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Newborn Screening Hot Topic Webinar Series: Building More Resilient Newborn Screening Systems

April 7, 2021

2:00 pm - 3:00 pm ET

This webinar will be recorded and available at newsteps.org

PRESENTERS AND GUESTS

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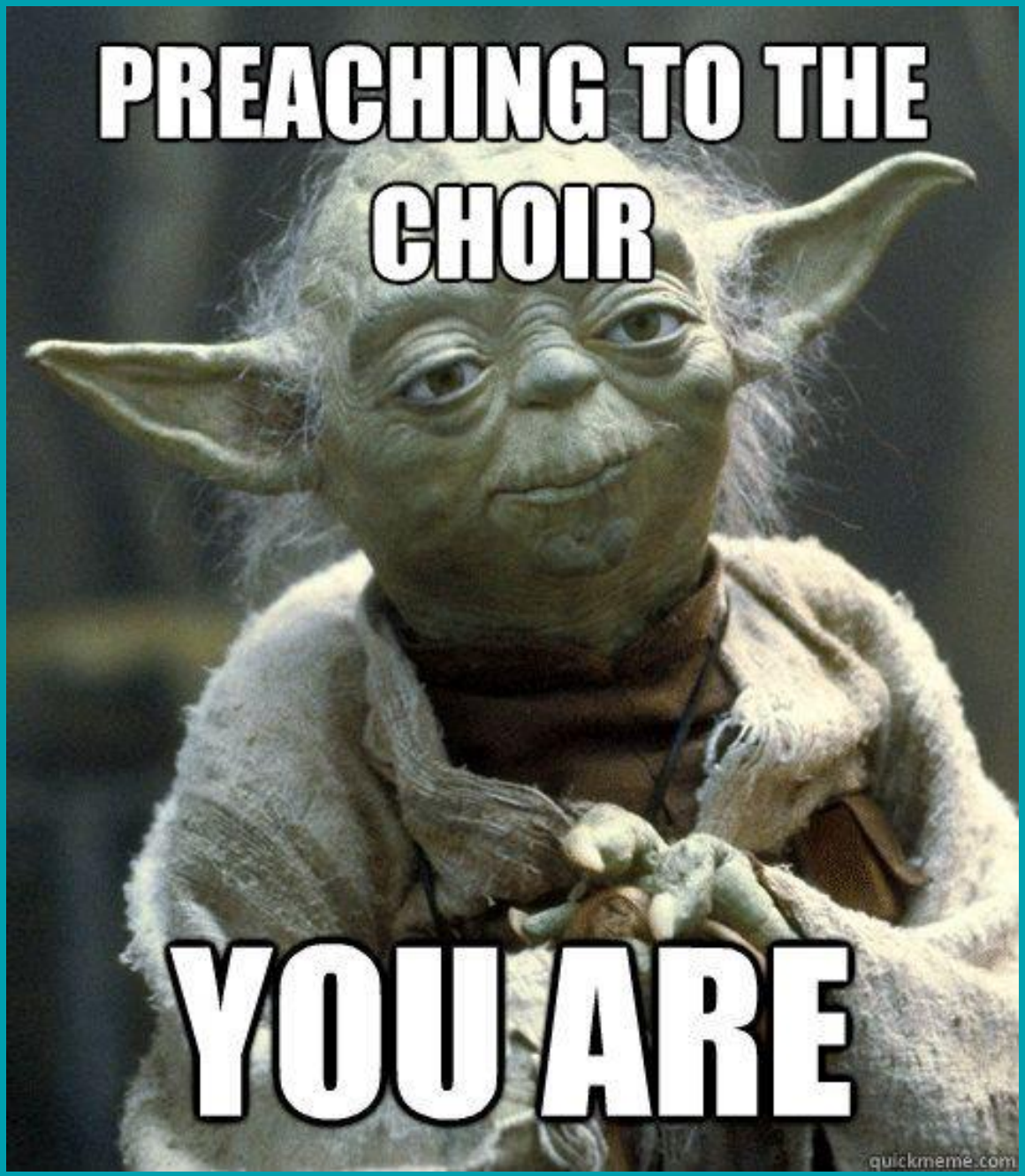
TODAY'S OBJECTIVE

- Acknowledge that the impact of the COVID-19 pandemic on resources and staffing has made sustaining newborn screening (NBS) operations increasingly challenging for many programs across the country.

- Discuss resources and capabilities needed to build more resilient newborn screening systems.

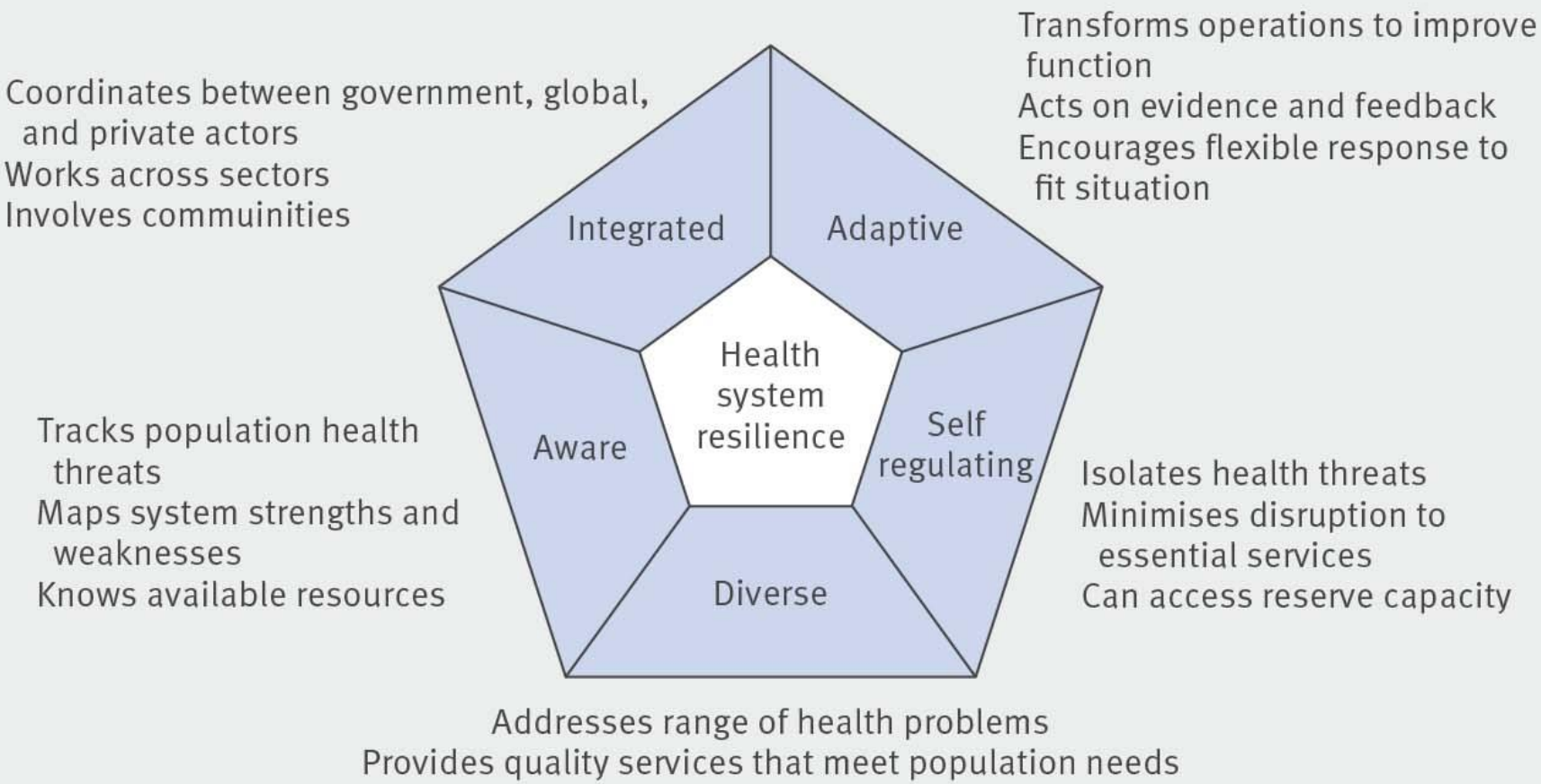
- Share strategies for building more resilient newborn screening systems.


PREACHING TO THE CHOIR
YOU ARE
quickmeme.com

DISCUSSION QUESTION:

What resources or capabilities are needed today to ensure the resilience of your newborn screening program tomorrow?

KEY ELEMENTS OF HEALTH SYSTEM RESILIENCE (Kruk)



Kruk M E, Ling E J, Bitton A, Cammett M, Cavanaugh K, Chopra M et al. Building resilient health systems: a proposal for a resilience index BMJ 2017; 357 :j2323 doi:10.1136/bmj.j2323

STRATEGIES FOR BUILDING MORE RESILIENT NEWBORN SCREENING SYSTEMS

Aware

- Process Mapping
- Gemba Walks
- Staff Surveys and Questionnaires

Diverse

- Cross-training

Adaptive

- Continuity of Operations (COOP)

Self-regulating

- Automation
- Poka-Yoke

Integrated

- Resource support and sharing
- Lessons learned

AWARE

To ensure resilience of newborn screening programs it is critical to be **aware** of a program's processes and workflows in order to understand it's strengths and weaknesses, available resources and all stakeholders involved (including lab, follow-up, couriers, birthing facilities, hospitals, patients, families, suppliers/vendors, etc.).

Useful tools include:

- process mapping – visually outlines the flow of processes, work and systems.

- gemba walks/process walk – opportunity to experience a workflow, process or system in real time (current state).

- surveys and questionnaires – useful for identifying pain points and trends.

Key elements of a gemba walk

observe, don't correct
Not meant to be a corrective exercise

value add activities
What is working about this process?

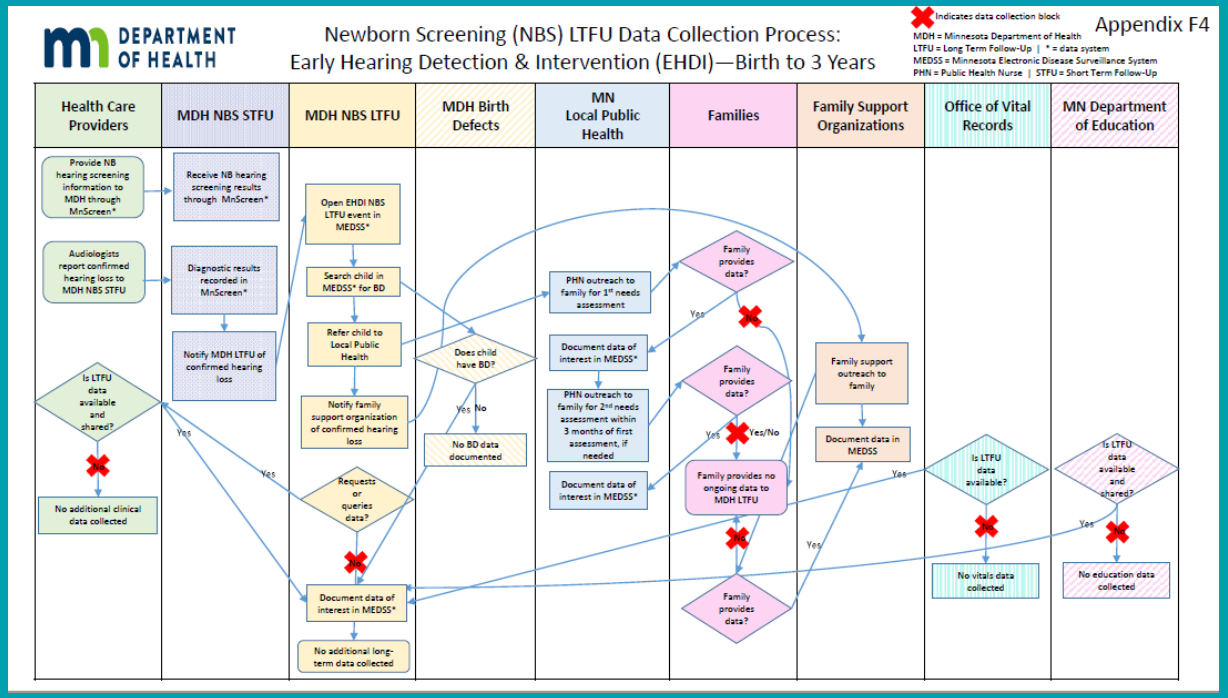
innovate and improve conditions, tools, and procedures
Remove the elements that are detrimental to production

seek to understand
Why is it this way?

subtracting value
Where are you losing value in the existing process? Why?

Be Intentional
Don't Correct
Seek to understand

A Swimlane Diagram – type of process map



DIVERSE

Ensure staff have **diverse** skill sets through cross-training so that newborn screening programs may continue to provide quality service to meet population needs during an emergency or a crisis. Cross-training should:

- be more than an expectation but a requirement (job descriptions, new hire orientation)
- clearly communicate the benefits (What's In It For Me – WIIFM)

In newborn screening:

- What does a successful cross-training program look like?
- What are your current challenges to cross-training?
- How is cross-training perceived by staff?

ADAPTIVE

To ensure resilience during a crisis or emergency newborn screening programs must be **adaptive** and responsive to diverse situations. This is accomplished through continuity of operations planning (COOP).

It is not enough to simply have a COOP but programs must also be able to implement the COOP when real emergencies happen. Consider:

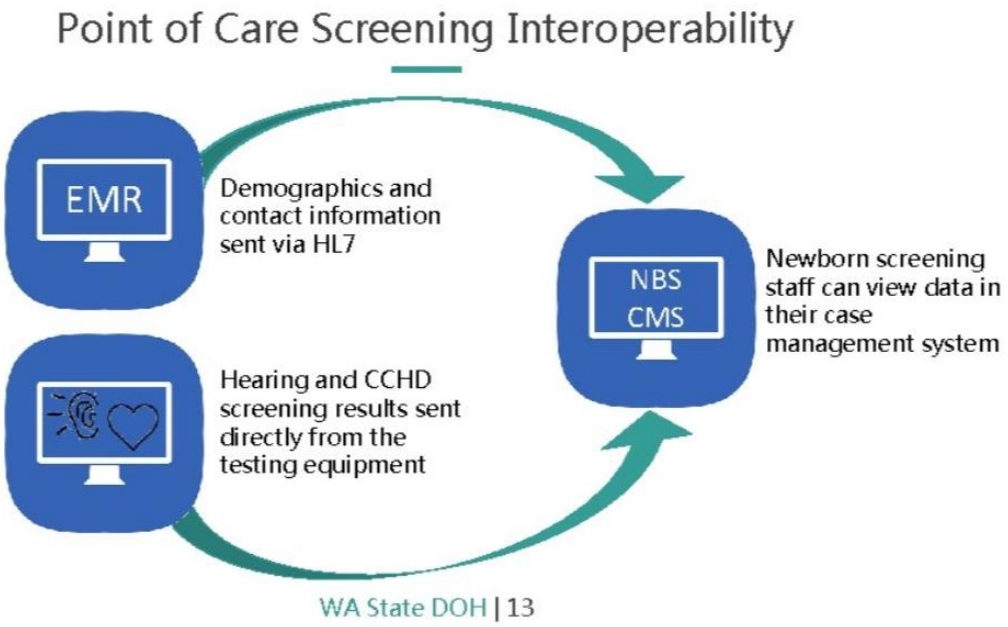
- taking a continuous quality improvement approach to COOP. Use the Plan-Do-Study-Act (PDSA) cycle to test and continuously improve upon your programs COOP.

- debriefs/“hot washes” to discuss lessons learned after real emergencies.
  - Since the start of the COVID-19 pandemic have you looked at your COOP? What changes if any need to be made?

SELF-REGULATING

A **self-regulating system** is essential to minimizing disruption to essential services during an emergency or crisis situation. One approach to this is through the automation of :

- workflows
- ordering and reporting
- patient outreach
- education and training
- software/system updates



Another approach is through poka-yoke.

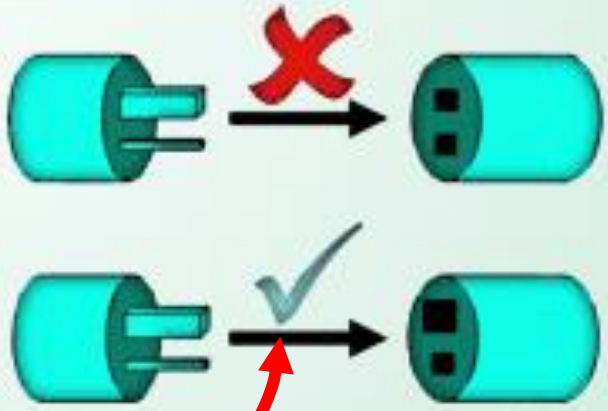
“Poka-yoke is a method for taking steps to mistake proof a process. It is a foundational tool of both Lean, which targets waste, and Six Sigma, which focuses on defects, with a goal of eliminating every mistake by creating systems that either immediately prevent or detect them.”

“Poka-yoke reduces the waste caused by defects, which can help improve efficiency and save costs in rework or additional processing.”

Source: https://www.villanovau.com/resources/six-sigma/what-is-poka-yoke/

Poka Yoke (Error Proofing) Examples

Visual Control



Visual Aids

Fail-Safes

Rules For Poka-Yoke:

- Try not to spend
- Simpler is better
- Don’t make them optional
- Don’t confuse gauges with mistake proofing
- No decision making

Where to apply Poka-Yoke:

- Administrative tasks
- Documentation
- Laboratory techniques and SOPs
- Data dashboards
- Reporting

Source: https://www.velaction.com/definition-poka-yoke/

INTEGRATED

Lastly, to ensure the resilience of newborn screening programs, remove silos and coordinate with and work alongside other NBS programs, partners, agencies and other public health laboratory programs and departments.

In the case of a crisis or emergency **integration** across sectors provides opportunities for:

- resource sharing and resource support
- diverse perspectives on lessons learned and best practices

Lessons Learned From Other Public Health Laboratory Programs

1. **What strategies would you recommend for developing more resilient public health laboratories?**
   - Allow flexible work schedules that are mutually beneficial for operations and staff
   - Do cross-training
   - Review position needs

2. **What CQI tools (Lean, six sigma, etc.) have you applied and found beneficial to developing more resilient public health laboratories?**
   - Waste walk/workflow optimization and process mapping
   - Operational and Key Performance Indicator dashboards to establish baselines, set goals and identify areas for improvement.
   - Kaizen boards. Consider a giant whiteboard focused on improvement projects and place it in a public space such as a cafeteria.
   - Lean supply management
   - 5S to organize work/lab areas

3. **How has your lab responded to resource and staffing challenges (shortages) as a result of the pandemic?**
   - Standardize work. Get staff to do the same steps for a certain process (no personalized flair). This enables other staff be able to jump in at anytime.
     - Cheat sheet of SOP next to the laboratory area where the process is being done.
     - Assigned roles, with associated tasks. No job gets left behind.
   - Identify tasks that can be assembly-lined. Where can non-certified people step in to help?

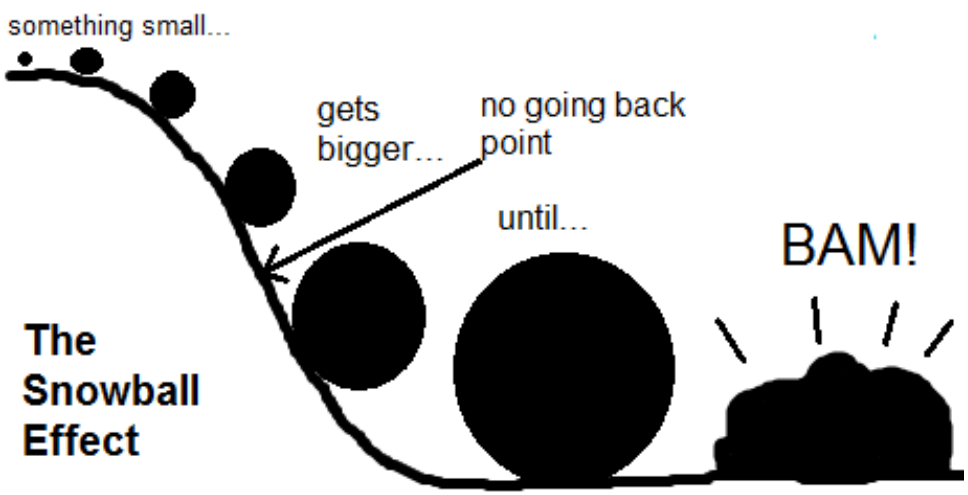
Lessons Learned From Other Industries

- Airline Industry
  - Very strong safety culture
  - Improving patient safety and reducing hospital errors
  - Article: A simple checklist that saves lives

- Fast Food Industry
  - Fast, efficient and effective
  - Example: The application of Chick-fil-A's workflow process helped improve a South Carolina drive-thru coronavirus vaccine clinic (CNN)

KEEP IN MIND…

Small changes eventually add up to huge results.



TECHNICAL ASSISTANCE AND SUPPORT

Technical assistance and support is available to **ALL** newborn screening programs interested in implementing the following activities :

- Process Mapping
- Gemba Walks
- Survey design and implementation
- Poka-Yoke
- Plan-Do-Study-Act
- Application of other six sigma, lean and/or CQI tools

Please email Chenelle Norman at Chenelle.norman@aphl.org.