% YES	Did you discuss the appropriate monitoring level and parameters during rounds? 48% YES Are they clinically indicated for your patient? 92% YES
Did you need to set custom alarm parameters for the patient's current condition? 23% YES Were they successfully changed? 63% YES	Do you have any further educational needs regarding the CEASE Bundle or Alarm Management? 10% YES	N = 60 

imagine THE POSSIBILITIES **35th** April 30, 2025 - May 2, 2025 + Disneyland Hotel **spn**

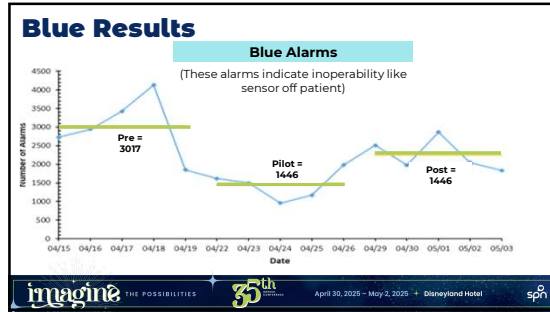
20

spn SOCIETY OF PEDIATRIC NURSES

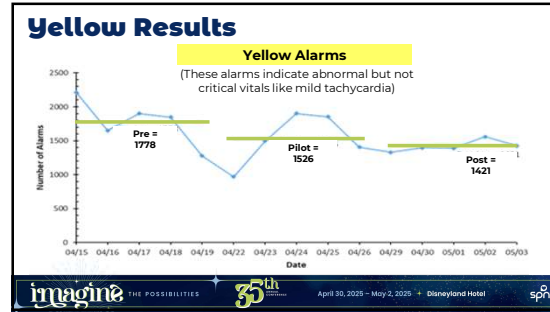


Findings

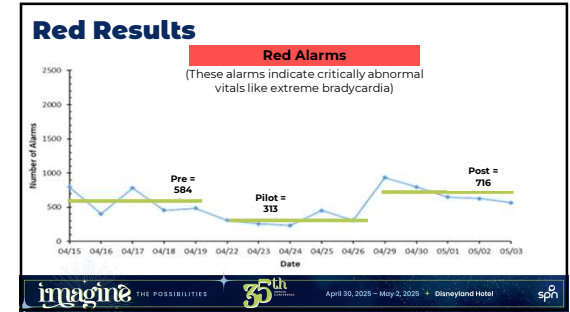
21




22



23



24



SOCIETY OF
PEDIATRIC NURSES

44% reduction in overall alarms

52% reduction in blue alarms

14% reduction in yellow alarms

46% reduction in red alarms

5000+ alarms → ~3000 alarms

25


Pre/Post Alarm Fatigue Survey

Subset of questions taken from Healthcare Technology Foundation Clinical Alarms Survey


SPSS data analysis software

Utilized Shapiro-Wilk test of normality


Then non-parametric Mann-Whitney U test




THE POSSIBILITIES



April 30, 2025 - May 2, 2025




Disneyland Hotel




26

Findings (Alarm Fatigue Survey)


Question	Median		Mean Rank		U	Z	p-value
	Pre	Post	Pre	Post			
Non-actionable alarms occur frequently	5	5	51.64	47.55	548	-1.05	0.29
Patient care is being disrupted by non-actionable alarms	4	4	49.58	47.91	824	-0.68	0.50
Non-actionable alarms reduce trust in alarms	5	5	49.54	48.25	884.5	-1.44	0.15
There have been frequent instances where alarms could not be heard and missed	4	3	49.02	47.99	832	-0.83	0.41
Families often complain about alarms going off that are not quickly addressed	4	4	51.45	48.95	887.5	-1.09	0.28
There have been instances where families turn off, silence the number, or remove medical devices due to alarms	4	4	51.79	49.50	879	-1.89	0.06
In our current state, emergency alarms follow in the patient care setting	4	4	49.34	47.66	821	-1.25	0.21




THE POSSIBILITIES



April 30, 2025 - May 2, 2025



Disneyland Hotel



27

Successes

- Nurses wanted change
- Supported that nurse led bundle was effective
- System-wide Alarm Fatigue Task Force supporting alarm work

"It's nice to come into customized vital signs. I don't often see that. I feel like this project is working!"

"Glad we are working on a change!"

"I strongly believe alarm limits should be customized. I appreciate the hospital addressing alarm fatigue!"

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

28

Limitations

- Short pilot window
- Culture
- Widespread non-compliance
- System limitations

Patient's monitor parameters don't match orders

Audible alarms turned off without orders

NO 36% YES 64%

NO 60% YES 40%

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn

29

So what has happened since then?


PILOT REPEATED ON INPATIENT PULMONARY UNIT 9/2024

Question	Median		Mean Rank		U	Z	p-value
	Pre	Post	Pre	Post			
For every of the policies and procedures within the facility to regulate alarms	4	4	19.42	18.13	135.1	-0.45	0.647
The purpose of clinical alarms is to alert staff of a potentially life-threatening change in a condition	5	5	18.04	19.23	146.0	-0.16	0.875
Non-actionable alarms occur frequently	3	4	20.22	16.46	119.3	-1.11	0.268
Patient care is being disrupted by non-actionable alarms	4	4	19.56	17.21	125.1	-0.75	0.454
Non-actionable alarms reduce trust in alarms	3	3	18.96	19.04	149.3	-0.02	0.980
There have been frequent instances where alarms could not be heard and tested	4	3	20.90	19.04	103.1	-1.61	0.108
Families often complain about alarms going off that are not quickly addressed	4	4	17.94	21.31	123.1	-0.92	0.356
There have been instances where families turn off, silence the monitors or remove medical devices due to alarms	4	4	20.08	14.75	123.0	-1.04	0.299
In our current state, I experience alarm fatigue in the patient care setting	5	4.5	18.88	19.25	147.0	-0.11	0.912

imagine THE POSSIBILITIES 35th April 30, 2025 - May 2, 2025 + Disneyland Hotel spn


30

System changes 12/2024




New vitals parameters

Stopped using Harriet Lane parameters and started using the American Heart Association (AHA) parameters






Notify provider orders

Default notify provider orders changed to match the AHA parameters
PLUS separate wider default limits for monitoring

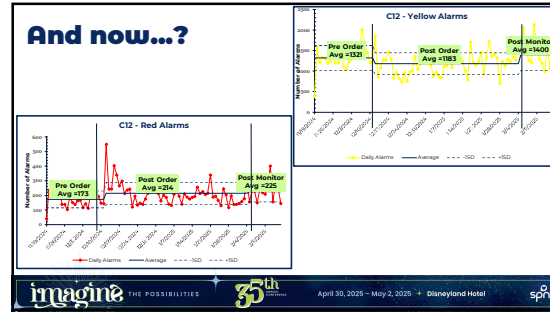


Monitoring profiles

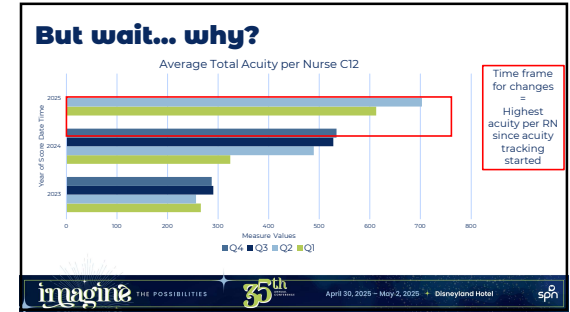
Monitor parameters wider than the notify provider parameters
Completed over months



April 30, 2025 - May 2, 2025 + Disneyland Hotel


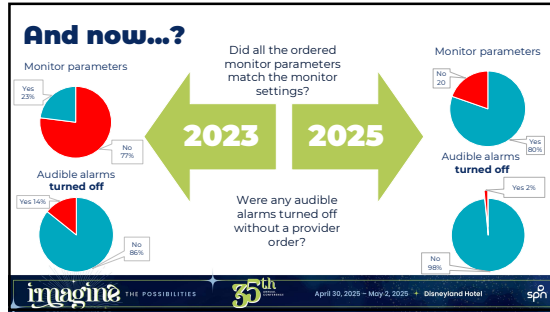
31



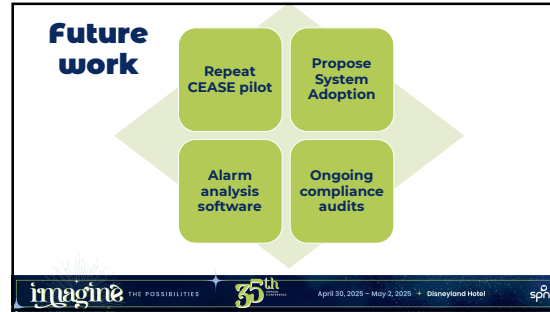
32



33



34



35

spn SOCIETY OF PEDIATRIC NURSES

Let's Connect!

Share Your Insight: Pediatric Alarm Benchmarking Survey

Annie.Tolliver@childrens.com
Christina.Smith@childrens.com

36
