

IMPLICIT ICC:

Improving Birth
Outcomes through
Interconception Care at
Well Child Visits

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Outline:

- Context
- Background of IMPLICIT Network
- IMPLICIT ICC model of interconception care
- IMPLICIT Network Data
- Implementation of the IMPLICIT model at sites
- Discussion/questions

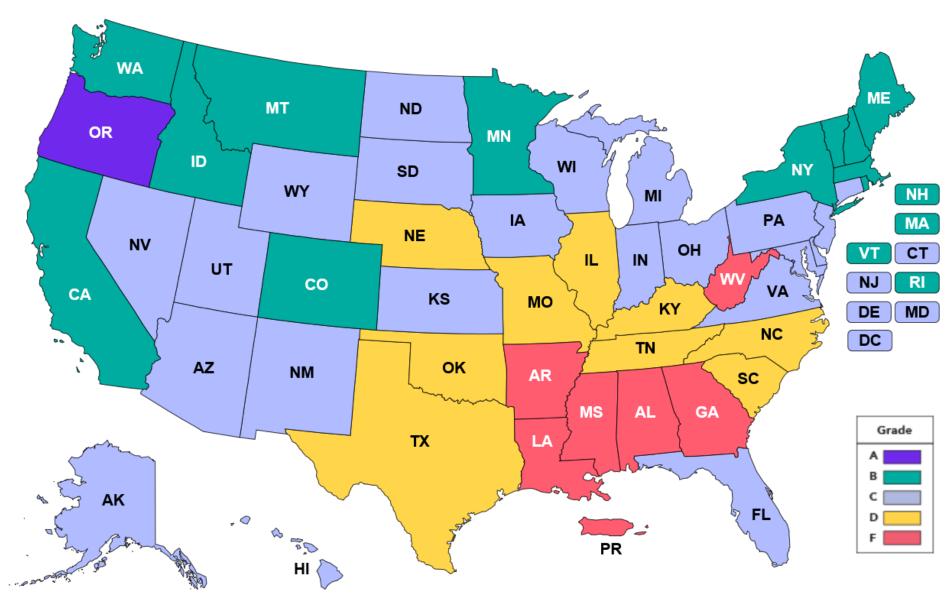


The Problem:

- Preterm birth and birth defects remain unacceptably high
- Maternal mortality in U.S. is rising
- Every year more than 700 women die because of pregnancy related issues and about 24,000 babies die before their 1st birthday
- Early and adequate prenatal care has not been successful in reducing low birth weight and prematurity
- Many modifiable risks for poor birth outcomes occur prior to pregnancy
- <50% of pregnancies are unintended
 - Opportunities to modify risk are often not planned
- Postpartum, mothers bring children to doctors though may not seek care for themselves

2019 Premature Birth Report Cards





Grades determined by March of Dimes based on preterm birth rates from National Center for Health; https://www.marchofdimes.org/mission/prematurity-reportcard.aspx



NORTH CAROLINA

PREMATURITY GRADE

D+

PRETERM BIRTH RATE

10.4%



PRETERM BIRTH RATES BY COUNTIES AND CITY

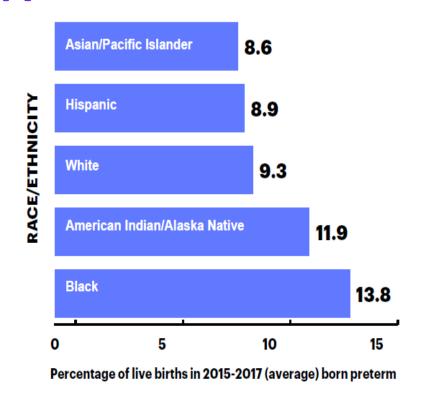
COUNTY	GRADE	PRETERM BIRTH RATE	CHANGE IN RATE FROM LAST YEAR
Cumberland	D-	11.2%	Improved
Durham	C-	10.1%	Worsened
Forsyth	F	12.6%	Worsened
Guilford	D	10.8%	Worsened
Mecklenburg	C-	10.3%	Worsened
Wake	В	8.9%	No change



NORTH CAROLINA

PRETERM BIRTH RATE BY RACE AND ETHNICITY

The March of Dimes disparity ratio measures and tracks progress towards the elimination of racial/ethnic disparities in preterm birth. It's based on Healthy People 2020 methodology and compares the group with the lowest preterm birth rate to the average for all other groups. Progress is evaluated by comparing the current disparity ratio to a baseline disparity ratio. A lower disparity ratio is better, with a disparity ratio of 1 indicating no disparity.



In North Carolina, the preterm birth rate among black women is 48% higher than the rate among all other women.

DISPARITY RATIO:

1.28

CHANGE FROM BASELINE:

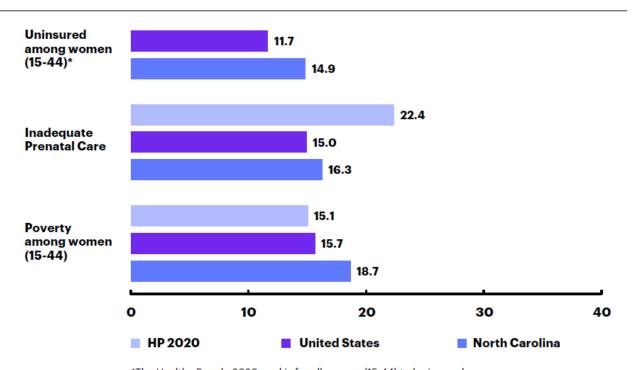
No Improvement



NORTH CAROLINA MATERNAL AND INFANT HEALTH: CONTEXT AND ACTIONS

SELECTED SOCIAL DETERMINANTS OF HEALTH

Our unequal society has negative consequences for health. Factors such as these are linked to adverse maternal and infant health outcomes overall. Many other structural factors and inequities influence the health of mothers and babies, especially for Black, American Indian and Alaska Native women. For example, income, health insurance status and prenatal care access are traditionally considered protective factors, but if they are held constant, racial and ethnic disparities persist. March of Dimes is collaborating with others to confront social and structural determinants of health, while identifying solutions that help alleviate the negative impacts of such inequities.



*The Healthy People 2020 goal is for all women (15-44) to be insured.

The IMPLICIT Network



IMPLICIT Network: An FMEC Collaborative

Interventions to Minimize Preterm and Low birth weight Infants using Continuous Improvement

Techniques

Mission: The IMPLICIT Network is a family medicine maternal child health learning collaborative focused on improving birth outcomes and promoting the health of women, infants, and families through innovative models of care, quality improvement and professional development for current and future physicians







IMPLICIT Network: An FMEC Collaborative

- Established in 2003
- Initial work during pregnancy (IMPLICIT Pregnancy)
- Current work Interconception Care (IMPLICIT ICC)
- Future work 4th Trimester (IMPLICIT 4th Trimester)

With support from:











IMPLICIT Network: An FMEC Collaborative

Vision: To help create a future where mothers are fully supported to be healthy and have healthy babies

Values: The work of the IMPLICIT Network is rooted in the following core values:

- Commitment: Improving maternal health one woman and a time
- Innovation: Developing methods to improve the health of women, children and families
- **Education:** Training future physicians and health care providers to impact the maternal health in their communities
- Collaboration: Fostering an environment where all specialties can work towards birth equity and health equality for all









- Received Pennsylvania March of Dimes **Community Grants** \$129,076 for three years
- Moved Network **HUB to UPMC** Shadyside

2015:

- Transitioned to Phase 2 data collection:
- Unified Network sites
- Simplified clinical screening questions
- Improved data collection (especially depression)
- Established IMPLICIT Leadership Council
- •Began case management to move beyond screening rates to improve maternal behaviors in Fall
- Presented during Infant Mortality COIIN webinar
- Presented at March of **Dimes Prematurity Prevention Summit**

2016:

Received Pennsylvania Department of Health funding in 2016: \$665,000 for 3 ½ years

- Recommended as March of Dimes intervention for Interconception care
- Published "Interconception Care for Mother During Well-Child Visits with Family Physicians: AN IMPLICIT Network Study" in **Annals Family Medicine** July-August 2016



- Released IMPLICIT Interconception Care (ICC) Toolkit in collaboration with the national March of **Dimes**
- •IMPLICIT Leadership Council met and created a new identity for the Network:
- •The IMPLICIT Network- An FMEC Collaborative is a family medicine maternal child health learning collaborative focused on improving care for women, infants, and families through faculty, resident, and student development and quality improvement.
- Actively developing strategies to assess maternal behavior change



- Published "Delivering Interconception Care **During Well-Child** Visits: An IMPLICIT Network Study" in Journal of American **Board of Family** Medicine in March **2018**
- Actively developing IMPLICIT 4th Trimester model of care
- Received Pennsylvania Department of Health funding in 2020 for 3 years
- Developing Health Disparities Initiatives for the IMPLICIT **Network**

2011-2012:

- Collected **Baseline data**
- Implemented ICC Phase 1 with support from PA American Academy of **Pediatrics** \$62,500

IMPLICIT ICC Model Rationale: Incorporate maternal assessments into well child visits

- Mothers bring children to well child visits though may not seek care for themselves
- Mother's health and behaviors directly impact child's health – positively and negatively
 - Tobacco use, depression
- Women accept inquiry and advice about own health at pediatric visits
 - Even if not their provider



2020 IMPLICIT NETWORK ICC SITES

Tennessee

Alabama

Mississippi

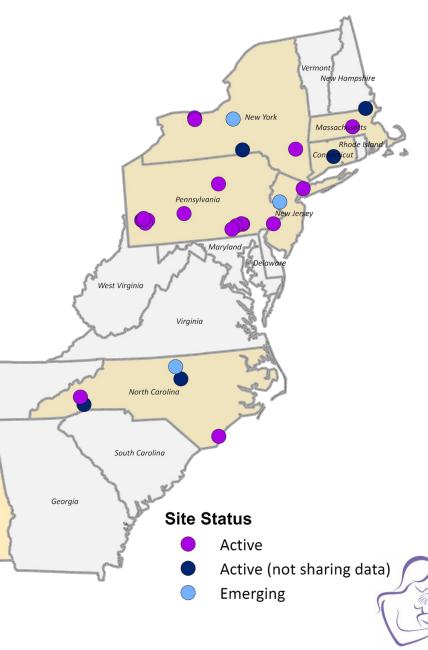
30 sites total

 28 sites implemented ICC as Standard of Care

21 sites share ICC data

with the Network via

REDCap



IMPLICIT Interconception Care (ICC) Model



Focus on 4 behavioral risks affecting future birth outcomes

Smoking

Depression

Family planning & birth spacing

Multivitamin with folic acid use

IMPLICIT ICC Model



IMPLICIT ICC Model: Smoking

- 20% of smokers quit during pregnancy
- 70% who quit will relapse within 6 months postpartum

- Assess maternal smoking status
- Recommend cessation using 5-As:
 - Ask
 - Advise to quit
 - **Assess** willingness to quit within 30 days
 - Assist with ways to quit
 - Arrange follow-up



IMPLICIT ICC Model: Depression

- Symptoms occur in 20-40% of women during or postpartum
- Depression has a peripartum recurrence of 40%
 - Administer 2 question screen for depression, if positive give PHQ-9 OR administer EPDS/PHQ-9
 - If positive risk for depression
 - Assess for safety and severity of symptoms
 - Refer immediately if suicidal or homicidal ideation present
 - Arrange for follow up services



IMPLICIT ICC Model: Family Planning

- Unintended pregnancy and short interpregnancy interval increase risk of low birth weights and prematurity
- Antenatal counseling does not show increase in postpartum contraception use
- Many women miss postpartum visits
 - Assess women for contraception use in context of Reproductive Life Planning
 - Educate about benefits of longer interpregnancy interval
 - Offer contraception or arrange appointment or referral



IMPLICIT ICC Model: Multivitamin

- Routine folic acid reduces the rates of neural tube defects by 66%
- Multivitamin w/folic acid is associated with many additional benefits for improved birth outcomes
- Only 24% of US women consume, less than 1 in 5 know

- Assess women for multivitamin with folate use
- Educate about benefits of folate and multivitamin
- Offer prescription to all women



IMPLICIT ICC Model

- √ Repeatedly <u>screen</u> mothers during WCVs from 0-24 months of age for behavioral risk factors
- √ Assess current risks at each WCV 0-24 mo
- √ Reinforce desired behaviors
- ✓ <u>Connect</u> with primary providers or community resources to address risks
- √ Provide prescriptions and/or free MVIs as needed
- √ Collect and analyze data
- ✓ <u>Develop strategies</u> to improve care delivery and patient outcomes



IMPLICIT NETWORK SITES



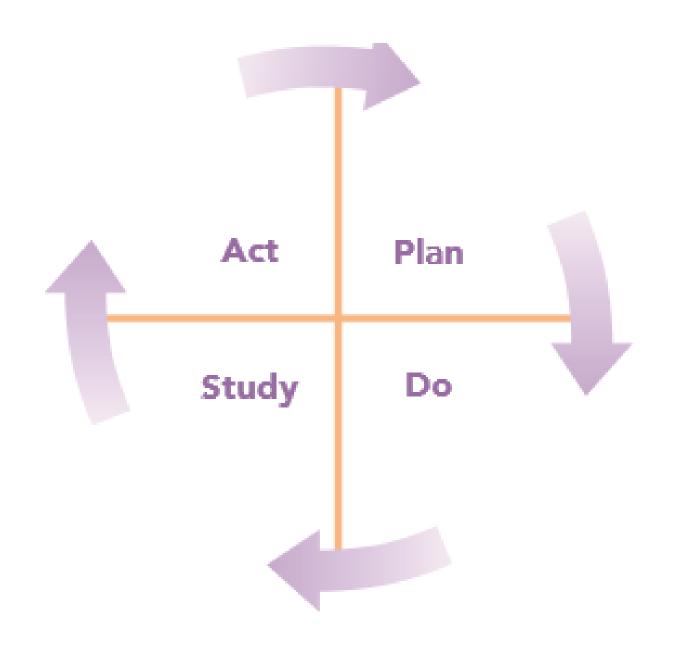
Participating Sites	State	Network Status
Anthony Jordan HC*	NY	Active- not sharing data
Blue Ridge Community HC	NC	Active
Forbes FMR*	PA	Active
Hunterdon Medical HC	NJ	Emerging
IFH Mid-Hudson Family Practice FMR	NY	Active
IFH Walton/Bronx HC	NY	Active
Lancaster General Hospital Downtown FMR	PA	Active
Lancaster General Hospital Family and Maternity Medicine HC	PA	Active
Lancaster General Hospital Twin Rose HC	PA	Active
Greater Lawrence FMR	MA	Active- not sharing data
Middlesex Hospital FMR	СТ	Active- not sharing data
Mountain Area Health Education Center (MAHEC) FMR	NC	Active
New Hanover FMR	NC	Active
Penn State Hershey	PA	Emerging
UHS Wilson FMR	NY	Active- not sharing data
University of Alabama FMR	AL	Active
University of Massachusetts FMR	MA	Active
University of Mississippi FMR	MS	Active
University of North Carolina Chapel Hill FMR	NC	Active
University of North Carolina PHS Prospect Hill FMR	NC	Active- not sharing data
University of Pennsylvania FMR	PA	Active
University of Rochester Medical Center FMR	NY	Active
UPMC Altoona FMR	PA	Active
UPMC McKeesport FMR	PA	Active
UPMC Shadyside FMR	PA	Active
UPMC St. Margaret FMR	PA	Active
UPMC Williamsport FMR	PA	Active
UPMC Theiss HC	PA	Active
Upstate Medical University FMR	NY	Emerging
Wellspan York FMR	PA	Active

^{*} HC = Health Center FMR = Family Medicine Residency

Network Data

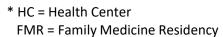


Quality Improvement



Participating Sites	Dates of WCV	Mom/Baby Dyads	Total WCV	WCV Mom Present Rate %	ICC Screen Rate % (includes All or Partial ICC Visits)
Anthony Jordan HC*	Jun 2016 - Jun 2018	76	96	100.0	100.0
Blue Ridge Community HC	Feb 2019 - Jul 2020	869	7,033	98.1	25.8
Forbes FMR*	Jun 2017 - Jul 2020	148	346	96.5	99.4
IFH Walton/Bronx HC	Apr 2017 - Aug 2019	999	3,539	92.6	95.1
MAHEC FMR	Feb 2015 - Jun 2020	3,322	16,971	94.6	71.6
IFH Mid-Hudson Family Practice FMR	May 2015 - Aug 2019	1,520	6,933	90.6	94.1
New Hanover FMR	Apr 2015 - Mar 2020	946	3,122	93.2	87.0
Uni. of Alabama FMR	Jan 2017 - Jul 2020	2,022	3,840	98.2	60.5
Uni. of Rochester Medical Center FMR	Mar 2015 - Jan 2020	1,396	2,935	98.4	89.8
University of Massachusetts FMR	Jul 2017 - Nov 2020	1,358	4,855	95.0	86.7
University of Mississippi FMR	Mar 2017- Dec 2019	7,739	23,207	99.6	88.8
Uni. of North Carolina Chapel Hill FMR	Jan 2019 - Nov 2019	180	17	93.3	82.0
University of Pennsylvania FMR	Jul 2014 - Jun 2020	1,063	1,858	90.2	72.3
LGH Family and Maternity Medicine HC	Aug 2016 - Jun 2020	403	1,688	90.3	83.5
LGH Downtown FMR	Jun 2015 - Jun 2020	2,257	9,985	92.4	76.9
LGH Twin Rose HC	Jun 2015 - Jun 2020	1,171	4,782	93.3	60.0
UPMC Altoona FMR	May 2019 - Jul 2020	162	367	97.8	66.0
UPMC Theiss HC	Nov 2016 - Jun 2020	148	426	93.9	82.2
UPMC McKeesport FMR	Dec 2014 - Aug 2021	786	2,378	92.9	76.8
UPMC Shadyside FMR	Nov 2014 - Jul 2020	700	2,427	94.4	83.3
UPMC St. Margaret FMR	Dec 2014 – Jul 2020	1,315	4,505	92.4	69.8
UPMC Williamsport FMR	Nov 2015 – Jul 2020	547	1,615	95.7	100.0
Wellspan York FMR	Oct 2017 – Jun 2020	397	746	96.5	97.8
All Sites	Total	29,524	103,671	95.1	77.3

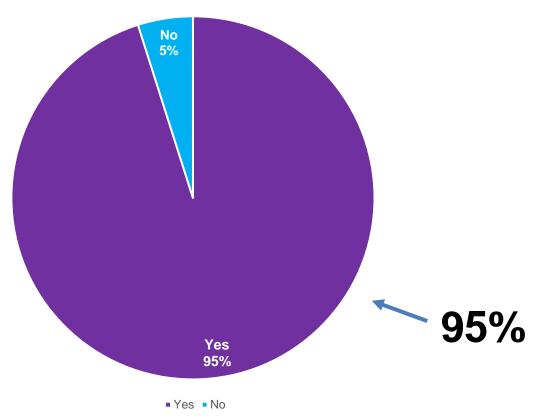
IMPLICIT Network ICC Cumulative Screening Rates





Mother Present Rate at WCV

(n=103,671)



IMPLICIT Network Data

Jan 2016- Jun 2020



Network Maternal Demographic Data

Cumulative Race Summary			
Race	Frequency	Percent	
White	7,658	36.9%	
<mark>Black</mark>	<mark>8,707</mark>	<mark>42%</mark>	
Am. Indian or AK Native	<mark>69</mark>	<mark>0.3%</mark>	
Asian	447	2.2%	
Native HI or Other PI	65	0.3%	
Other	2,780	13.4%	
Unknown	1,001	4.8%	
Missing	9,211	NA%	
Total	29,938	100%	

Cumulative Ethnicity Summary

Ethnicity	Frequency	Percent	
<mark>Hispanic</mark>	<mark>2,835</mark>	<mark>12.5%</mark>	
Non-Hispanic	17,921	79%	
Unknown	1,942	8.6%	
Missing	6,833	NA%	
Total	29,531	100%	



Network Maternal Demographic Data

Cumulative Insurance Summary			
Insurance Type	Frequency	Percent	
Medical assistance	<mark>11,641</mark>	<mark>55.8%</mark>	
Private insurance	3,300	15.8%	
Self-pay	<mark>3,818</mark>	<mark>18.3%</mark>	
Unknown	2,108	10.1%	
Missing	8,664	NA%	
Total	29,531	100%	

Maternal Education Summary

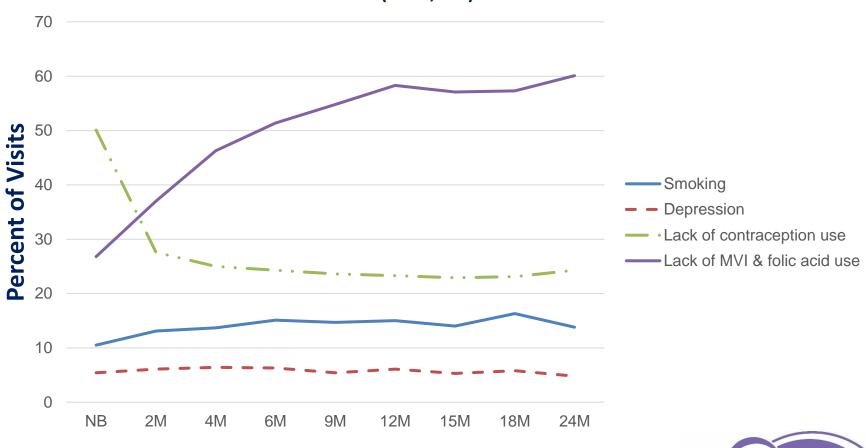
Education Level	Frequency	Percent
High school degree or equivalent (GED)	<mark>5,766</mark>	<mark>46.1%</mark>
Less than High school degree or equivalent (GED)	<mark>1,959</mark>	<mark>15.7%</mark>
More than High school degree or equivalent (GED)	4,785	38.2%
Missing	17,021	NA%
Total	29,531	100%



Network Risk Factor Prevalence Data

Risk Factor Prevalence at Associated WCV

(n=76,238)



IMPLICIT Network Data

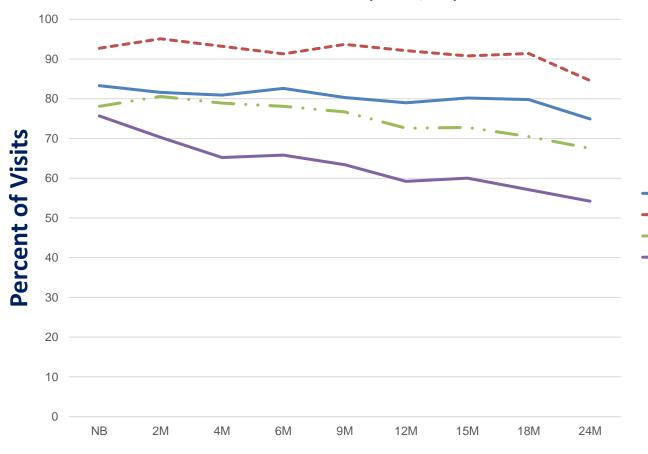
Jan 2016- Jun 2020



Network Intervention Data

Interventions Provided at Associated WCV







Depression

Lack of contraception use
 Lack of MVI & folic acid use

IMPLICIT Network Data

Jan 2016- Jun 2020

Network Data: Behavior Change

Collaborative

Behavior Change By Unique Mother/Child Dyad

Risk %

+ risk present at any WCV

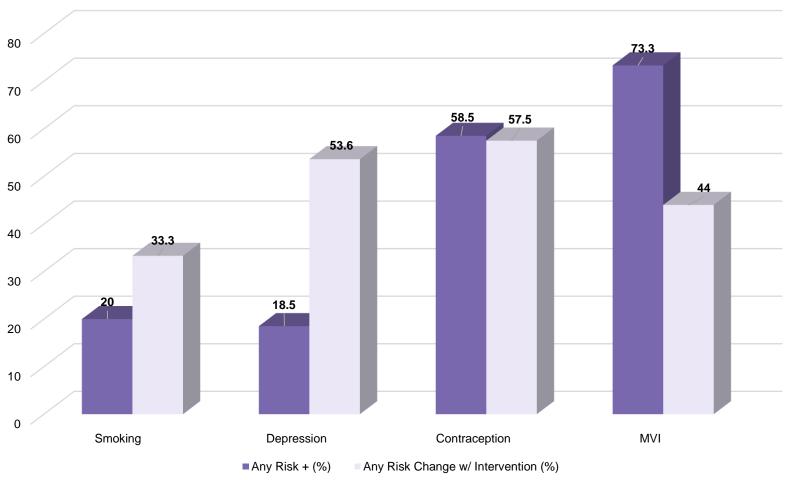
Change %

• if mom was at risk at any visit, at the next visit where the risk was assessed the risk was not present



IMPLICIT ICC Maternal Behavior Change

Jan 2016 through June 2020





An IMPLICIT Story

- Mother present at 9 month WCC
- IMPLICIT ICC risks performed all 4 positive
 - Restarted smoking
 - Stopped birth control pill but did not want to become pregnant
 - Screened positive for depression with increased stress at home
 - Stopped multivitamins
- Same-day interventions: MVIs, connected w/ behavioral health for assessment and support, 5As brief intervention for smoking, discussed reproductive goals
- Follow up in 2 weeks later for depression and Nexplanon placement
- At 15 month WCV all 4 screens showed change

IMPLICIT ICC Maternal Behavior Change

- Without ICC, these moms would likely receive **no additional care** to address these risk factors
- Risk has to be assessed at more than one visit (mom has to be present for screening over multiple visits)
 - On average we see moms at 4/9 potential WCV throughout the 24-month period
- Mothers/children are constantly aging in and out of our ICC cohorts
- Behavior change is assessed in a binary nature (i.e. positive behavior change or no behavior change)
 - Ex. Smoking reduction does not count as behavior change (reducing from 2 packs/day to 1 pack/day
- Over the past 5 years, **new sites have implemented ICC** and began sharing data with the Network. This does affect our maternal behavior change numbers
 - Ex. Altoona came on in June 2019, they don't have a full year of WCVs



IMPLICIT ICC Data Summary

- Mothers attend 95% of their child's WCV
 - WCVs are an opportune time to screen
- Modifiable maternal risks were successfully identified during brief screenings at WCVs
 - Mothers screened positive for one or more behavioral risks at 63% of visits
- Women continue to screen positive for behavioral risks despite high intervention rates
- Additional strategies are needed to educate and modify maternal behaviors
- ICC is a brief, innovative, sustainable model that can be used to improve maternal health, the health of families and the health of future pregnancies

IMPLICIT ICC Model Summary

- IMPLICIT has developed an ICC model with:
 - Refined evidence based focus
 - Clinical screening tools
 - Provider training
 - Patient education materials
 - Data management system
- Outcomes of nearly 103,671 WCVs
 - Model CAN be implemented at WCV
 - Results are promising for identifying maternal risks and encouraging healthy behavior choices



IMPLICIT Interconception Care Implementation

ICC Implementation: Building an ICC Team

- Each site must identify a Provider Champion
- Success depends on establishing an ICC Team
- Time and energy is needed to implement and maintain/improve, funding is helpful

Members may include:

- Physicians
- Advanced Practitioners
- Residents
- Nurses
- Office Managers
- Medical Assistants
- Project Coordinator
- Pharmacists
- Medical Students
- Electronic Health Record Experts
- Data Analysts



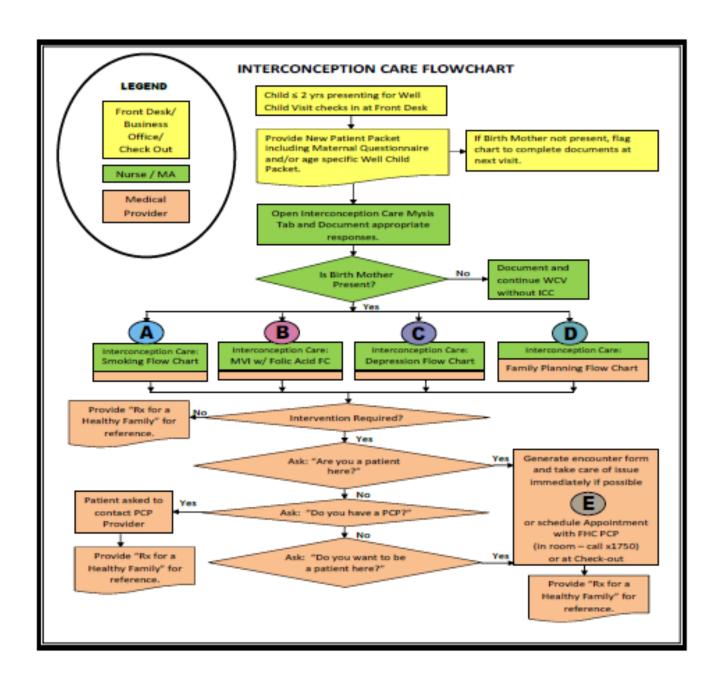
ICC Implementation: Developing workflows

- Need to develop workflow to administer ICC screen during WCVs
- Successful models do not rely entirely on the physician to remember to screen for ICC

Things to consider:

- Engage the entire office (front to back)
- What will work in your existing office flow?
- Do you need materials in different languages?







ICC Implementation: Addressing Positive Screens

- Need to develop workflows for addressing positive screens, especially if mom is not a patient
- Additional appointments or referrals often needed to improve maternal health
- Some sites are testing case management strategies

Workflows for addressing positive depression screens are crucial for acute suicidality/homicidality since screening occurs during WCV

Most sites have patient education materials that focus on the four risk factors to educate mothers



IMPLICIT ICC Patient Education

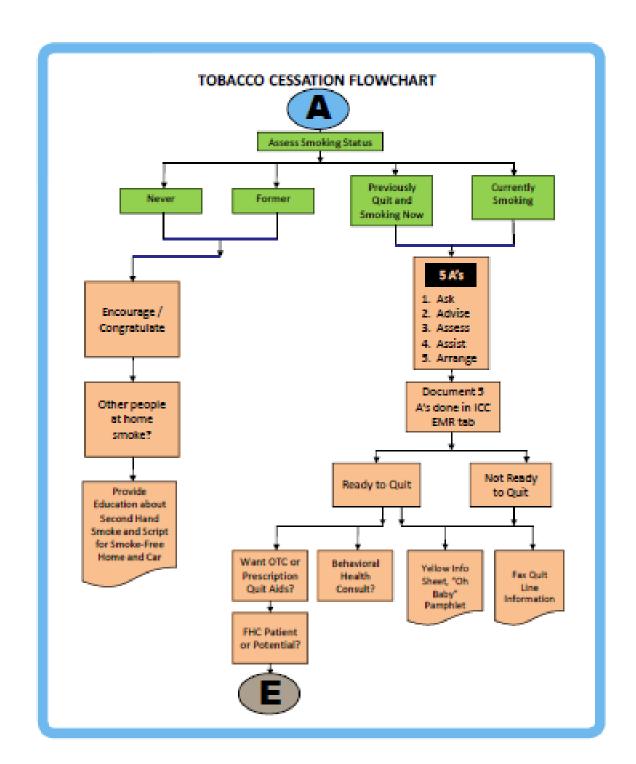






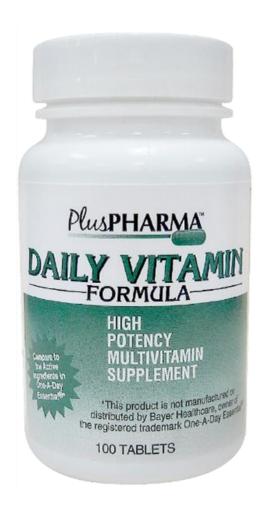








Free Multivitamins and Prenatal Vitamins







ICC Implementation: Data collection tools

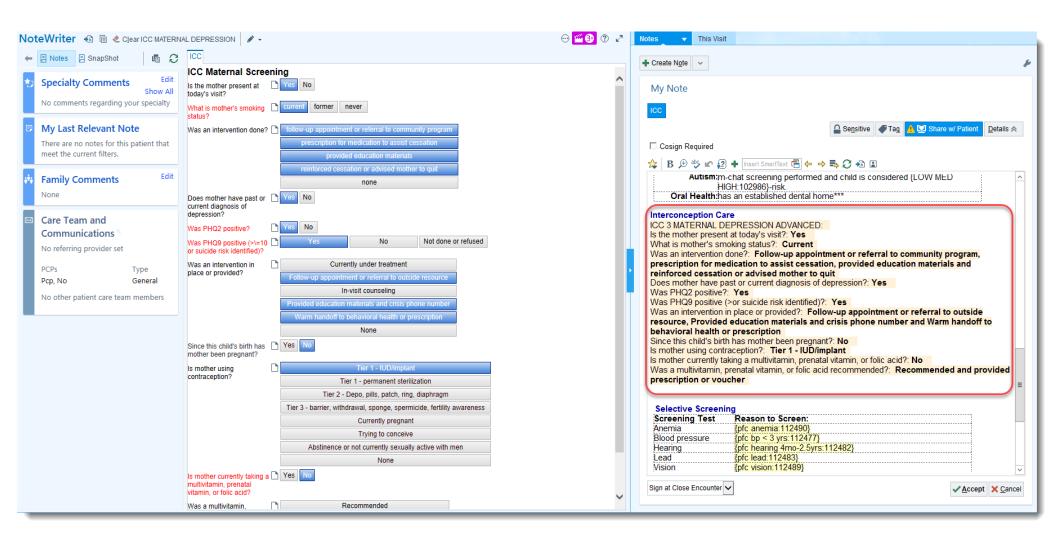
- Sites must collect ICC visit data, as well as maternal demographics
- Recommended that ICC screening is built into the Electronic Health Record (EHR), although a paper form may work

IMPLICIT Network sites have developed ICC EHR templates for:

- EPIC
- Allscripts
- Centricity



ICC Implementation: Data collection tools

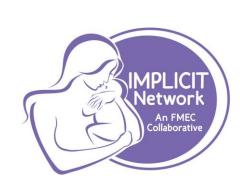


ICC Implementation: Data entry tools

- Once ICC data is collected at individual sites, it is shared in the Network's data management system, REDCap
- Data can be entered by hand or formatted to upload multiple visits at once using a data import

Most sites work with a coordinator or data entry assistant to enter data in REDCap

Using data in REDCap, Network coordinators send quarterly site and Network data reports to develop best practice strategies



ICC Implementation: continuous Quality Improvement

 To improve ICC processes and maternal behavior, sites should use ICC data for continuous quality improvement (CQI)

Examples of CQI activities include:

- Regular meetings with ICC Team at site
- Identify and troubleshoot barriers to screening
- Analyze/use data e.g. develop provider report cards
- Check data quality with Network Coordinator
- Make risk factor interventions more meaningful



IMPLICIT ICC Intervention Spectrum



IMPLICIT Interconception Care (ICC): What is an Intervention for a Positive Screen?

	4			
	Least Intensive			Most Intensive
Smoking	Advise to quit		Referral to Fax to Quit Referral to community program nend to schedule follow-up appointment with provider for nicotine replacement therapies or medication	Use motivational interviewing techniques 5As – Ask, Advise, Assess, Assist, Arrange
Depression	Provide patient (materia		Referral to community program Schedule follow-up appointment for mom outside of current session Warm hand-off to Behavioral Health provider	Assess history of depression Make provider and discuss an appointment medications for mom in that and session treatments
Family Planning	Discuss interpregnancy interval	Provide patient education materials	Coordinate with PCP/Schedule an Discuss family appointment to discuss options for planning options established patient including LARC	Provide birth control during the Well Child Visit
Multivitamin with Folic Acid Use	Verbal counseling - Recommend taking folic acid daily	Provide patient education materials	Write Rx or provide coupon, voucher, or Provid information on how to get MVI cheaply	e a bottle of MVI to the patient in the office

IMPLICIT ICC Implementation Summary

Identify Provider Champion and Build an ICC Team
 Consider funding for personnel and materials
 Obtain IRB/QI Approval
 Develop workflow to administer screen
 Develop workflow for addressing positive screens
 Develop data collection tools
 Develop data entry tools and workflow
 Continuous quality improvement



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 - Model CAN be implemented at WCV
 - Results are promising for identifying maternal risks and encouraging healthy behavior choices
 - IMPLICIT ICC is a brief, efficient, innovative strategy to improve maternal health prior to the next pregnancy

Want to learn more?

Download Our ICC Toolkit

Contact us:

- √ implicitinfo@fmec.net
- √ http://www.fmec.net/implicitnetwork.htm



New Initiatives

- Developing and Implementing 4th Trimester project
- Network Health Disparity Initiatives



IMPLICIT Spring 2021 Meeting March 19th 2021

Preventing prematurity one woman at a time...





Questions???

