

Slide 1



COFFEE BREAKS 2019:
ENHANCING STROKE SYSTEMS OF CARE
THROUGH EVIDENCE-INFORMED STATE
POLICY INTERVENTIONS

CENTERS FOR DISEASE CONTROL AND PREVENTION



Aunima Bhuiya, BSc | Applied Research and Translation Team
February 12, 2019

NATIONAL CENTER FOR CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION



DIVISION FOR HEART DISEASE AND STROKE PREVENTION

MODERATOR:

Welcome to today's Coffee Break presented by the Applied Research and Evaluation Branch in the Division for Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention.

We are fortunate to have **Aunima Bhuiya** as today's presenter. She is an ORISE Fellow from the CDC's Division for Heart Disease and Stroke Prevention and sits on the **Applied Research and Translation Team**.

My name is **Lauren Taylor** and I am today's moderator. I am also on the Applied Research and Translation team within the **Applied Research and Evaluation Branch**.

Slide 2

BEFORE WE BEGIN...

- All phones have been placed in SILENT mode.
- Any issues or questions?
 - Use Q & A box on your screen
 - Email AREBheartinfo@cdc.gov



MODERATOR:

Before we begin we have a few housekeeping items.

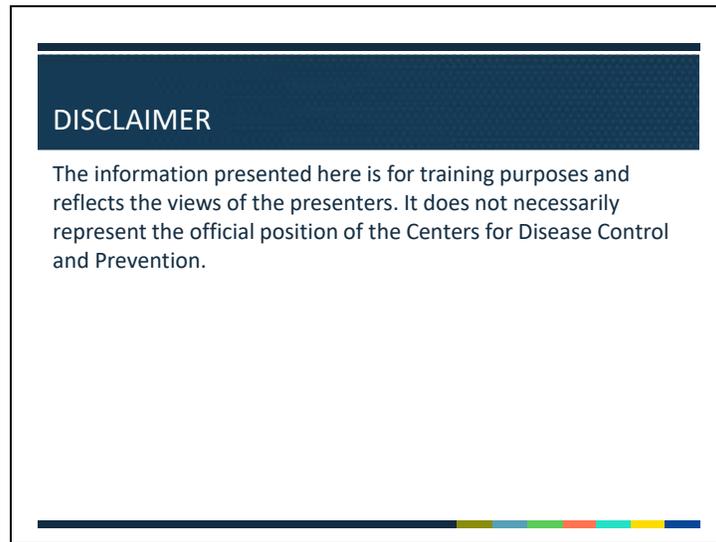
All participants have been muted. However, to improve audio quality please mute your phones and microphones.

If you are having issues with audio or seeing the presentation, please message us using the chat box or send us an email at AREBheartinfo@cdc.gov

If you have questions during the presentation, please enter it on the chat box on your screen. We will address your questions at the end of the session.

Since this is a training series on applied research and evaluation, we hope you will complete the poll at the end of the presentation and provide us with your feedback.

Slide 3



DISCLAIMER

The information presented here is for training purposes and reflects the views of the presenters. It does not necessarily represent the official position of the Centers for Disease Control and Prevention.

MODERATOR:

The information presented here is for training purposes and reflects the views of the presenters. It does not necessarily represent the official position of the Centers for Disease Control and Prevention.

So, without further delay. Let's get started. **Aunima** the floor is yours.



ACKNOWLEDGEMENTS

- Colleen Barbero, PhD
- Erika Fulmer, MHA
- Siobhan Gilchrist, JD, MPH
- Sharada Shantharam, MPH
- Lauren Taylor, MPH
- Farah M. Chowdhury, MD, MPH
- Kaitlin Graff, MSW, MPH
- Stephanie Bernard, PhD, MPH
- Jennifer VanderVeur, JD
- Andrew Kunka, JD, MPA
- Nupur Maskara, BDS, MPH

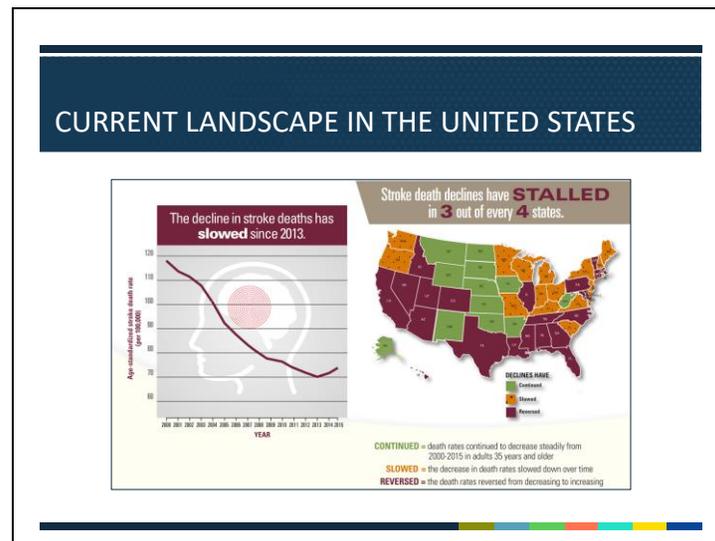
Thank you, **Lauren**.

Before I begin, I would like to quickly recognize and thank the project team. Additionally, we're grateful for our subject matter experts from CDC, state stroke programs, and the American Heart Association.

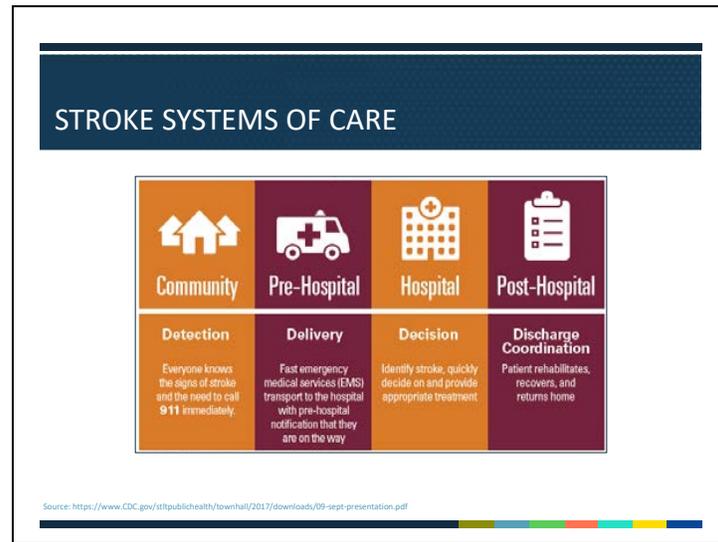
TODAY'S PRESENTATION

- Current landscape of stroke systems of care
- Methods: Early evidence assessments
- Findings (PDF & HTML versions)
- Next steps: Implications & future considerations

What do we know about evidence-informed policies within stroke systems of care? How do these policies impact a patient's journey from the onset of stroke to treatment to discharge? Today, we're taking a dive into the current landscape of stroke systems of care, the evidence base for 16 policy interventions to improve stroke systems of care in an easily digestible format, and rounding this coffee break chat with next steps in terms of future considerations for evidence and implementation.



What we know so far is that the decline in stroke deaths has slowed since 2013, with 3 out of every 4 states seeing stalled declines. However, we know that 80% of strokes are preventable. So, how can we help mitigate this public health issue?



A coordinated continuum of care can improve patient outcomes. A stroke systems of care can effectively identify, treat, and assist in the recovery of patients with stroke. Yet, we continually see that stroke systems of care do not achieve the same outcomes across all states and communities.

State law could help increase the reach, consistency, coordination, and quality of stroke care. To increase effectiveness, law should be based on the most current and complete evidence base. The evidence for policy interventions within a comprehensive state stroke law needs to be systematically appraised.

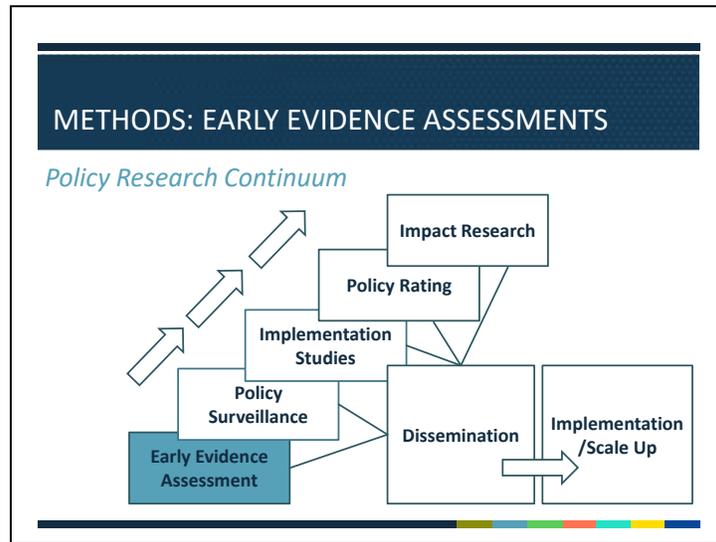
This is where the CDC researchers come in. We completed two early evidence assessments that assessed the evidence for 16 policy interventions within stroke laws to improve pre-hospital, hospital, and post-hospital care.



Before we go into the methodology and results, for the assessments' purposes, pre-hospital care includes all emergency medical care provided to the patient before entering the appropriate acute care facility.



In-hospital care involves the care provided to the stroke patient at an acute facility by hospital staff before discharge. And post-hospital care involves short and long-term rehabilitative care after discharge.



Early evidence assessments are the first step on the policy research continuum. The Applied Research and Translation team use this concept to address the translation of evidence-informed policy interventions. To operationalize the recommendation, we developed a stepped approach that guides our strategic planning efforts and provides clarity regarding how we pursue our policy evaluation work.

METHODS: EARLY EVIDENCE ASSESSMENTS

- 16 policy interventions within stroke systems of care (as of May 2018)
- Utilized existing tool¹⁻³ to code and abstract evidence
- Engaged stroke experts from CDC and the field

1. Barbero C et al. 2017. Doing more with more: How “early” evidence can inform public policies. *Public Administration Review*, 77(5): 646-649. doi: 10.1111/puar.12831.
2. CDC DHDSF. Navigating Uncharted Waters: Assessing Best Available Evidence for Emerging Areas of Public Health Policy. Quality and Impact of Component Evidence Assessment Version 2. Centers for Disease Control and Prevention: Atlanta, GA.
3. Barbero C et al. 2015. Appraising the evidence for public health policy components using the quality and impact of component evidence assessment. *Global Heart*, 10(1): 3-11. doi: 10.1016/j.gheart.2014.12.013.

To begin our assessment we first identified 16 policy interventions that were both recommended by experts on stroke systems of care as well as addressed in at least one state’s law in effect as of May 2018. We determined that the policy interventions were addressed in law by collecting and reviewing state statutes, legislation, and regulations pertaining specifically to stroke.

We next used an existing CDC tool, Quality and Impact of Component (also known as QuIC) tool to assess the level of early evidence for each policy intervention. This “early” evidence included evaluation studies, and subject matter expert recommendations drawn from the published and grey literature. Our researchers abstracted and coded the evidence, then applied the QuIC tool. All discrepancies between coders were resolved through discussion, and a set of final coding rules was approved by the entire team. On the next slide, we’ll take a closer look at the tool.

To increase the relevance of our assessment to current policy decisions, and as mentioned previously, we convened an expert group representing CDC, state stroke programs, and the American Heart Association. This group provided input throughout the assessment.

METHODS: EARLY EVIDENCE ASSESSMENTS

Evidence for Potential Public Health Impact

Evidence Score	Weak Evidence # of 0-3	Moderate Evidence # of 4-6	Strong Evidence # of 7-8	Very Strong Evidence # of 9-10
Effectiveness	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Equity and Reach	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Efficiency	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Transferability	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem

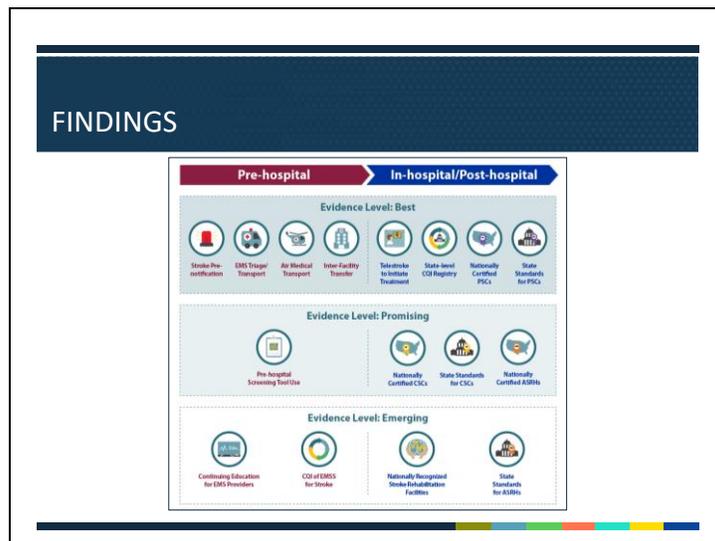
Evidence Quality

Evidence Score	Low Quality # of 0-3	Moderate Quality # of 4-6	High Quality # of 7-8	Very High Quality # of 9-10
Evidence Types	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Source	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Evidence Base	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Evidence Base	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem
Evidence Base	<ul style="list-style-type: none"> <input type="checkbox"/> Experts <input type="checkbox"/> Laymen <input type="checkbox"/> Journals <input type="checkbox"/> Textbooks <input type="checkbox"/> Websites 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence for a population <input type="checkbox"/> Indirect evidence for a population <input type="checkbox"/> Indirect evidence for a population 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Direct evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem <input type="checkbox"/> Indirect evidence of a health problem

NOTE: IF NONE OF ITS REQUIREMENTS ARE MET, A CRITERION IS ASSIGNED A SCORE OF 0 POINTS

As mentioned previously, here is a snapshot of the QuIC tool that we used to assess the evidence base for each intervention. The left table gave us a score for evidence for potential public health impact through application of four criteria: effectiveness, equity and reach, efficiency, and transferability. The right table was used to assess the quality of the evidence base through four criteria: evidence type or study design, source, amount of practice-based evidence, and amount of research-based evidence.

These scores are combined to determine if a policy intervention had a “best,” “promising,” or “emerging” evidence base. State laws that address the policy interventions with best evidence are expected to have the greatest potential for a positive health impact and an associated economic impact



This infographic highlights all 16 policy interventions, split between pre-hospital and in-hospital/post-hospital care. 8 policy interventions had “best” evidence, 4 with “promising quality or potential public health impact”, and 4 with “emerging” evidence.

The evidence base of the interventions reported positive health-related outcomes such as: decreased time to treatment, improved motor function, improved stroke recognition, and improved access to expert care. Additionally, multiple interventions (i.e., air medical transportation, telestroke, state-level continuous quality improvement, and nationally certified primary stroke centers) were found to have positive impact among rural populations.

Keep in mind that state stroke statutes and regulations are not the only way to make these policy interventions happen. Some states are working to implement the policy interventions at the state, regional, and local levels under broader legal authorities and through state-level programs. We plan to update our assessments as states enact new laws and there is new evidence.

LET'S DISCUSS! POLL QUESTION

Which evidence-informed policy interventions are you implementing in your state?

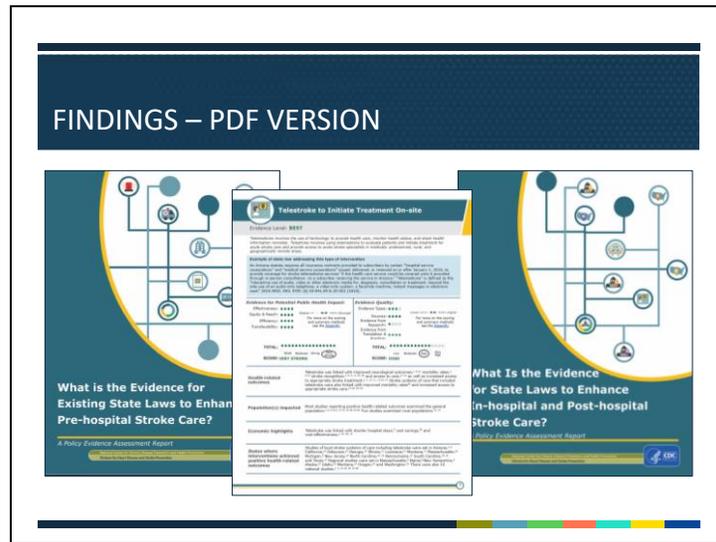
- Pre-notification of Receiving Facility by EMS Provider
- EMS Triage and Transport
- Air Medical Transport
- Inter-Facility Transfer
- Pre-hospital Stroke Screening Tools
- Continuing Education for EMS Providers
- Continuous Quality Improvement & Registries
- Telestroke
- National or State:
 - Primary Stroke Centers
 - Acute Stroke-Ready Hospitals
 - Comprehensive Stroke Centers
 - Stroke Rehabilitation Facilities

We have a poll question for you. We welcome any insight about what your state is doing right now. What are some of the interventions or innovations that your state is implementing?

LET'S DISCUSS! CHAT BOX QUESTION

What are potential challenges and/or barriers to implementation of these policy interventions?

Additionally, as a chat box question, what are potential challenges and/or barriers to implementation of these policy interventions? We will give you a few minutes to discuss in the chat box and we will share some answers.



We published our findings in a printable version, available on the CDC website. Each report provides **evidence summaries** for the stroke policy interventions included in the assessment, which include a full reference list and positive outcomes observed in intervention studies, as well the specific states in which these outcomes were found. These summaries are designed to help state decision makers and public health organizations determine which policy interventions may be useful in their state.

NEXT STEPS



Stroke care is a team effort.

Learn how CDC helps improve care and **save lives.**

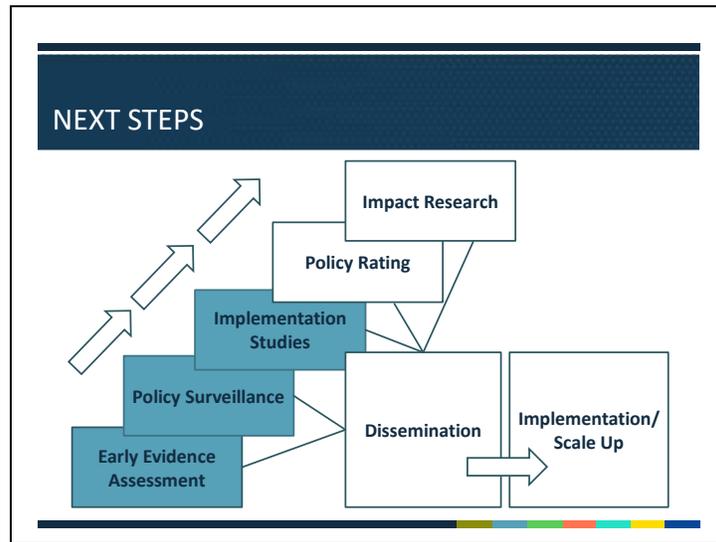
- State Decision Makers & Public Health Organizations
- State and Private Sector Decision Makers
- State and Local Health Agencies
- Researchers

Stroke care is truly a team effort! What can you do?

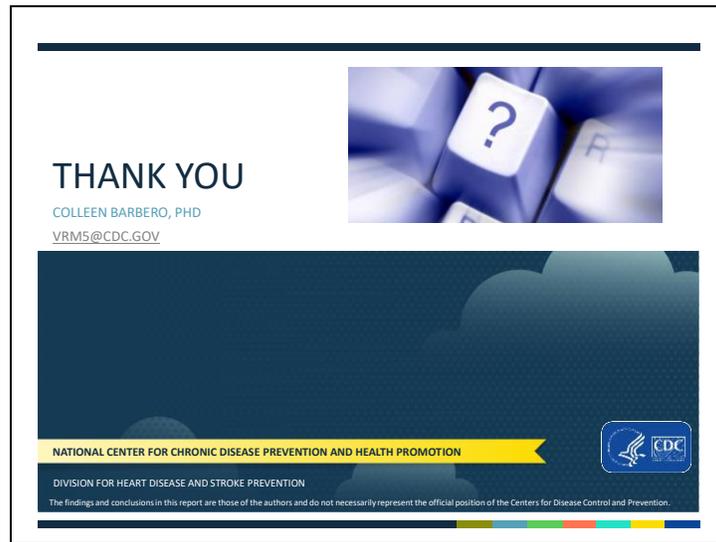
Decision makers, public health organizations, state and private sector decision makers may consider state stroke policies that address multiple evidence-based interventions to improve the entire system of stroke care.

State and local health agencies could use these reports to help inform stroke policy development.

There are many opportunities for researchers, as there is lack of evidence about disparities, and limited evidence base for interventions the promising and emerging categories across the states. Future research should focus on the implementation and impact of state stroke systems of care laws



What are we doing to continue these efforts? We are currently in the process of conducting policy surveillance which will turn into a state law fact sheet. This will be available online later this year. Additionally, we're conducting implementation case studies to determine the extent that existing state laws align with evidence, and examine the barriers and facilitators related to policy implementation. We're looking forward to engaging our partners and states in the stroke care field.



Thank you everyone for your input during the discussion phase, it sounds like there are emerging topics to explore, and continual support to improve stroke systems of care through law. I am joined by Colleen Barbero, who was the project lead of the assessments to answer any questions. Additionally, her email is available above if you have any questions.

MODERATOR:

At this time, we'll take any questions but first we'll check to see if any questions have come in through the Q&A box.

If we have questions ask the questions posed by the attendees to the presenter

If we do not have questions, proceed with the script below

Since it appears that we have no questions at this time from the audience, we have some questions that we wanted to ask that might be insightful to our participants.

Questions:

- Can you speak more about the early evidence assessment methodology?
- Did you look at policy interventions impacting the community stage of the stroke continuum of care?



MODERATOR:

Next, please stay with us for two short poll questions.

Please allow a few seconds for the poll to pop up on your screen. We will pause for a few moments after the question is presented to give you time to answer. One moment everyone.

Moderator present poll question. Make sure to read the following after presenting each.

The **[first, second]** question should be showing, it read **[read question and potential answers]**

Please respond with the appropriate answer at this time.

The level of information was...

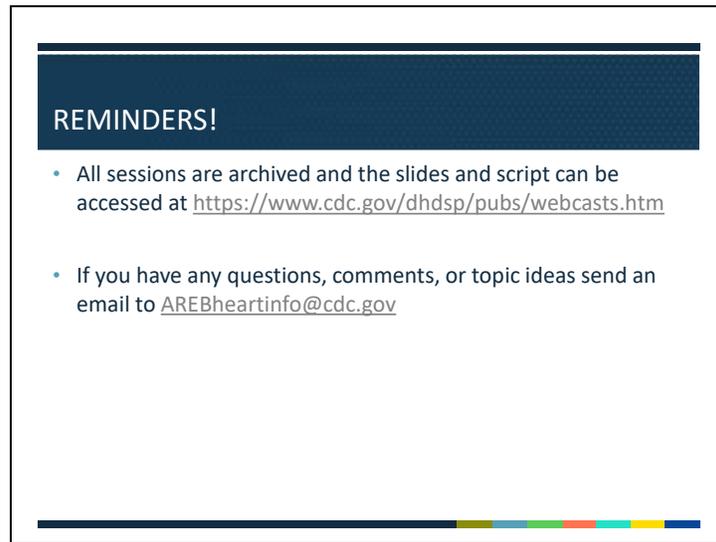
Too basic

About right

Beyond my needs

The information presented was helpful to me.

- Yes.
- Somewhat.
- Not at all.



REMINDERS!

- All sessions are archived and the slides and script can be accessed at <https://www.cdc.gov/dhdsppubs/webcasts.htm>
- If you have any questions, comments, or topic ideas send an email to AREBheartinfo@cdc.gov

Thank you for your participation!

As a reminder, all sessions are archived and the slides and script can be accessed at our Division website at the link shown. Today's slides will be available in about 3 weeks.

If you have any ideas for future topics or questions, please feel free to contact us at the listed email address on this slide.

NEXT COFFEE BREAK

- **When:** Tuesday, March 12, 2019
- **Topic:** Conducting Cost Analyses to Assess Cost-Effectiveness of Public Health Programs
- **Presenter:** Jack Chapel, BS



A white ceramic coffee cup filled with black coffee, with a small amount of foam on top. The cup is positioned on the right side of the slide, below the text.

MODERATOR:

Our next Coffee Break is scheduled for Tuesday, March 12th and is entitled Conducting Cost Analyses to Assess Cost-Effectiveness of Public Health Programs.

Thank you for joining us. Have a terrific day everyone. This concludes today's call.