Mechanics of Perinatal Care Policies, Programs, and Quality Improvement Initiatives: Influencing Life Course Trajectories

Satellite Conference and Live Webcast
Thursday, January 31, 2013
10:00 – 11:30 a.m. Central Time

Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division

Faculty

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Presentation Objectives

- Describe appropriate metrics for evaluating perinatal policies and programs
- Discuss quality improvement practices in perinatal programs and provide examples

Presentation Objectives

- Discuss the roles of public health, clinical care, and health care systems in promoting perinatal quality improvement
- Summarize how perinatal policies and practice can have major influences on Life Course Trajectories

Leading Perinatal Health Outcomes

- Infant mortality
- Low birth weight – LBW
  - <2,500 or <1,500 g
- Preterm delivery
  - <37, <32, or <28 weeks
- Small for gestational age – SGA
  - <10% or 5%

Current Examples

- Healthy People 2020 Objective
  - 6.0 infant deaths per 1,000 live births
- HRSA's Title V Block Grant measures
- HRSA's Federal Healthy Start program mandate

Current Examples

- ASTHO Challenge
  - Reduce preterm births by 8% by 2014
- HRSA's COIN to Reduce Infant Mortality
  - Reduce infant mortality in 13 southern states

Current Examples

- ACOG's ReVITALize Obstetric Data Definitions

Notable Strengths of Leading Public Health Indicators

- Highlight major health inequities
- Internationally recognized and valued maternal and child health measures
- Leading indicators that summarize multiple factors, causes, and outcomes

Notable Strengths of Leading Public Health Indicators

- Data / measures are available at multiple levels:
  - Community, state, U.S., and internationally
- A recognized focus of interventions and prevention strategies worldwide

Program and Policy Metric Concerns of Leading Public Health Indicators

- Complex health and social-related outcomes
  - Difficult for one program to have impact by itself
  - Difficult to assure the impact is a program effect

Program and Policy Metric Concerns of Leading Public Health Indicators

- Few public health programs have demonstrated a consistent population impact on these outcomes
- Changes occur slowly and small in magnitude

Program and Policy Metric Concerns of Leading Public Health Indicators

- Some outcomes, such as infant mortality and very low birth weight, are rare events

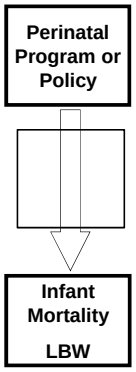
Complex Health and Social Outcomes

- Biological
- Genetic
- Epigenetic
- Environmental
- Infectious
- Social
- Health Care
- Behavioral
- Economic
- Cultural

⇨

- Infant Mortality
- LBW
- Preterm Delivery
- SGA

"Black Box Syndrome"



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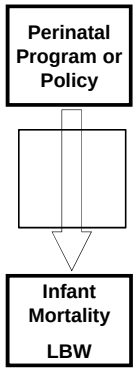
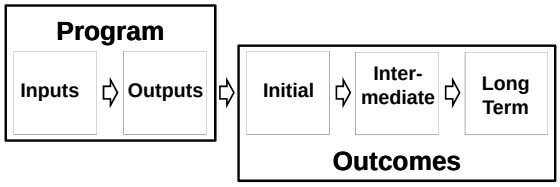


Logic Models Approach



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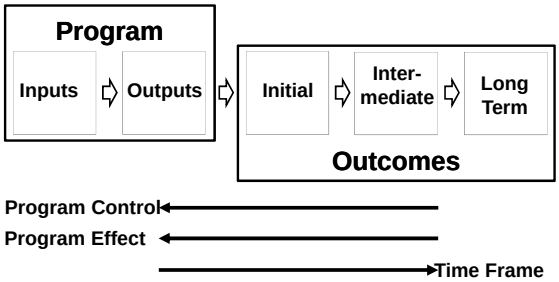
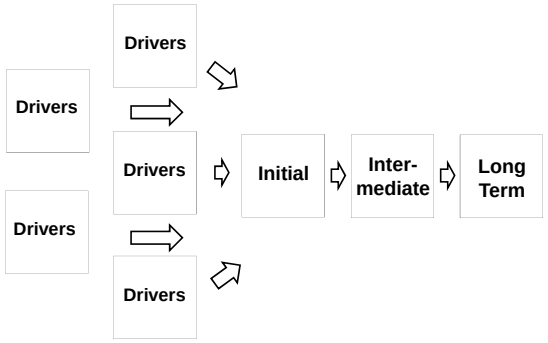
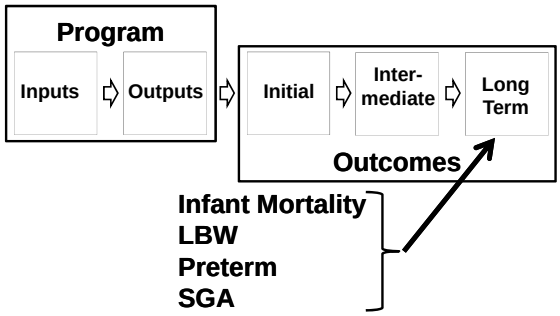


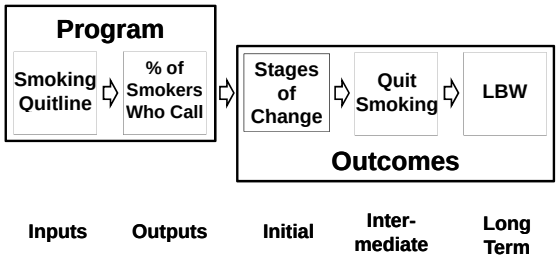
Quality Improvement Approach



Logic Models Approach



Maternal Smoking Example



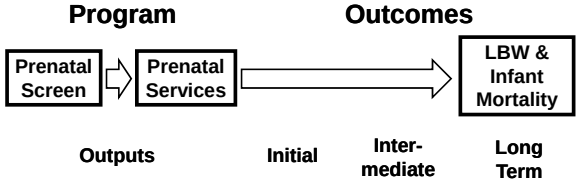
Advantages and Challenges

- Advantages
  - Uncovers "the black box"
  - Explains program or policy theory of effect
  - Shows where the effect occurs / doesn't
  - Gives quicker results in higher frequencies

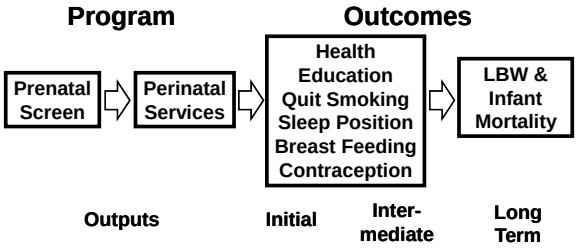
Advantages and Challenges

- Disadvantages
  - Difficult to identify theory of effect
  - Difficult to measure earlier effects

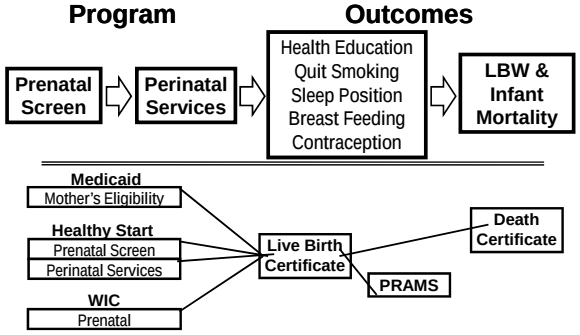
Past Florida Health Start Evaluations

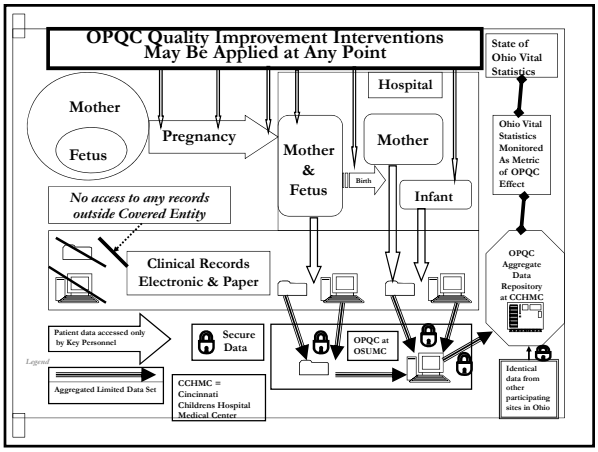


New Florida Health Start Evaluation



New Florida Health Start Evaluation Possible Through Data Linkages





Criteria for Selecting a Project

- **Documented outcome variation**
- **Solid evidence for intervention**
- **Clinician enthusiasm**
- **Interventions feasible to implement**
- **Successful improvement demonstrated elsewhere**
- **Population impact**

Birth of FPQC 2010

- **MOD Grant provides catalyst**
- **Decision to be multidisciplinary and center on both mother and newborn**
- **Decision to make Chiles Center at the USF College of Public Health a focus point to work with academics and community on real time solutions**

Birth of FPQC 2010

- **Decision to make first project "Elimination of Non-Medically Indicated Births <=39 weeks of Gestation"**
- **Clearly a project "right time and right place"**
- **Rest is history being presented**

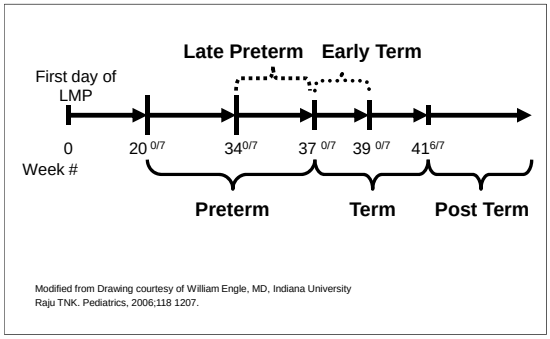
FPQC Goals

- **Engage perinatal health care stakeholders in the design, implementation, and evaluation of a data-driven process for value-added, cost-effective perinatal health quality improvement efforts**

FPQC Goals

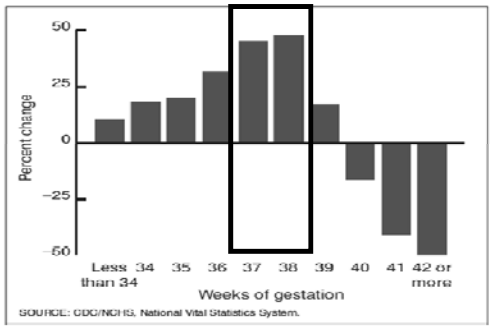
- **Build and sustain consensus, awareness, and support across the state regarding the value and benefits of participation in the FPQC**
- **Acquire the financial resources necessary for the ongoing development and sustainment of the FPQC**

Terminology



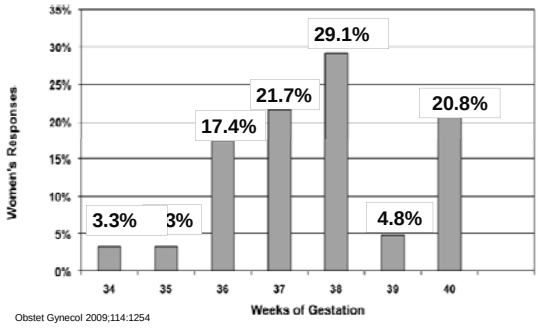
Modified from Drawing courtesy of William Engle, MD, Indiana University
Raju TNK. Pediatrics, 2006;118 1207.

Change in Distribution of Births by Gestational Age: United States, 1990-2006



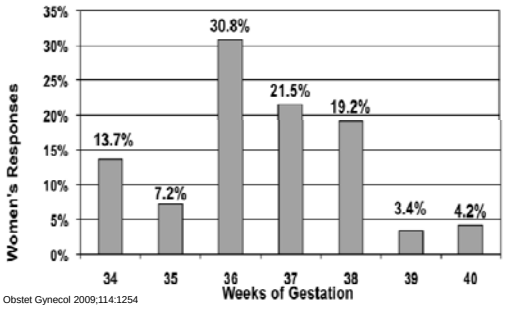
Martin JA, Hamilton BE, Sutton PD, Ventura SJ, et al. Births: Final data for 2006. National vital statistics reports; vol 57 no 7. Hyattsville, MD: National Center for Health Statistics. 2009.

The Gestational Age that Women Considered a Baby to be Full Term



Obstet Gynecol 2009;114:1254

The Gestational Age that Women Considered it Safe to Deliver



Obstet Gynecol 2009;114:1254

Complications of Non-medically Indicated (Elective) Deliveries Between 37 and 39 Weeks

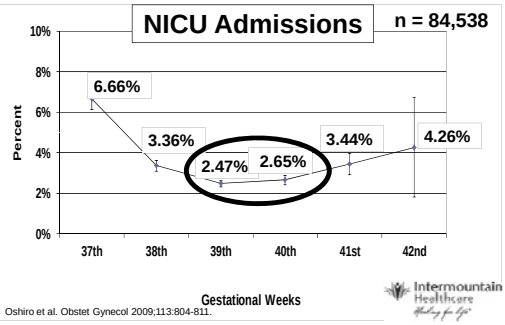
- Increased NICU admissions
- Increased transient tachypnea of the newborn (TTN)
- Increased respiratory distress syndrome (RDS)
- Increased ventilator support

Complications of Non-medically Indicated (Elective) Deliveries Between 37 and 39 Weeks

- Increased suspected or proven sepsis
- Increased newborn feeding problems and other transition issues

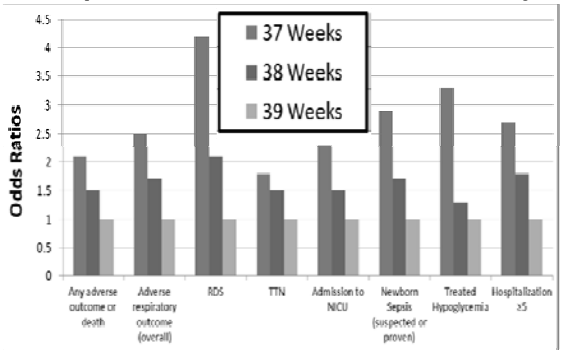
– See Toolkit for more data and full list of citations;
Clark 2009, Madar 1999, Morrison 1995, Sutton 2001, Hook 1997

NICU Admissions By Weeks Gestation Deliveries Without Complications, 2000-03

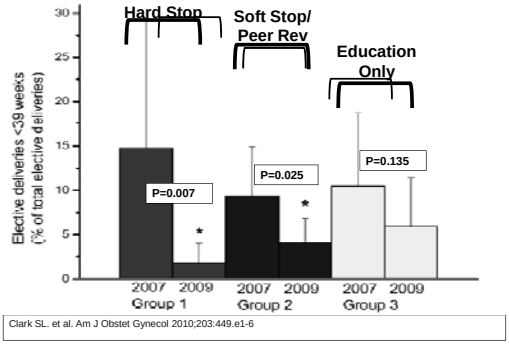


Oshiro et al. Obstet Gynecol 2009;113:804-811.

Adverse Neonatal Outcomes According to Completed Week of Gestation at Delivery



HCA Trial of 3 Approaches for Reduction of Elective Deliveries



Clark SL. et al. Am J Obstet Gynecol 2010;203:449.e1-6

Increased Infant Mortality (birth to 1 year) for Babies Born at 37 / 38 wks Gestation Compared to 39 wks or Greater

Study	Relative Risk compared to 39 wks	Absolute Increase per 1,000 births
Zhang (2009)[1] (US cohort, 1995-2001)	37 wk: 1.75 38 wk: 1.25	37 wk: 1.0 38 wk: 0.3
Donovan (2010)[2] (Ohio 2003-2005)	37 wk: 1.9 38 wk: 1.4	37 wk: 1.8 38 wk: 0.8
Reddy (NICHD)(2011)[3] (NCHS US 1995-2001)	37 wk: 1.9 38 wk: 1.4	37 wk: 2.0 38 wk: 0.5
Altman (2012)[4] (Sweden 1983-2006)	37 wk: 2.1 38 wk: 1.4	37 wk: 1.6 38 wk: 0.5

[1]J Pediatric 2009;154:358-62; [2]Am J ObstetGynecol 2010;203:58; [3]Obstet Gynecol 2011;117:1279-87; [4]BMJ Open 2012;2:e001152

Increased Infant Mortality (birth to 1 year) for Babies Born at 37 / 38 wks Gestation Compared to 39 wks or Greater

- **Results are quite consistent and show higher rates of observed infant mortality at 37 / 38 weeks than predicted for fetal mortality**

Cerebral Palsy Among Term and Post-term Births: NEW

- **Norwegian birth cohort of 1,682,441 singleton term births without congenital anomalies**
- **Followed for a minimum of 4 years (maximum of 20 years) with identified cerebral palsy in the National Health Insurance Registry**

Cerebral Palsy among Term and Post-term Births: NEW

- **Found that cerebral palsy is 2.3 times higher at 37 weeks and 1.5 times higher at 38 weeks than at 39 - 41 weeks**

– **Moster et al. JAMA 2010;304:976-982.**

CHIPRA Category E First Maternal Plan

- **Used available data to select specific pilot and other projects to undertake to improve maternal perinatal care**

CHIPRA Category E First Maternal Plan

- **Conducted a first project using the Plan-Do-Study-Act method, including measuring its impact on mothers / families using the March of Dimes / CMQCC Tool Kit in 6 hospitals, (January 1, 2011 to December 31, 2011) using a web portal and direct input of data**

CHIPRA Category E First Maternal Plan

- **Repeat the process using other advocates to select future projects and sites as funding permits**
- **Develop a "value-added" econometric proposal**

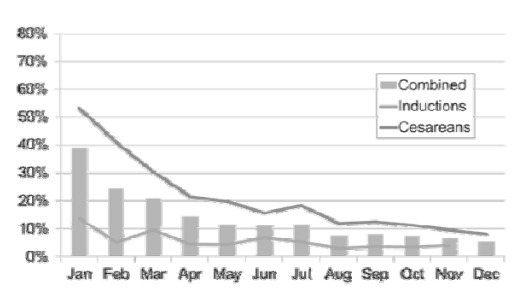
Methods

- Restricted live births to:
  - Singleton
  - Florida residents
  - Term (37 weeks or more)
  - No medical conditions prior to or during pregnancy

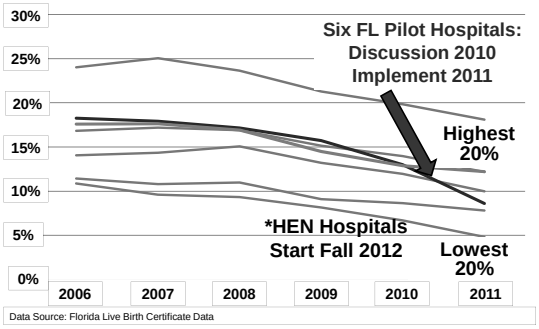
Methods

- Non-medically indicated:
  - Induction or cesarean
  - No labor
  - 37 or 38 weeks gestation
  - No joint commission indications

Florida Big 5: Reduction of NMI Deliveries <39 Weeks Gestation by Delivery Type (Six Pilot Hospitals - 2011)



Percent of NMI Single Live Births <39 Wks Among Term Births for Florida Hospitals by Quintile



Lessons Learned

- Need for hospital policy
- Need for consensus scheduling guidelines
- Implement “Hard Stop” process
- Empower the Nurses and Labor and Delivery team / support
- Administrative overt support

Lessons Learned

- Continuous data collection is superior in quality to intermittent assessment
  - Designate a “Key” person invested in project, train, access network to share

Lessons Learned

- Implement patient education in hospital and outreach to physician offices and community
- Market achievements!

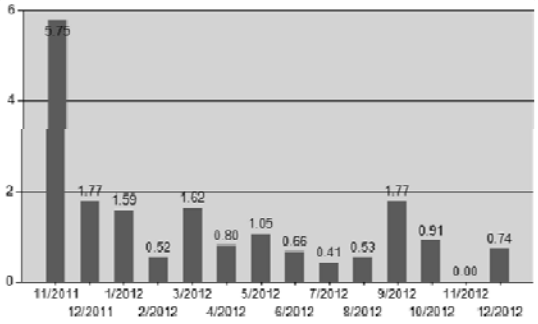
Challenges

- Engaging hospitals and payers
  - Develop strategies and tactics
- Need to develop economic impact statements
  - Value added to QI projects
- Need to enhance birth registry in order to collect QI perinatal data at point of service with rapid feedback

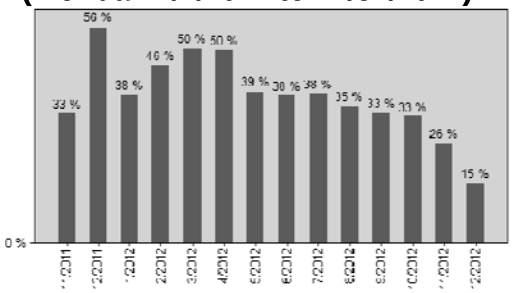
Challenges

- Interfaces to be developed with HIE and EHR to provide input of data and support clinical relevance
- Opportunity to provide input to payer policy development and safety incorporation in practice
- Repeat the collaborative process to select future projects as funding permits

FL NCABSI / 1,000 Line Days (51,859) 11/01/2011 to 12/31/2012

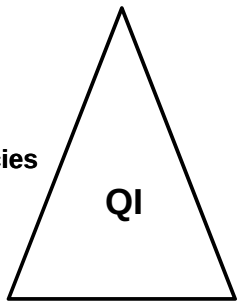


Percentage of Babies with Lines Continued After 120 ml/kg Enteral (Florida 11/1/2011 to 12/31/2012)



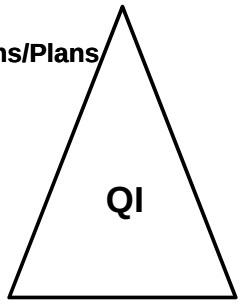
Promoting Perinatal Quality Improvement

- Clinical Care
  - Direction
  - Education
  - Guidelines / Policies
  - QI Management
  - Data



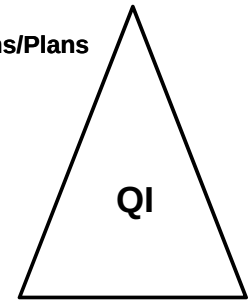
Promoting Perinatal Quality Improvement

- Clinical Care
- Health Care Systems/Plans
  - Leadership
  - Support
  - Rewards
  - Requirements
  - Resources



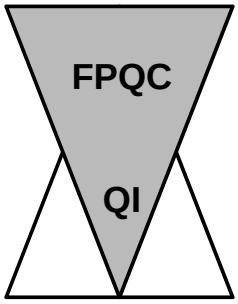
Promoting Perinatal Quality Improvement

- Clinical Care
- Health Care Systems/Plans
- Public Health
  - Population-focus
  - Accountability
  - Authority
  - Resources
  - Data/measures



Promoting Perinatal Quality Improvement

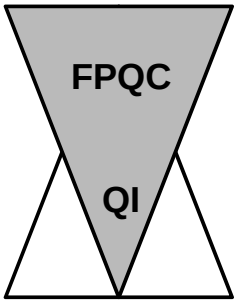
- Clinical Care
- Health Care Systems/Plans
- Public Health
- State Collaborative



Promoting Perinatal Quality Improvement

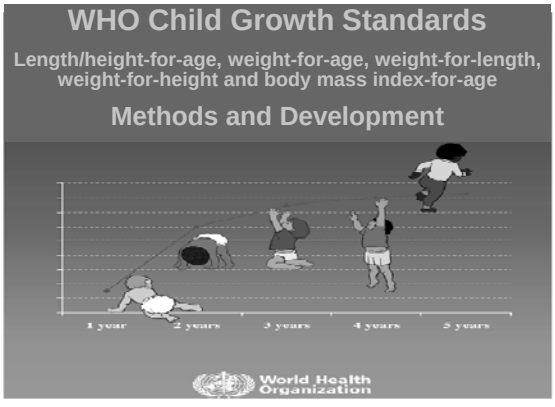
- Clinical Care
- Health Care Systems/Plans
- Public Health
- State Collaborative

march of dimes

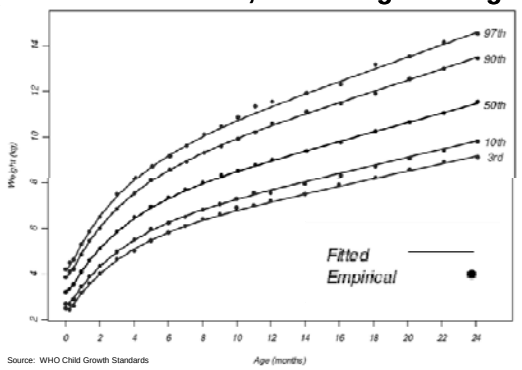


Examples

- Starting Florida Perinatal Quality Collaborative (FPQC)
- Promoting Non-Medically Indicated Deliveries <39 Weeks
- Studying "Right Place Right Time"

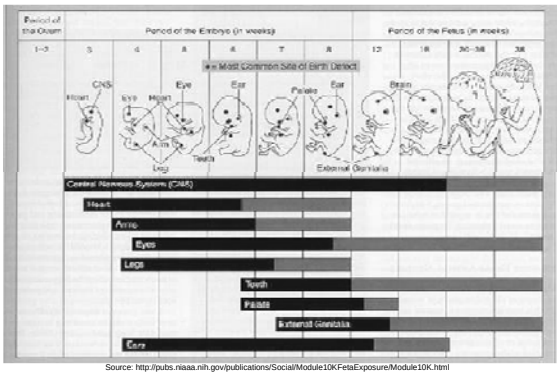


WHO Growth Chart, Girls Weight for Age



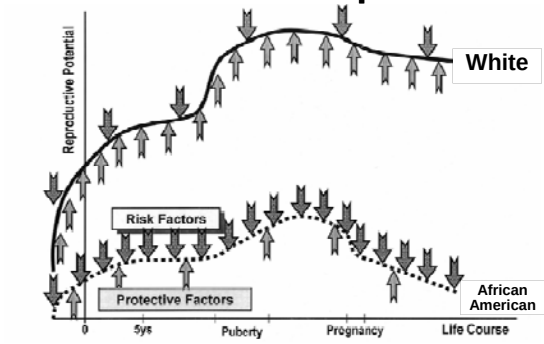
Source: WHO Child Growth Standards

Organogenesis During Pregnancy



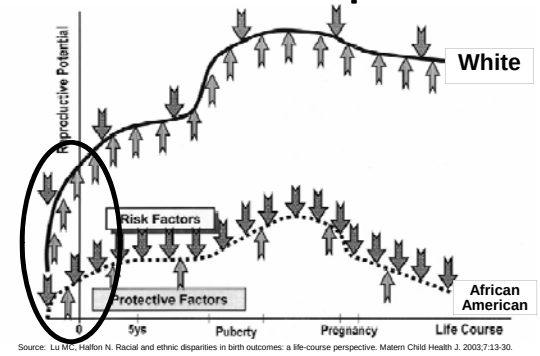
Source: http://pubs.niaaa.nih.gov/publications/Social/Module10KFetaExposure/Module10K.html

Life Course Perspective



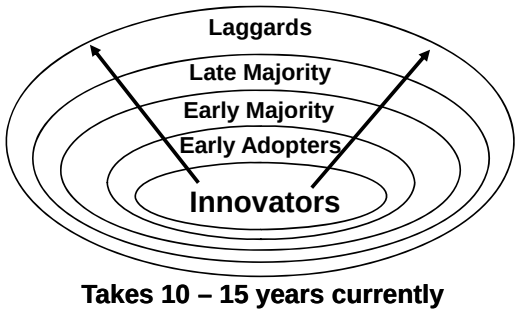
Source: Lu MC, Halfon N. Racial and ethnic disparities in birth outcomes: a life-course perspective. Matern Child Health J. 2003;7:13-30.

Life Course Perspective



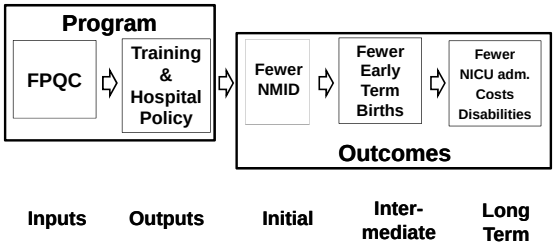
Source: Lu MC, Halfon N. Racial and ethnic disparities in birth outcomes: a life-course perspective. Matern Child Health J. 2003;7:13-30.

Diffusion of Evidence-Based Practice

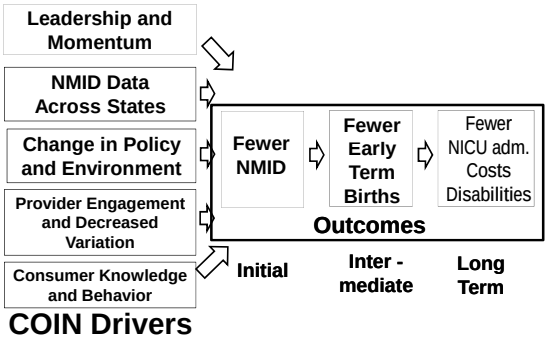


Takes 10 – 15 years currently

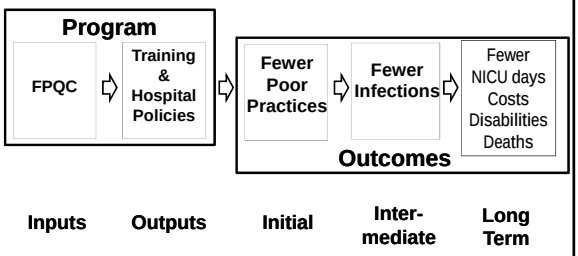
Life Course Impact of Reducing Non-medically Indicated Deliveries < 39 Weeks (NMID)



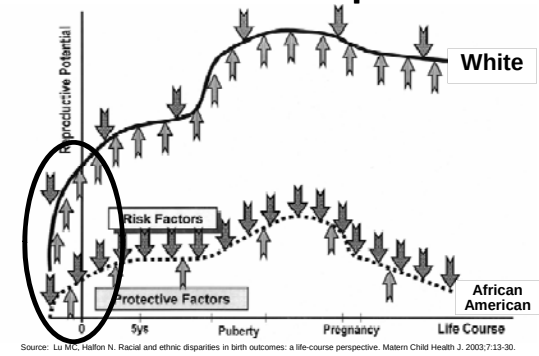
COIN Drivers for Reducing Non-medically Indicated Deliveries < 39 Weeks (NMID)



Life Course Impact of NICU Catheter Infections



Life Course Perspective



Source: Lu MC, Halfon N. Racial and ethnic disparities in birth outcomes: a life-course perspective. Matern Child Health J. 2003;7:13-30.

Presentation Summary

- **State Perinatal Quality Collaboratives require all of the partners to be effective**
  - **Clinical care, health care systems / plans, public health and more**
- **State Collaboratives can speed up the dissemination of evidence-based perinatal care practices**

Presentation Summary

- **State Collaboratives can impact initial, intermediate, and long term perinatal outcomes**
- **Preventing these risk factors, outcomes and / or their manifestations can alter the early life course trajectories**