Translating Obstetric Dogma into Precision Medicine and Population Health

ERIN A. S. CLARK, MD

MATERNAL-FETAL MEDICINE



DOGMA

...cannot be changed or discarded without affecting the system's paradigm...



Precision Medicine and Population Health

Examples of Obstetric Dogma

- *"Regional"* physician-to-physician consultation mechanisms
- "Siloed" approach to patient safety and quality initiatives
- *"One size fits all"* approach to prenatal care

Moving Beyond Obstetric Dogma

Beyond "regional" physician-to-physician consultation

- Use innovative technology
- Access rural and remote regions
- Address disparities in care
- Develop a workforce of skilled providers
- Integrate clinical care and research

Project ECHO®

•ECHO[®] Extension for Community Healthcare Outcomes

•Mission:

Expand the capacity to provide cost-effective, bestpractice care for common and complex diseases in rural and urban underserved areas.



Effects of Treatment on Hemoglobin Levels





ECHO vs. Referral or Telemedicine



Clinical Areas Served by ECHO at UUHSC

- Hepatitis C
- Advanced Liver Care
- Immune Disorders of the Gut
- Behavioral Health
- Med/Peds Residency ECHO
- Family Practice Nurse Practitioner ECHO
- UU Community Clinics Headache ECHO
- Chronic Pain & Headache Management
- Pregnancy Care (June 2015)
- Genetic Counseling for Oncology

UUHSC Project ECHO: Regional Map



Project ECHO: Participating Providers

- Physicians
- Advanced Practice Clinicians
- Midwives
- Nurses
- Interdisciplinary trainees



Project ECHO: Unique Patients Presented

742

- Patient presentation forms for each Project Echo specialty
- Data entered into REDCap database
- Potential for clinical research, including clinical trials

Project ECHO: First Glance

- •Expands capacity
- Reduces variability in care
- Increases rural/remote patient access to specialty care
- Provides continuing medical education
- Supports both primary and specialty providers
- Facilitates education of trainees

Project ECHO: Second Glance

Monitors outcomes

(may be part of a future "National Health Learning System")

- Supports broad-reaching clinical trials
- Applies precision medicine principles
- Promotes skilled workforce development
- Facilitates collaborative patient quality / safety initiatives

Moving Beyond Obstetric Dogma

Beyond "siloed" patient safety and quality initiatives, such as obstetric hemorrhage bundles

- Innovative use of technology
- Access healthcare systems across the State
- Address resource disparities
- Develop a workforce of skilled providers



Workgroup of the Partnership for Maternal Safety, within the Council on Patient Safety in Women's Health Care

 All major women's health care professional organizations, including ACOG, were represented.



Standardized, comprehensive, multidisciplinary obstetric hemorrhage programs have demonstrated significant reductions in maternal morbidity.

Increased use of appropriate interventions
Decreased ICU admissions
Reduction in blood product use

 Einerson et al., Does a postpartum hemorrhage patient safety program result in sustained changes in management and outcomes? AJOG 2015
Shields et al., Comprehensive maternal hemorrhage protocols reduce the use of blood products and improve patient saety. AJOG 2015.
Main et al., National Partnership for Maternal Safety Consensus Bundle on Obstetric Hemorrhage. Obstet & Gynecol 2015.

Obstetric Hemorrhage

- Leading cause of pregnancy-related mortality in both the U.S. and worldwide
 - Developed world: 1/100,000
 - Developing world 1/1,000
- Most preventable cause of maternal morbidity & mortality
 - Timely diagnosis, appropriate resources, and evidence-based management

Obstetric Hemorrhage: Incidence

- U.S. incidence is approximately 2-3%
- Most deaths occur within 24-48 hours of delivery
- Majority of these deaths are preventable
- Approximately 40% of postpartum hemorrhages occur in women without obvious risk factors

• Highlights the need for system preparedness

Obstetric Hemorrhage: UTAH

- Utah's Postpartum Hemorrhage Rate: 3.2%
- Marked variation by hospital
 - May reflect patient population
 - May reflect documentation and billing practices
 - May reflect effectiveness of postpartum hemorrhage prevention and treatment

Obstetric Hemorrhage: UTAH

- In Utah, hemorrhage was the third leading cause of maternal mortality between 2005-2012:
 - 1. Embolism
 - 2. Overdose/drug toxicity
 - 3. Hemorrhage
 - 4. Cardiac
 - 5. Infection

National Vital Statistics Report: Data from the Revised U.S. Birth Certificate, 2013

- Utah's maternal transfusion rate is >2 fold higher than the national average
 - Utah: 0.66% of live births (1/150)
 - U.S.: 0.28% of live births (1/350)

Percentage of Women with a Live Birth Who Received a Blood Transfusion, 2009-2013, Utah and U.S.



Utah's Postpartum Transfusion Rate

- Varies by hospital
- Larger hospitals do more transfusions
- Rate of transfusion is higher at smaller facilities

Utah's Postpartum Transfusion Rate

2012-2013 Utah Birth Certificate Data

	Transfusion Rate - Range
Less than 100 deliveries per year	2.2% – 4.3%
100 – 500 deliveries per year	0.3% - 1.2%
500 – 1,000 deliveries per year	0.7% - 1.8%
1,000 + deliveries per year	0.1% - 1.5%

Transfusion is a National Quality Measure

- Transfusion is considered an adverse pregnancy outcome
- A higher than average rate of maternal blood transfusions may reflect suboptimal prevention, recognition and management
- Knowledge of hospital transfusion rates may give some insight into facility performance

AMCHP: Every Mother Initiative

Launched a three-year initiative to address U.S. maternal mortality Over-arching goals:

- Help states strengthen their maternal mortality surveillance systems
- Use the data from these systems to develop and implement population-based strategies and policy change
- Reduce maternal morbidity and mortality



Every Mother Initiative

- Awarded 1-year grants to individual states
- Sought states with a vision
 - Identification of a key maternal mortality issue for the state
 - Ability to define a population-based strategy to reduce mortality
- Utah Department of Health was awarded the grant in 2015

Utah's Every Mother Initiative

- Assist delivering hospitals in implementing and/or optimizing the Patient Safety Bundle on Obstetric Hemorrhage
- Ultimate goal of reducing the rate of obstetric hemorrhage and associated morbidity and mortality

Utah's Every Mother Initiative

Project ECHO is critical to achieving this goal

- •All delivering Utah Hospitals were invited to participate
 - October 2015: Kick-off meeting
 - Twice monthly ECHO Sessions for 6 months
 - Spring 2016: Final on-site wrap-up meeting

Every Mother Initiative

Tuesday, October 13th, 2015 11:30 to 1:00 PM (MST)

"Recognition: definition of PPH, risk factor assessment, prevention, early recognition and rapid response using triggers"

Join us at the same time on October 27th for "Recognition: cumulative quantitative assessment of blood loss and AMTSL"



Project ECHO





Utah Project ECHO

Pennie.Johnson@utahtelehealth.net





Debra.Weight@utahtelehealth.net Gaylene.Woodall@utahtelehealth.net Rachael.Wetzel@utahtelehealth.net Wendy.Barlow@utahtelehealth.net



Wendy.Barlow@utahtelehealth.net

.

11.1

u0983601@utahtelehealth.net

Pennie.Johnson@utahtelehealth.net

Beaver Hospital Conf Cart

Utah Project ECHO



Christie.Painter@utahtelehealth.net

Debra.Weight@utahtelehealth.net

Rachael.Wetzel@utahtelehealth.net

(Phone) ECHO Project #1

Utah's Every Mother Initiative: Outcomes

Pre- and post-questionnaire to assess process change

 Assessment of hospital / healthcare system / State hemorrhage preparedness and compliance with the bundle

 Prospective tracking of hospital / healthcare system / State hemorrhage and transfusion rates

Utah's Every Mother Initiative: Partners

- •Utah Department of Health
- Intermountain Healthcare & all other healthcare systems
- University of Utah CCTS

➔ Potential for many future projects

Moving Beyond Obstetric Dogma

Beyond "One size fits all" approach to prenatal care

- Use innovative telemedicine technology
- Access rural and remote populations
- Address disparities in care
- Novel research opportunities

[Handout]

Translating Obstetric Dogma into Precision Medicine and Population Health

- Use innovative technology strategies
- Access rural and remote populations
- Address disparities in care
- Develop a workforce of skilled providers
- Cultivate applications for precision medicine
- Facilitate collaborative patient quality / safety initiatives
- Broaden our clinical trials potential