SCID Case Definitions

Marci K. Sontag, PhD and Careema Yusuf, MPH

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Presentation Outline

- Background
- SCID Case Definitions Development and Implementation
- SCID Cases Nationwide

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Surveillance Case Definitions

- Surveillance case definitions are intended to establish uniform criteria for *disease reporting*
- *What are we screening for? What does it mean to identify a TRUE POSITIVE*
- NOT intended for use as
  - criteria for establishing clinical diagnoses
  - determining the standard of care necessary for a particular patient
  - setting guidelines for quality assurance
  - providing standards for reimbursement

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Case Definitions for Newborn Screening Public health Surveillance: SCID

Classification: Classic SCID	CD3 T cells/μL	Proliferation to PHA	Maternal engraftment Y/N	Molecular testing	Clinical Presentation
Definite	<300	<10% of normal	No	None or inconclusive	
Definite	<300	<10% of normal	No	Consistent with SCID*	
Definite	<300	<10% of normal	Yes	None or inconclusive	
Definite	<300	<10% of normal	Yes	Consistent with SCID*	
Possible	<300	Unknown or any	No	None or inconclusive	
Possible	<300	Unknown or any	No	Consistent with SCID*	
Probable	<300	Unknown or any	Yes	None or inconclusive	
Probable	<300	Unknown or any	Yes	Consistent with SCID*	
Possible	Any number	<10% of normal	No	None or inconclusive	
Probable	Any number	<10% of normal	No	Consistent with SCID*	

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- *Variant in SCID gene that is known to be associated with leaky SCID (previously reported or in a gene previously associated with SCID/T-cell dysfunction; hypomorphic mutation)*

X* = unclasssifiable

Case Definitions for Newborn Screening Public health Surveillance: Leaky SCID

Classification: Leaky SCID	CD3 T cells/μL	Proliferation	Maternal engraftment Y/N	Molecular testing	Clinical Presentation
Definite	Age 2: <1,000 Age 2-4: <800 Age >4: <600	10-30% normal PHA *or* Absent to Candida/TT	No	None or inconclusive	
Definite	Age 2: <1,000 Age 2-4: <800 Age >4: <600	10-30% normal PHA *or* Absent to Candida/TT	No	Consistent with SCID*	
Possible	Age 2: <1,000 Age 2-4: <800 Age >4: <600	Unknown or any	No	None or inconclusive	
Definite	Age 2: <1,000 Age 2-4: <800 Age >4: <600	Unknown or any	No	Consistent with SCID*	
Possible	Any number	10-30% normal PHA *or* Absent to Candida/TT	No	None or inconclusive	
Definite	Any number	10-30% normal PHA *or* Absent to Candida/TT	No	Consistent with SCID*	
X*	Any number	Unknown or any	No	None or inconclusive	
Definite	Any number	Unknown or any	No	Consistent with SCID*	

- *Variant in SCID gene that is known to be associated with leaky SCID (previously reported or in a gene previously associated with SCID/T-cell dysfunction; hypomorphic mutation)*

X* = unclasssifiable

Case Definitions for Newborn Screening Public health Surveillance: Omenn Syndrome

Classification Omenn syndrome	CD3 T cells/μL	Proliferation to PHA	Maternal engraftment Y/N	Molecular testing	Clinical Presentation
Definite	>80% CD45RO+	<30% normal	No	None or inconclusive	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Definite	>80% CD45RO+	<30% normal	No	Consistent with OS*	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Definite	>80% CD45RO+	<30% normal	No	None or inconclusive	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Definite	>80% CD45RO+	<30% normal	No	Consistent with OS*	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Probable	>80% CD45RO+	<30% normal	Unknown	None or inconclusive	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Definite	>80% CD45RO+	<30% normal	Unknown	Consistent with OS*	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Probable	>80% CD45RO+	<30% normal	Unknown	None or inconclusive	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody
Definite	>80% CD45RO+	<30% normal	Unknown	Consistent with OS*	Erythroderma, hepatosplenomegaly, eosinophilia, elevated levels of serum IgE Antibody

- Consistent with OS includes: Known variant(s) in SCID gene that is known to be associated with leaky SCID (previously reported or in a gene previously associated with SCID/T-cell dysfunction; Ruled out 22q11 deletion, ruled out FOXN1 mutation

Public Health Minimum Data Set for Long-Term Follow-Up

- Diagnosis
- Condition Specific Care within the Past 12 Months
- Date or Age of Appropriate Intervention
- Alive or Deceased

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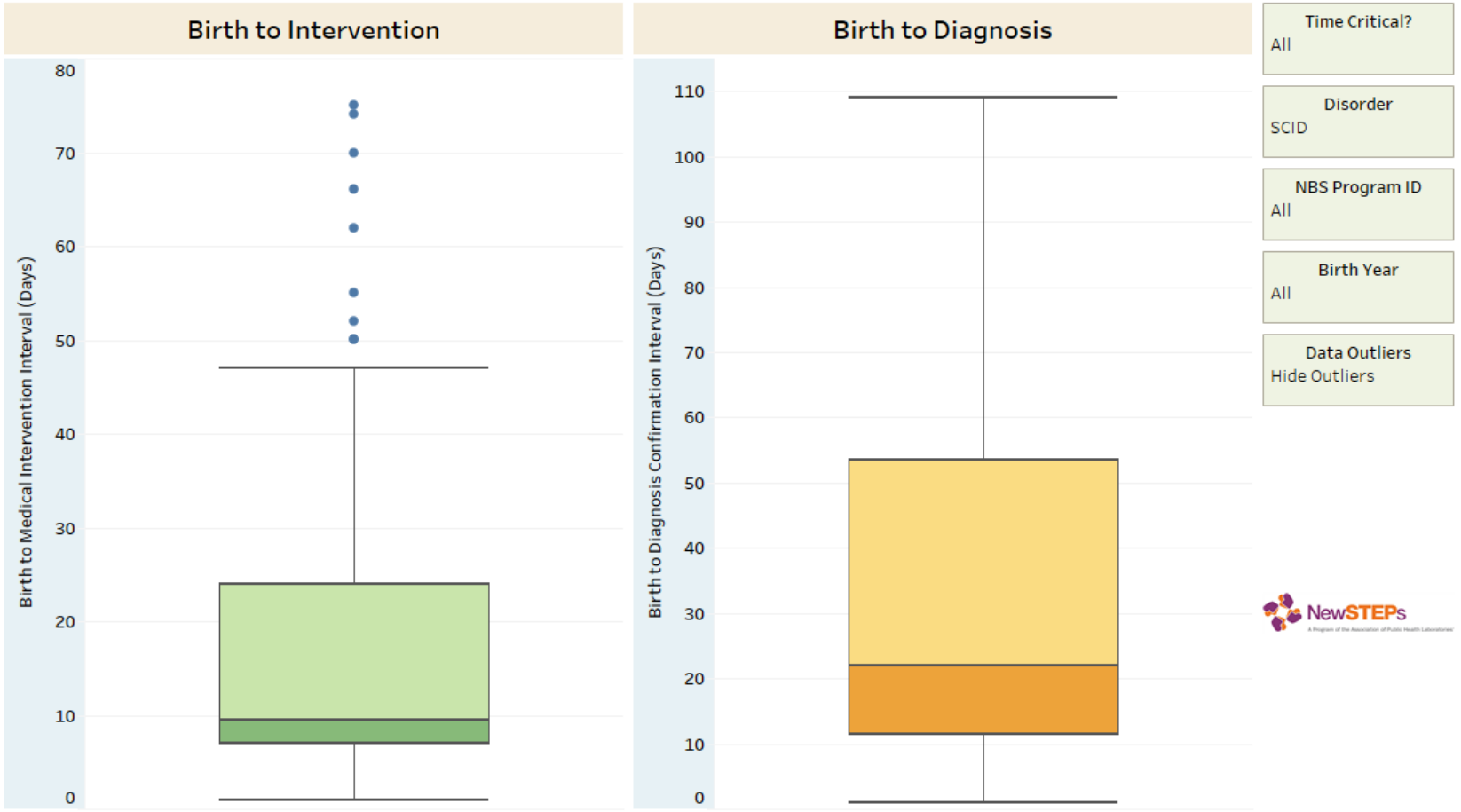
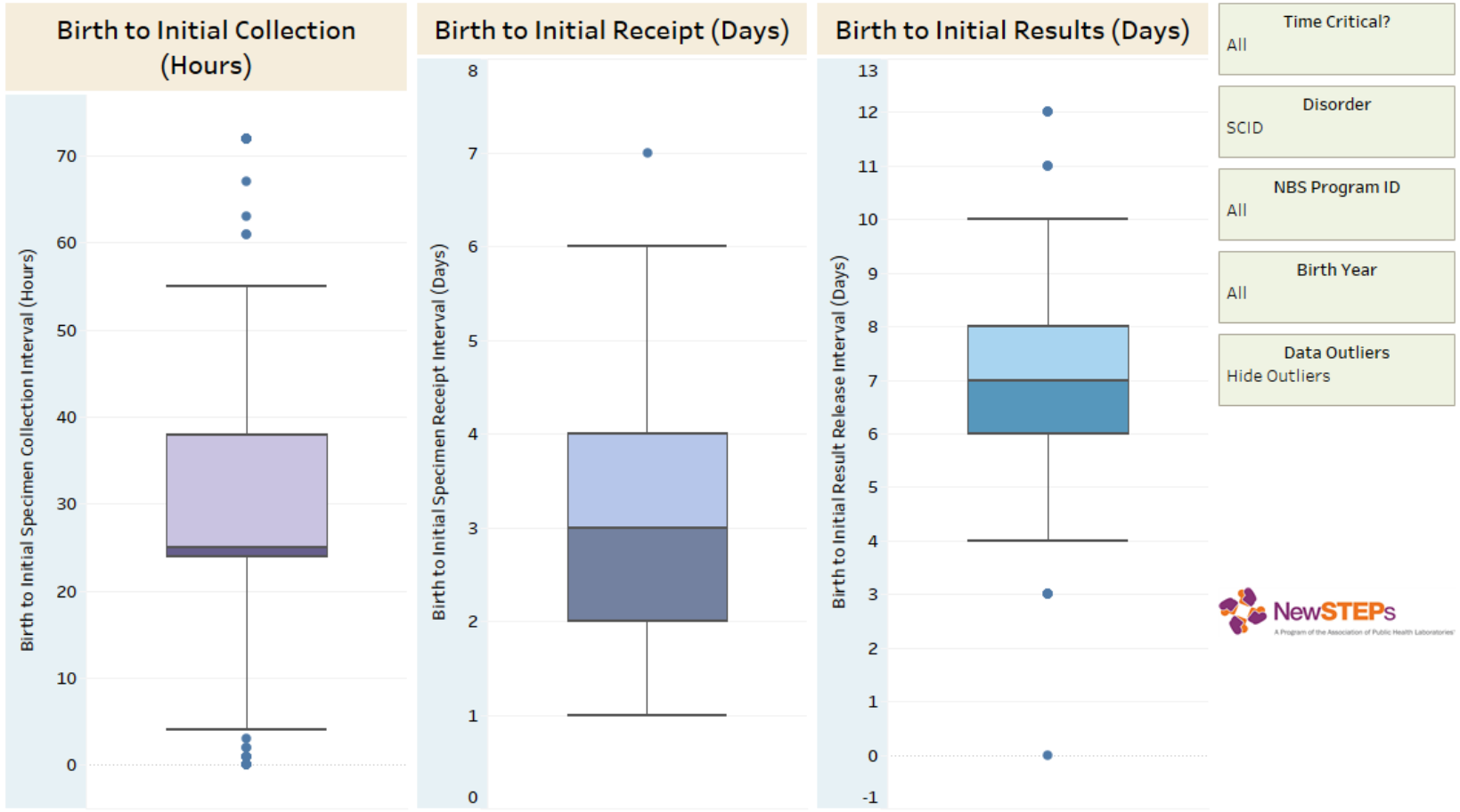
Timing of intervention and diagnosis

Descriptive Data Tables	Case Demographics	Newborn Screening Information	Initial Specimen Timeliness Measures	Subsequent Specimen Timeliness Measures	Follow-up Timeliness Measures



Timing of Newborn Screening Activities

Descriptive Data Tables | Case Demographics | Newborn Screening Information | **Initial Specimen Timeliness Measures** | Subsequent Specimen Timeliness Measures | Follow-up Timeliness Measures



Next Steps

- Report back to ACHDNC on benefit of screening and unanticipated findings
- Need data from all states
- Link to Longitudinal Pediatric Data Resource to provide denominator data for long term follow-up

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Acknowledgments

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  - Tennessee
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  - Idaho
  - Mississippi
  - Iowa
  - Pennsylvania
  - New Mexico
  - Washington
  - Michigan
  - Virginia
  - Texas
  - Florida
  - Utah
  - California
  - Kentucky
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