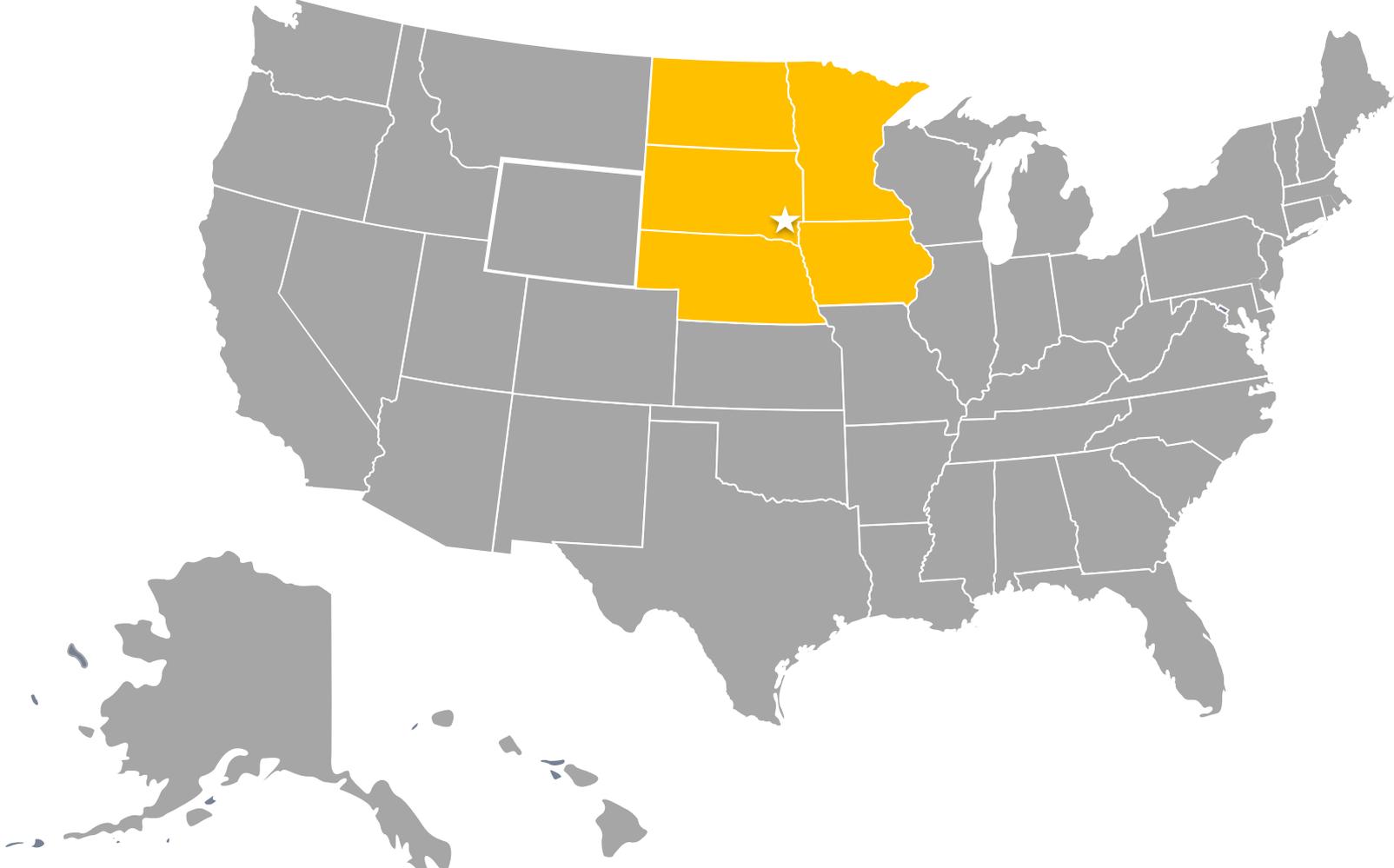

January 27, 2023

Prenatal Exposures & Infant Death: Report to Commission on Native Child Health



Photo/Corbis

Avera Health Footprint



ARI Offices & Recruitment Sites

Avera Research Institute Offices: Sioux Falls, Rapid City and Pine Ridge

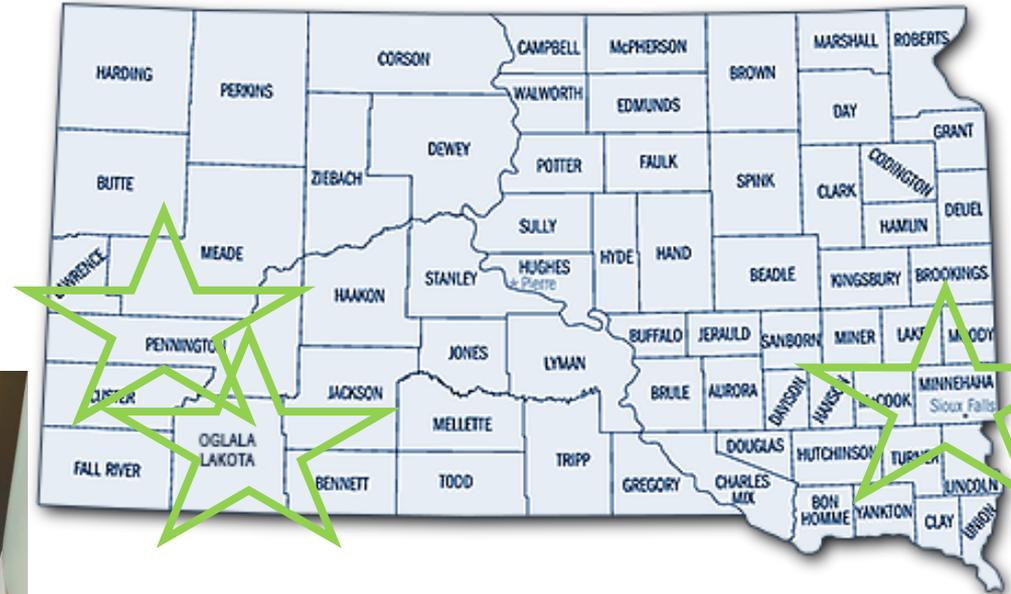
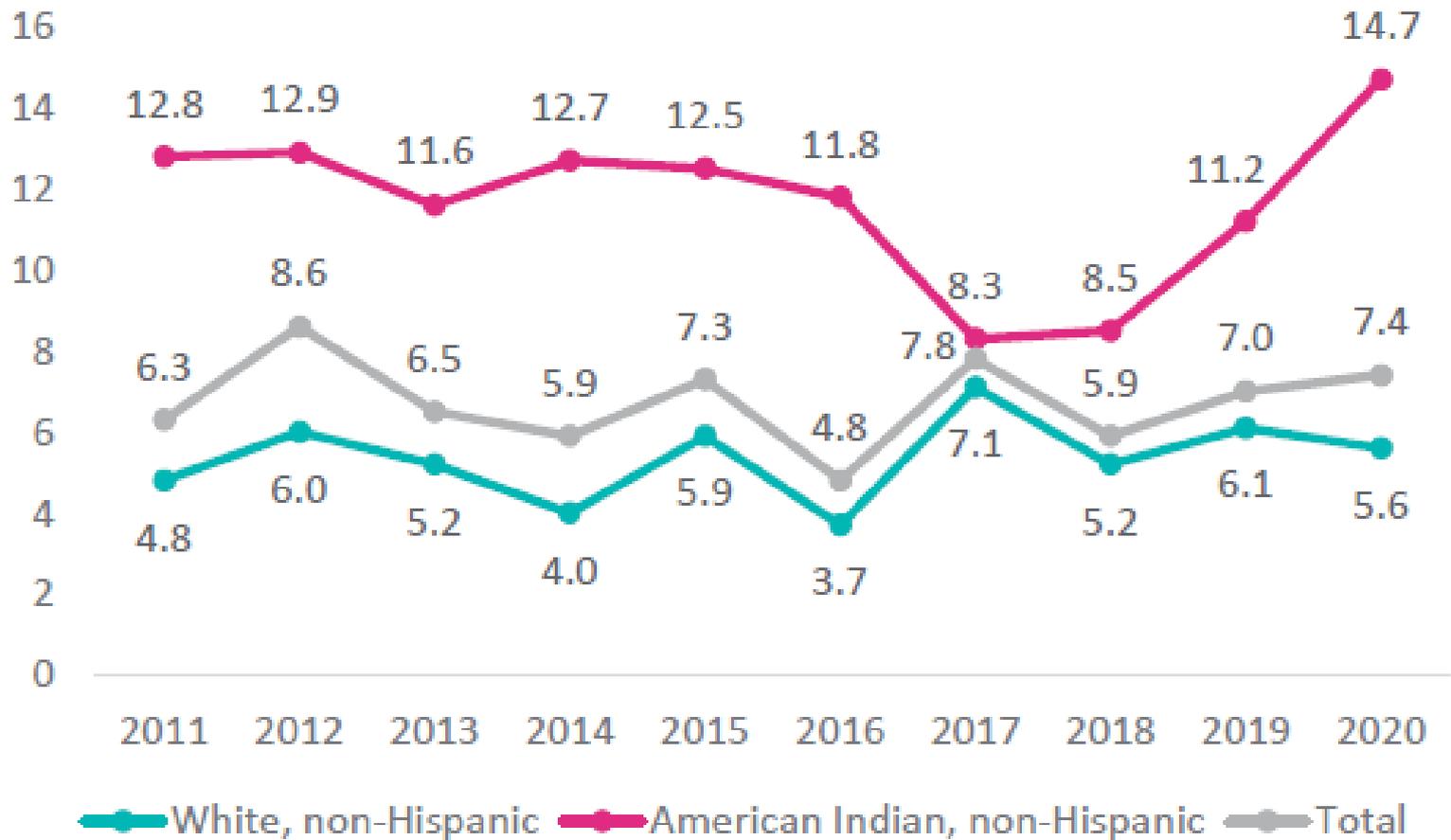




Figure 5: Infant Mortality Rates by Race and Hispanic Origin, 2011-2020



Prenatal
Alcohol,
SIDS, and
Stillbirth

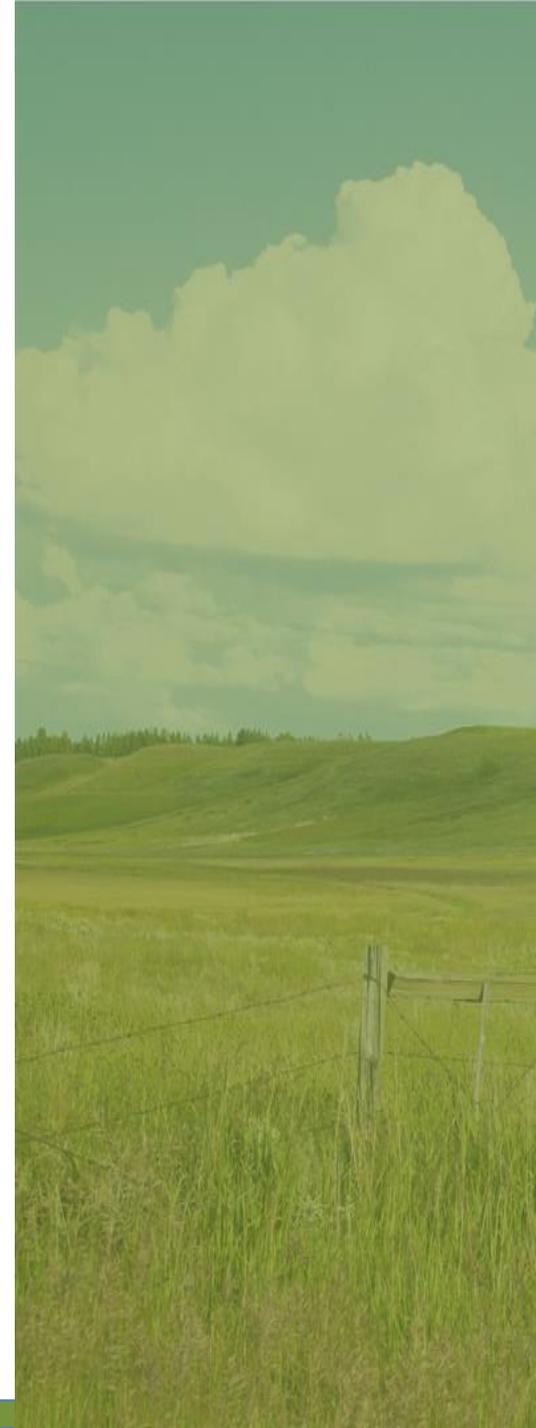


Phase I, 2003-2006: Development of hypotheses & protocols;
pilot/feasibility studies

Phase II, 2006-2017: Performance of full-scale, hypotheses-driven
studies (prospective & retrospective studies)

- 2018: investigators unblinded to exposure data

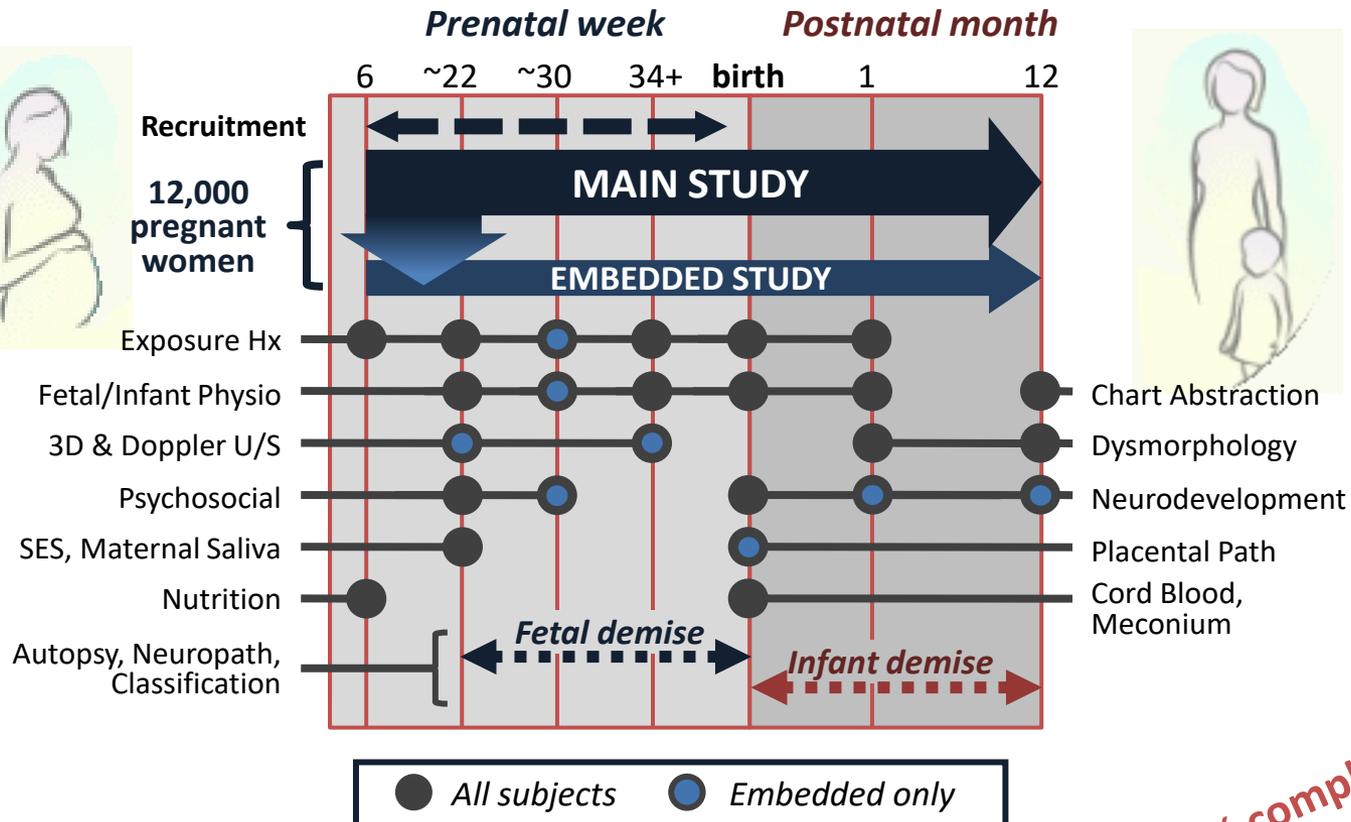
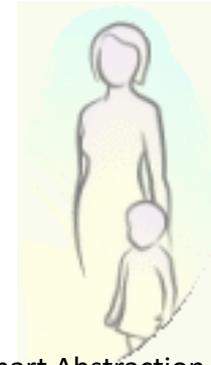
12,192 pregnancies enrolled



Prenatal
Alcohol,
SIDS, and
Stillbirth



PASS Study Protocol



86% compliance for study visits

12,192 pregnancies enrolled



Primary Outcome: SIDS

- 66 infant deaths
 - 28 SIDS
 - 38 Known Cause of Death (KCOD)
- Multi-disciplinary consensus review
- Propensity Score
 - Recruitment location, maternal age, race, marital status, education, hx diabetes, parity, maternal arm circumference

EClinicalMedicine

Published by THE LANCET



Primary Outcome: SIDS

- Continued Drinking & Smoking beyond 1st trimester
 - Relative Risk for SIDS increased 11.79
 - Drinking alone - 3.95 increased risk
 - Smoking alone – 4.86
 - Known COD no relationship with drinking/smoking





Primary PASS Outcome: Stillbirth

- 145 stillbirths (82 after 28 wks GA)
- Drinking & Smoking beyond 1st trimester
 - **2.78 times risk** of late stillbirth (≥ 28 weeks GA)
 - compared with no exposure or those who quit before end of the end of the 1st trimester



Original Investigation | Obstetrics and Gynecology

Association of Prenatal Exposure to Maternal Drinking and Smoking With the Risk of Stillbirth

Hein Odendaal, MD; Kimberly A. Dukes, PhD; Amy J. Elliott, PhD; Marian Willinger, PhD; Lisa M. Sullivan, PhD; Tara Tripp, MA; Coen Groenewald, MD; Michael M. Myers, PhD; William P. Fifer, PhD; Jyoti Angal, MPH; Theonia K. Boyd, MD; Larry Burd, PhD; Jacob B. Cotton, BS; Rebecca D. Folkert, MD; Gary Hankins, MD; Robin L. Haynes, PhD; Howard J. Hoffman, MA; Perri K. Jacobs, BS; Julie Petersen, PhD; Nicolò Pini, PhD; Bradley B. Randall, MD; Drucilla J. Roberts, MD; Fay Robinson, MPH; Mary A. Sens, MD, PhD; Peter Van Eerden, MD; Colleen Wright, MD; Ingrid A. Holm, MD; Hannah C. Kinney, MD; for the Prenatal Alcohol in SIDS and Stillbirth (PASS) Network

Odendaal et al., 2021

South Dakota

INFANT DEATH review



FROM 2014 – 2018

146 BABIES DIED
IN SOUTH DAKOTA AFTER
HOSPITAL DISCHARGE

AMONG THE 146 DEATHS AFTER HOSPITAL DISCHARGE

74%

101

SLEEP
RELATED
DEATHS

35

NOT SLEEP
RELATED
DEATHS

10

UNKNOWN
DEATHS **



**IS'TIME'PI ICHUAN
OWAWICANYANKAPI**

PROTECTING BABIES WHILE THEY SLEEP

Infant Care Practices Study

Embracing culture, empowering parents

Goal: Create and test curriculum that incorporates both cultural knowledge and American Academy of Pediatrics recommendations to increase safety of infant sleep environments

Infant Care Practices

SESSIONS

1. Preparation stage
2. Identity as a mother
3. Identity as a family unit
4. The baby is here!
5. Living the connection



IS'TIME'PI ICHUAN
OWAWICANYANKAPI

PROTECTING BABIES WHILE THEY SLEEP

A curriculum for the family.



ECHO

Environmental influences
on Child Health Outcomes

A program supported by the NIH

Focus on key pediatric
outcomes that have a high
public health impact

PRE-, PERI-
AND POSTNATAL



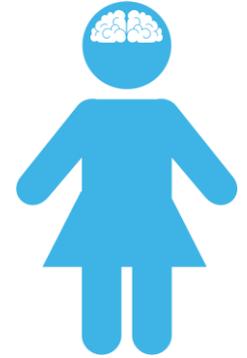
UPPER AND LOWER
AIRWAY



OBESITY

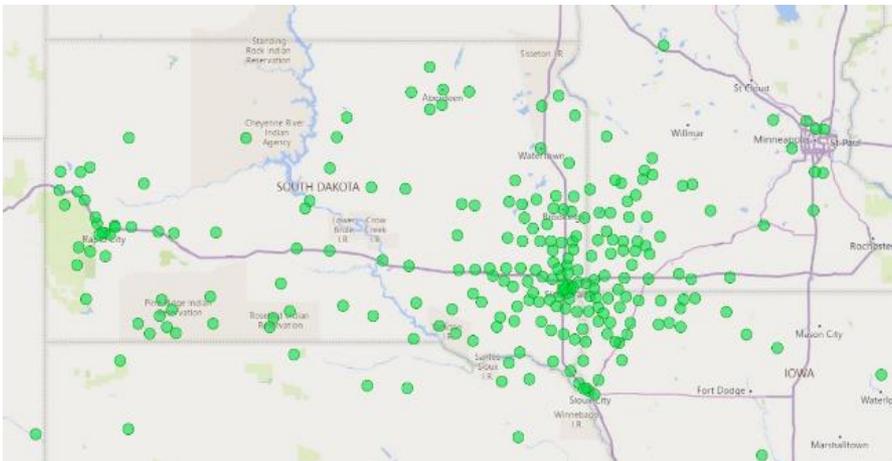


NEURO-
DEVELOPMENT



3,185 children enrolled

POSITIVE HEALTH

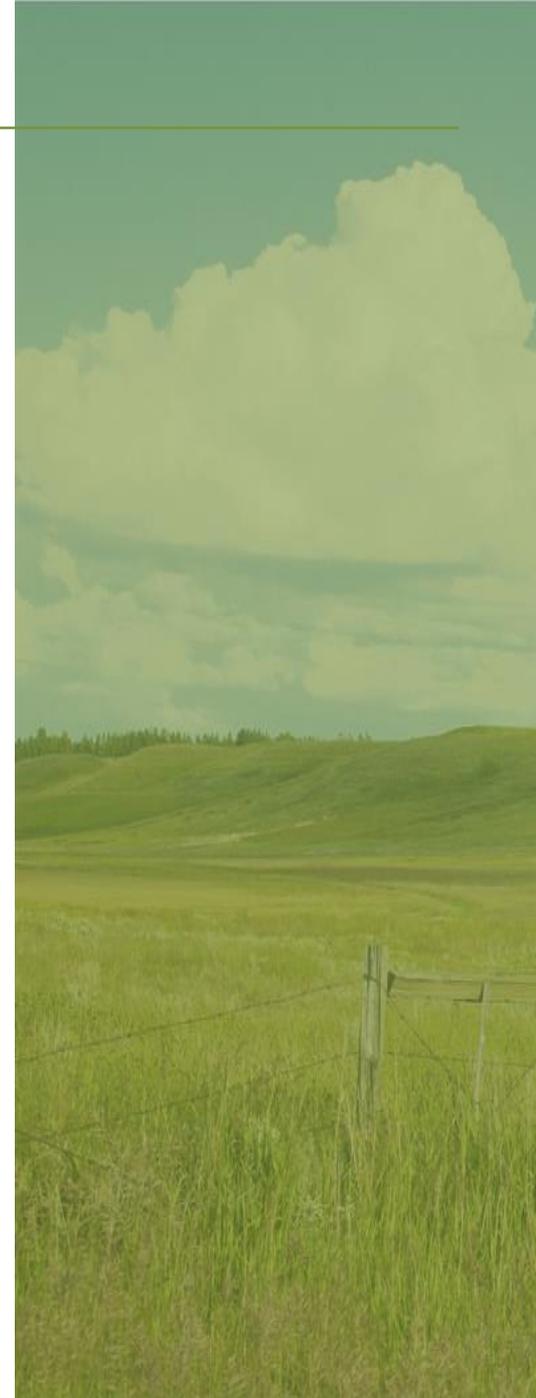
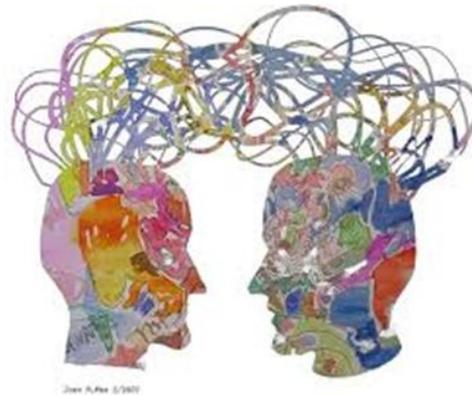


Recommendations to Commission

- Pregnancy = unique time when many focused on health & well-being
 - Interventions for mental health, substance use, health life style
- Early recognition of pregnancy & prenatal care is essential
- Prenatal & early childhood services = complex landscape
 - Identify ways to streamline access (e.g., prenatal vitamins)
 - Care coordination
- Attention to the Infant sleep environment is critical
 - Incorporate into prenatal and postnatal services

Funding Acknowledgements

- **Safe PASSage Study:** NICHD/NIAAAA/NIDCD U01/HD045935 (Elliott)
- **Safe Sleep:** NICHD R01/HD080544 (Elliott)
- **ECHO:** NIH OD UG3/OD023279 (Elliott)



Thank you



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