



# CDC Levels of Care Assessment Tool

# Risk-Appropriate Care (Perinatal Regionalization)

- Strategy promoted in 1976 March of Dimes report\*
- Guidelines set by AAP and ACOG/SMFM
- Simple concept quickly embraced by many states
- Enhanced by public health research



# How Should Risk-Appropriate Care Work?

Shared understanding of facilities' levels of care  
(Level I, Level II, Level III, or Level IV)



Delivery occurs at facilities where the anticipated  
appropriate level of care is available



Level III and IV facilities work to provide support to  
Level I and II facilities when needed

# Levels of Neonatal Care

Facility Level	Definition
<b>Level I</b>	Well born nursery – Provide basic levels of care to neonates who are low risk and have the capability to perform neonatal resuscitation at delivery and provide postnatal care for healthy newborn infants.
<b>Level II</b>	Special care nursery – Provide care to stable or moderately ill newborn infants who are born at or before 32 weeks' gestation or who weigh 1500 g or less at birth with problems that are expected to resolve rapidly, without anticipated need of subspecialty-level services of an urgent basis.
<b>Level III</b>	NICU – Meet level II requirements and have continuously available personnel (neonatologists, neonatal nurses, and respiratory therapists) and equipment to provide life support for as long as necessary. A broad range of pediatric medical and surgical subspecialists should be readily accessible on site or by prearranged consultative agreements.
<b>Level IV</b>	Regional NICU – Meet level III requirements, have considerable experience in the care of the most complex and critically ill newborn infants, and have pediatric medical and surgical consultants available on-site 24 hours a day, with the capability for surgical repair of complex conditions.

# Levels of Maternal Care

Facility Level	Definition
<b>Accredited Birth Center</b>	Care for low-risk pregnant persons with uncomplicated singleton term vertex pregnancies who are expected to have an uncomplicated birth.
<b>Level I</b>	Care for low- to moderate-risk pregnancies with ability to detect, stabilize, and initiate management of unanticipated maternal-fetal or neonatal problems that occur during the antepartum, intrapartum, or postpartum period until the patient can be transferred to a facility at which specialty maternal care is available.
<b>Level II</b>	Level I facility plus care of appropriate moderate- to high-risk antepartum, intrapartum, or postpartum conditions.
<b>Level III</b>	Level II facility plus care of more complex maternal medical conditions, obstetric complications, and fetal conditions.
<b>Level IV</b>	Level III facility plus on-site medical and surgical care of the most complex maternal conditions and critically ill pregnant persons and fetuses throughout antepartum, intrapartum, and postpartum care.

\* ACOG, SMFM, Kilpatrick, S., Menard, K., Zahn, C., Callaghan, W.M. Levels of Maternal Care. AJOG. 2019.

# Discrepancies in Interpretation of Guidelines

Definitions, criteria, compliance mechanisms, and regulatory source of neonatal levels of care vary widely.<sup>1</sup>

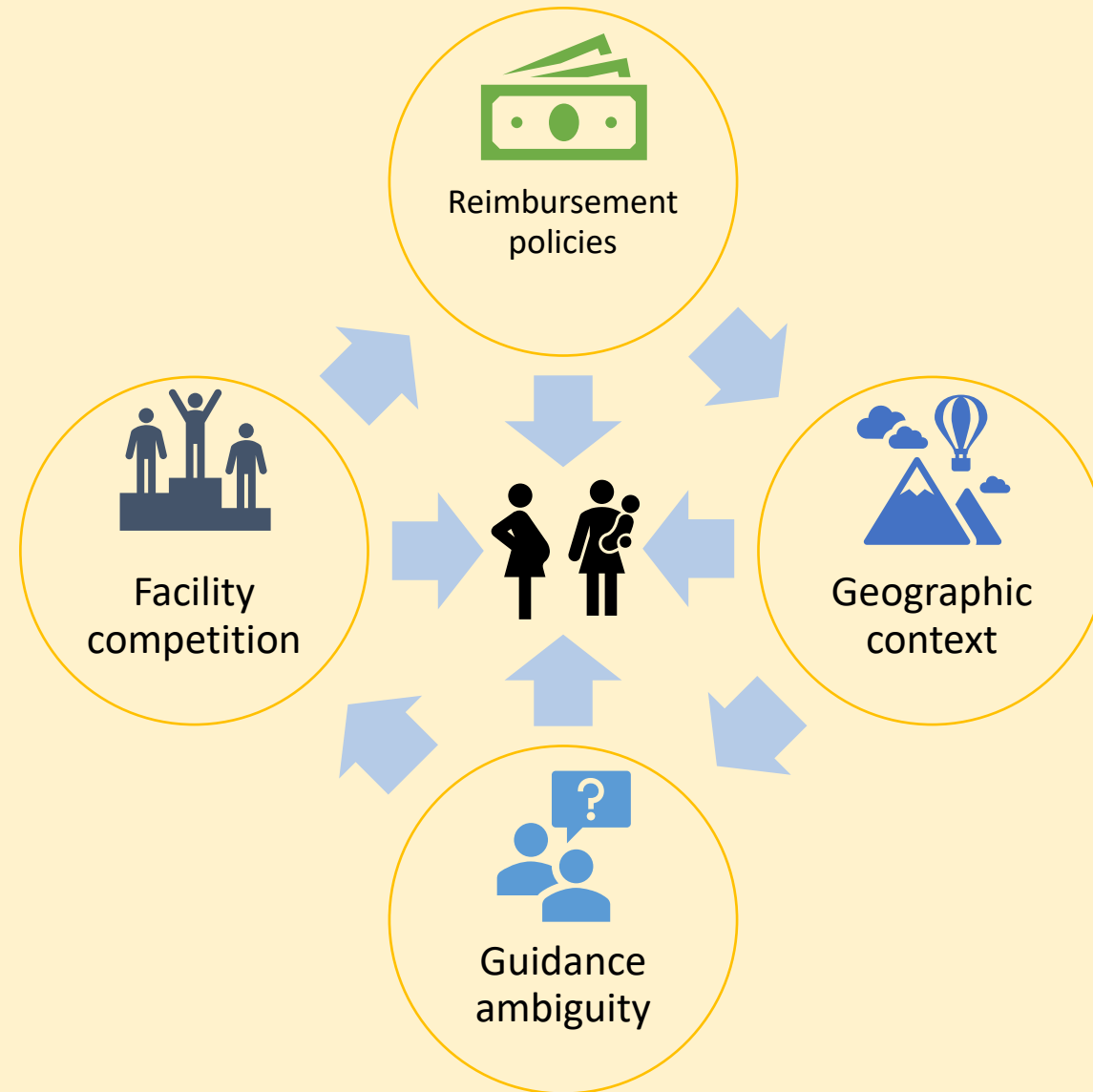
- 31 states had policies for neonatal levels of care (2019).<sup>2</sup>  
22 of these states require ongoing monitoring; 10 require site visits
- 17 states had policies for levels of maternal care (2018).<sup>3</sup>

<sup>1</sup> Blackmon, L., Barfield, W. & Stark, A. Hospital neonatal services in the United States: variation in definitions, criteria, and regulatory status, 2008. *J Perinatol* 29, 788–794 (2009) doi:10.1038/jp.2009.148

<sup>2</sup> Kroelinger CD, Okoroh EM, Goodman DA, Lasswell SM, Barfield WD. Designation of neonatal levels of care: a review of state regulatory and monitoring policies. *J Perinatol* 40,:369-376 (2020) doi: 10.1038/s41372-019-0500-0

<sup>3</sup> Vladutiu CJ, Minnaert JJ, Sosa S, Menard MK. Levels of Maternal Care in the United States: An Assessment of Publicly Available State Guidelines. *J Womens Health* 29, 353-361 (2020) doi: 10.1089/jwh.2019.7743

# Challenges



# What is CDC LOCATe<sup>®</sup>?

## **Produces standardized assessments**

- Based on guidelines by AAP and ACOG/SMFM
- Strengthens evidence for necessity of increased specificity in criteria

## **Facilitates stakeholder conversations**

- Increases (common) understanding of risk appropriate care landscape
- Provides data for informed improvements by facilities and systems

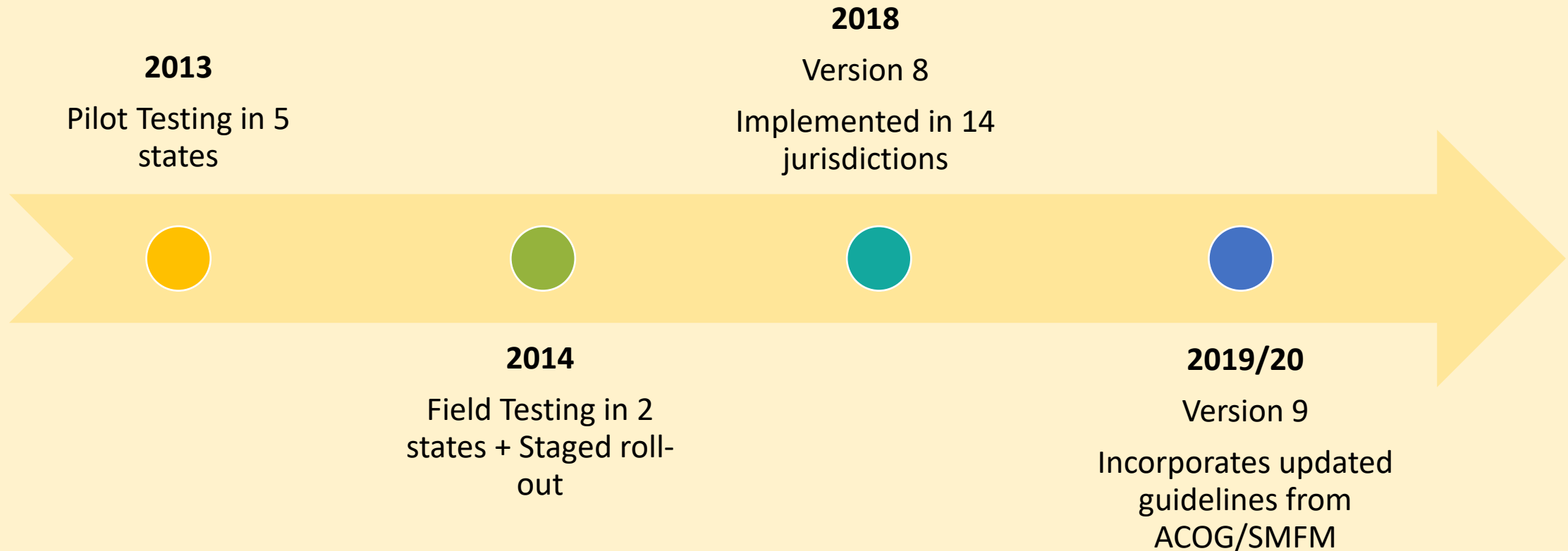
*...while, minimizing burden on respondents*



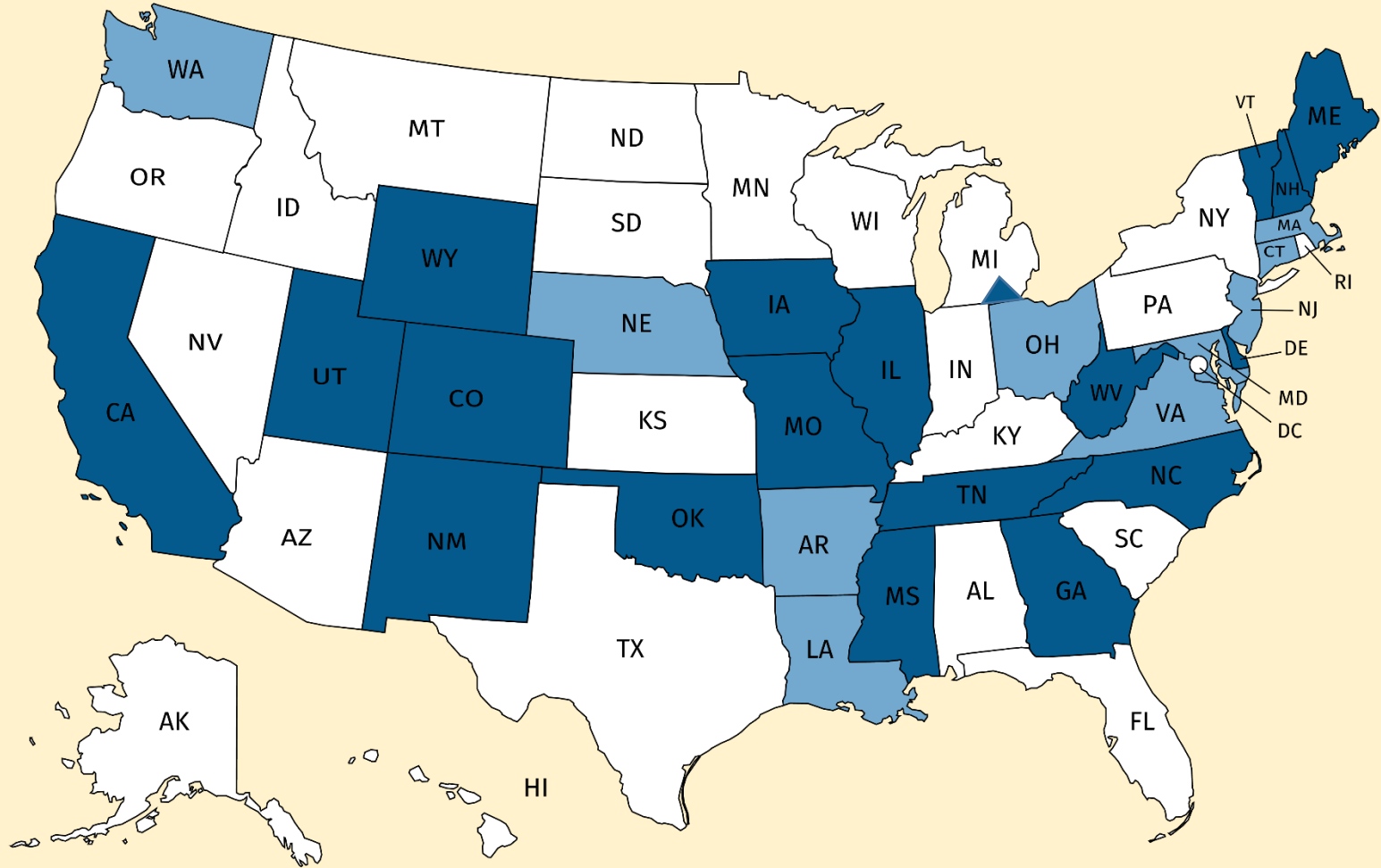
# What LOCATe<sup>®</sup> is NOT...

- NOT... A comprehensive assessment of all neonatal and maternal criteria
- NOT... A tool for formal designation of levels of care
- NOT... A tool for health care regulation

# Development of LOCATe®

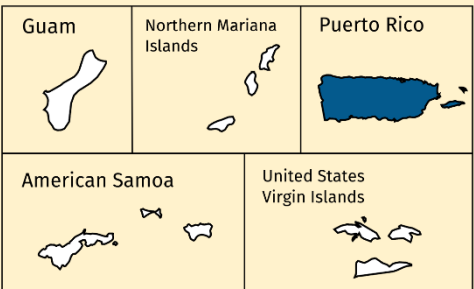


# LOCATe States and Jurisdictions



### State Implementation Status

- Not Implemented
- Implemented
- Planning Implementation



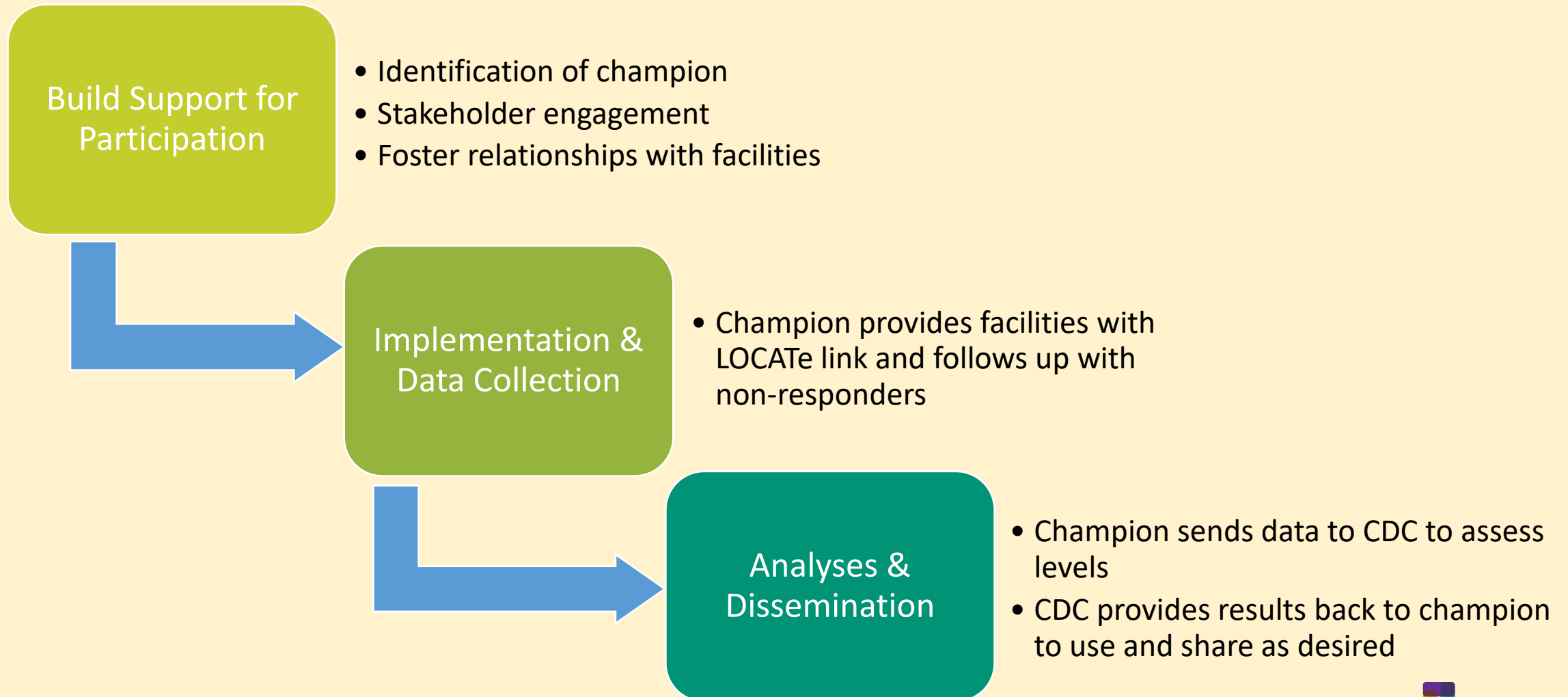
# LOCATe Content

## Assessment includes questions about:

- Facility services & their availability
  - Facility personnel & their availability
- } [Assessing levels of care]
- Self-reported levels of care [Understanding where there may be discrepancies and why]
  - Volume of services [Understanding where/how experience matters]
  - Drills & protocols for maternal emergencies [Helping identify QI opportunities]
  - Transports [Availability for stakeholder conversations]
  - Facility-level statistics [Facilitating rapid development of summary information]

**Web-based platforms: Survey Monkey or REDCap**

# The LOCATe Process



# Neonatal Assessment Discrepancies\*

39% of facilities have discrepancies between self-reported level and LOCATe-assessed level

Based on the **2012 AAP guidelines** for neonatal levels of care, what do you consider your **neonatal level of care** to be?

Facility Level	Self-Reported	LOCATe Assessment
Level I	29%	41%
Level II	32%	41%
Level III	21%	14%
Level IV	6%	3%
Unknown	11%	-

\* Based on data from 767 facilities in 15 jurisdictions

# Maternal Assessment Discrepancies\*

49% of facilities have discrepancies between self-reported level and LOCATe-assessed level

Based on the **2015 ACOG/SMFM guidelines** for maternal levels of care, what do you consider your **maternal level of care** to be?

Facility Level	Self-Reported	LOCATe Assessment
< Level I	3%	13%
Level I	27%	36%
Level II	32%	40%
Level III	19%	8%
Level IV	6%	3%
Unknown	14%	-

\* Based on data from 767 facilities in 15 jurisdictions

# LOCATe results can be used to...

Examine differences in **maternal/neonatal outcomes within and between levels of care** by merging LOCATe results with birth record data.

Identify **priority areas** and leverage perinatal quality collaborative (PQC) for implementation.

Use aggregate findings as talking points to **encourage prioritization of levels of care in the state.**

Use results to **coordinate maternal and neonatal emergency preparedness plans and drills.**

Present results to stakeholders to **increase buy-in and work locally to address challenges.**

Analyze differences in mortality based on specific facility characteristics and **advocate for adoption of new guidelines based on findings.**



# Successes

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The Illinois Department of Public Health was motivated to use LOCATe to compare their state's perinatal system to the AAP and ACOG guidelines for levels of care. Additionally, staff wanted to use LOCATe results to inform policy decisions to improve care for mothers and infants.

Following completion of LOCATe, a state epidemiologist performed several analyses including describing current hospitals' neonatal and maternal levels of care, the **potential impact of changing levels of care to current national guidelines, as well as neonatal mortality across and within levels of care.**

The findings from these analyses assisted the state of Illinois in the **adoption of the current AAP guidelines for neonatal levels of care.**

# Successes

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WYOMING

Wyoming implemented LOCATe in hopes of capturing responses from facilities in WY as well as those in bordering states who receive high-risk pregnant and postpartum patients from WY. WY attained a 100% response rate and provided individual results to all hospitals.

Following implementation, WY conducted an **analysis of severe maternal morbidity by combining severe maternal morbidity data with LOCATe levels data.**

Results from LOCATe identified that several WY facilities did not have specific maternal care protocols in place. As a result, **WY facilities participated in the Utah Department of Health's Extension for Community Healthcare Outcomes (ECHO) for hypertension in pregnancy.**



# Thank you!

## Questions?

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***NOTE:** The findings and conclusions in this presentation are those of the presenter and do not necessarily represent the official position of the Centers for Disease Control and Prevention*

