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Immunization education project

Educating mother's about the benefits of immunizations

- Prenatal care, a missed opportunity
- Structure of prenatal & pediatric care in the U.S.
- Internet marketing to mothers
- Linking to 'fake news'

Development of opinion or belief

- Opinions/beliefs are forms quickly, ‘gut reaction’
- Once developed they are hard to change
- Contradictory evidence only deepens the belief and discredits the contradictory evidence messenger

Formation of opinion

- **Moussaid, (2013). Social Influence and the Collective Dynamics of Opinion Formation. 59 subjects.**
- Found the (i) the expert effect, induced by the presence of a highly confident individual in the group, and (ii) the majority effect caused by the presence of a critical mass of laypeople sharing similar opinions.
- Researchers found a tipping point at which one attractor will dominate over the other, driving collective opinion in a given direction
- Participants exhibited a significant bias toward their own initial opinion rather than equally weighting all social information to which they were exposed.
- Confirmation bias - the tendency of people to pay more attention to information confirming their initial beliefs than information to which they disagree.
- Also consistent with the construct that opinions tend to get reinforced by group discussions that involve people who initially share a similar judgment. Individuals holding completely different beliefs exert very little influence on each other is consistent with the idea of bounded confidence.

Message framing Research

- Vaccine message framing and parent's intent to immunize their infants for MMR. (Hendrix, K. et al., 2014).
  - N=802, phone interview
  - Information that showed 'benefit to child' or 'benefit to child and society' were the most effective in increasing vaccine intent.

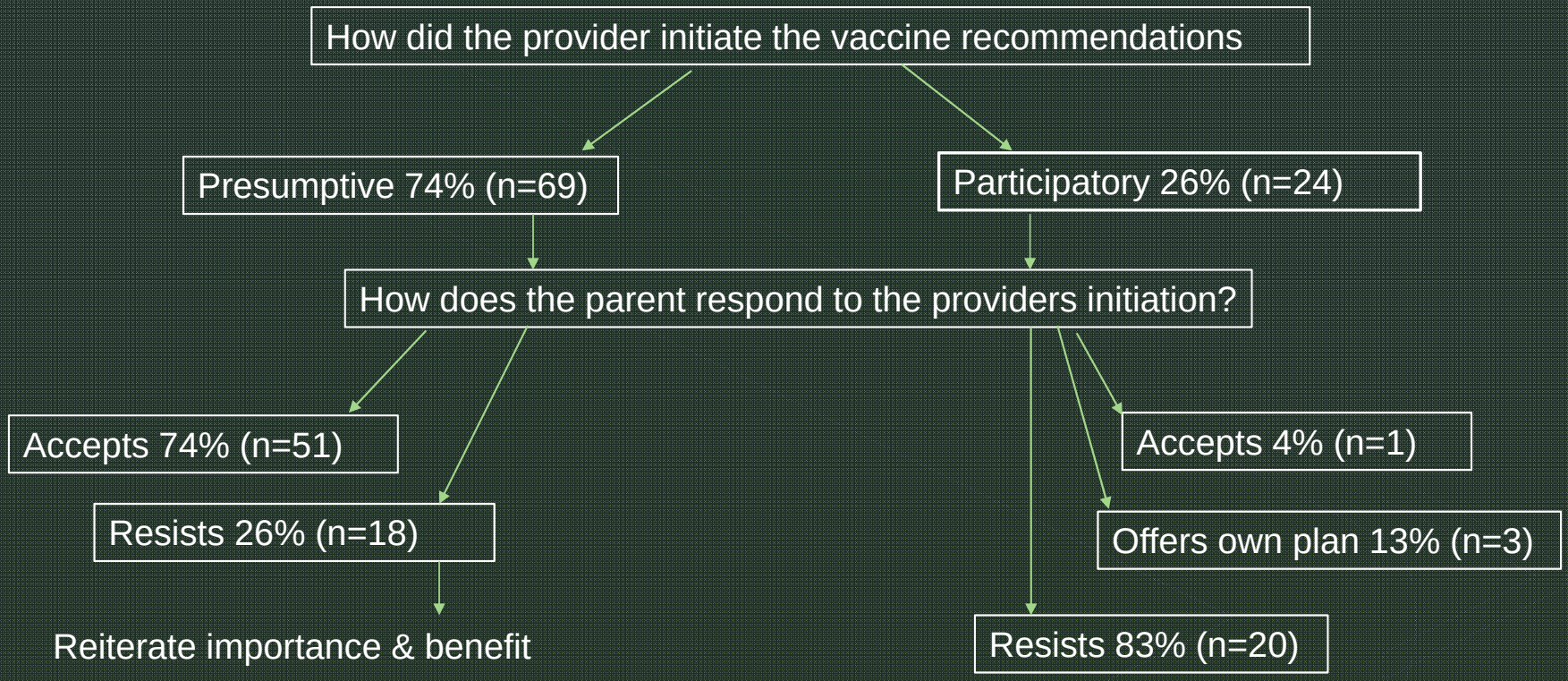
Message framing Research

- Health message framing on attitudes, intention and behavior, a meta-analysis. (Gallager, K. & Updegraff, J., 2012).
  - Review of 94 studies.
  - Gained framed messages appear to be more effective than loss framed messages in promoting prevention behavior.

Message framing Research

- The Architecture of provider-parent vaccine discussion at health supervision visits. (Opel, D. et al, 2013).
  - Parents with a child 1 to 19 months old in for health supervision
  - Parent Attitudes about Childhood Vaccine (PACV) survey
  - 25 health care providers and 113 parent-child pairs
  - Video of the visit
  - A larger proportion resisted vaccine recommendations when providers used a participatory rather than presumptive initiation format (83% vs 26%; p=0.001).

Message framing
Opel, D. et al, 2013

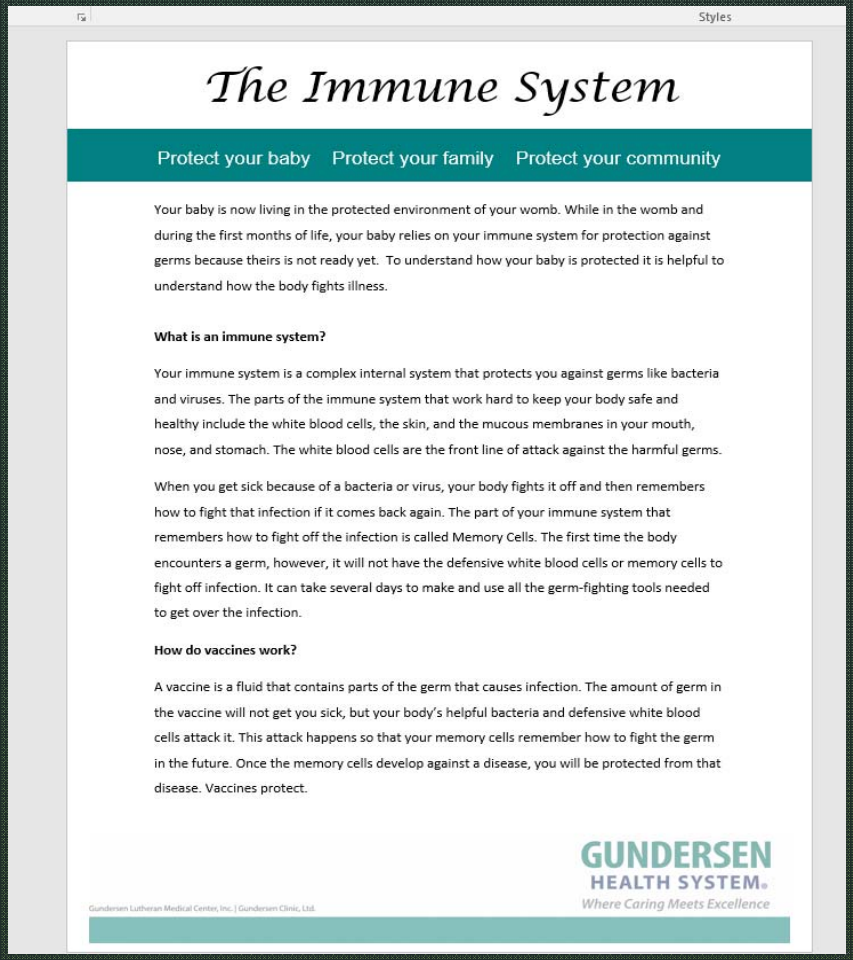


Myths to address in this education program

- Immunizations cause autism – avoid loss framing
- Immunizations are not safe – focus on gain framing
- Newborns' immune system is weakened by immunizations
- Newborns' are too fragile for simultaneous multiple immunizations

Development of the fetal immune system

- Immunization Education Page 1
- The Immune System
  - The fetus relies on the mother's immune system
  - Explanation of the function of memory cells
  - Immunizations stimulate memory cells – B lymphocytes


Styles
The Immune System
Protect your baby Protect your family Protect your community
Your baby is now living in the protected environment of your womb. While in the womb and during the first months of life, your baby relies on your immune system for protection against germs because theirs is not ready yet. To understand how your baby is protected it is helpful to understand how the body fights illness.
What is an immune system?
Your immune system is a complex internal system that protects you against germs like bacteria and viruses. The parts of the immune system that work hard to keep your body safe and healthy include the white blood cells, the skin, and the mucous membranes in your mouth, nose, and stomach. The white blood cells are the front line of attack against the harmful germs.
When you get sick because of a bacteria or virus, your body fights it off and then remembers how to fight that infection if it comes back again. The part of your immune system that remembers how to fight off the infection is called Memory Cells. The first time the body encounters a germ, however, it will not have the defensive white blood cells or memory cells to fight off infection. It can take several days to make and use all the germ-fighting tools needed to get over the infection.
How do vaccines work?
A vaccine is a fluid that contains parts of the germ that causes infection. The amount of germ in the vaccine will not get you sick, but your body's helpful bacteria and defensive white blood cells attack it. This attack happens so that your memory cells remember how to fight the germ in the future. Once the memory cells develop against a disease, you will be protected from that disease. Vaccines protect.
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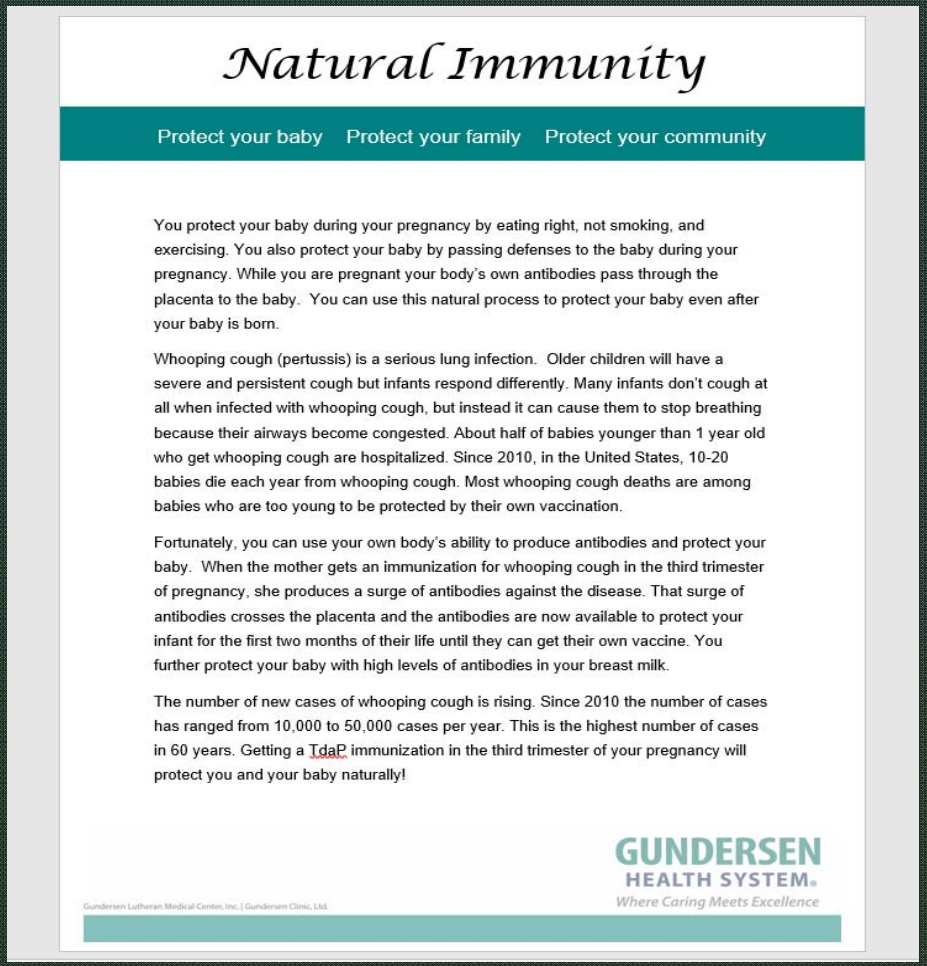
The use of ‘natural’ immunization

- Immunization Education sheet #2
- Message framing – Gain framed using the word ‘natural’
- The mother gets the immunization and the fetus gets the ‘natural’ anti-bodies.
- Gain framing – positive, protective, natural
- Is there a relationship between the mother accepting the Tdap immunization and fully immunizing the infant later?



Natural Immunity

Protect your baby Protect your family Protect your community

You protect your baby during your pregnancy by eating right, not smoking, and exercising. You also protect your baby by passing defenses to the baby during your pregnancy. While you are pregnant your body's own antibodies pass through the placenta to the baby. You can use this natural process to protect your baby even after your baby is born.

Whooping cough (pertussis) is a serious lung infection. Older children will have a severe and persistent cough but infants respond differently. Many infants don't cough at all when infected with whooping cough, but instead it can cause them to stop breathing because their airways become congested. About half of babies younger than 1 year old who get whooping cough are hospitalized. Since 2010, in the United States, 10-20 babies die each year from whooping cough. Most whooping cough deaths are among babies who are too young to be protected by their own vaccination.

Fortunately, you can use your own body's ability to produce antibodies and protect your baby. When the mother gets an immunization for whooping cough in the third trimester of pregnancy, she produces a surge of antibodies against the disease. That surge of antibodies crosses the placenta and the antibodies are now available to protect your infant for the first two months of their life until they can get their own vaccine. You further protect your baby with high levels of antibodies in your breast milk.

The number of new cases of whooping cough is rising. Since 2010 the number of cases has ranged from 10,000 to 50,000 cases per year. This is the highest number of cases in 60 years. Getting a TdaP immunization in the third trimester of your pregnancy will protect you and your baby naturally!

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Cocooning
Emerging from the Cocoon

- Immunization Education Sheets 3 and 4
- Using the CDC's recommendation that all of the newborn's family members be immunized, cocooning.
- Emerging from the Cocoon introduces the concept that the infant's immune system is primed and robust to react to many organisms simultaneously.
- Why can we give a baby multiple immunizations simultaneously
- Dr. Sears delayed schedule
- Message framing – the infant's immune system is ready!

Cocooning

Protect your baby Protect your family Protect your community

Pertussis (Whooping Cough) is an illness that can affect anyone. However, children are more likely to get sick than adults. A newborn baby cannot protect themselves against this serious disease until they are several months old and can receive the vaccine. The people who surround the baby are often the ones that carry and pass on diseases. Cocooning is a helpful way to help keep mom and baby healthy.

What is cocooning?

Cocooning is the act of protecting your newborn by encouraging everyone who spends time with you and the baby to get vaccinated. This invaluable process starts with mom getting the Tdap and flu vaccines and becoming immune while the baby is still in the womb. Before your darling baby is born all the important people who are going to be devoting time to its life get vaccinated as well. Dad, brothers, sisters, grandparents, aunts and uncles, daycare providers, and family friends too!

You are all providing a cocoon of protection for the baby that they cannot provide for themselves.

Snuggle up with your precious newborn knowing that their health is secure.

Cocoon

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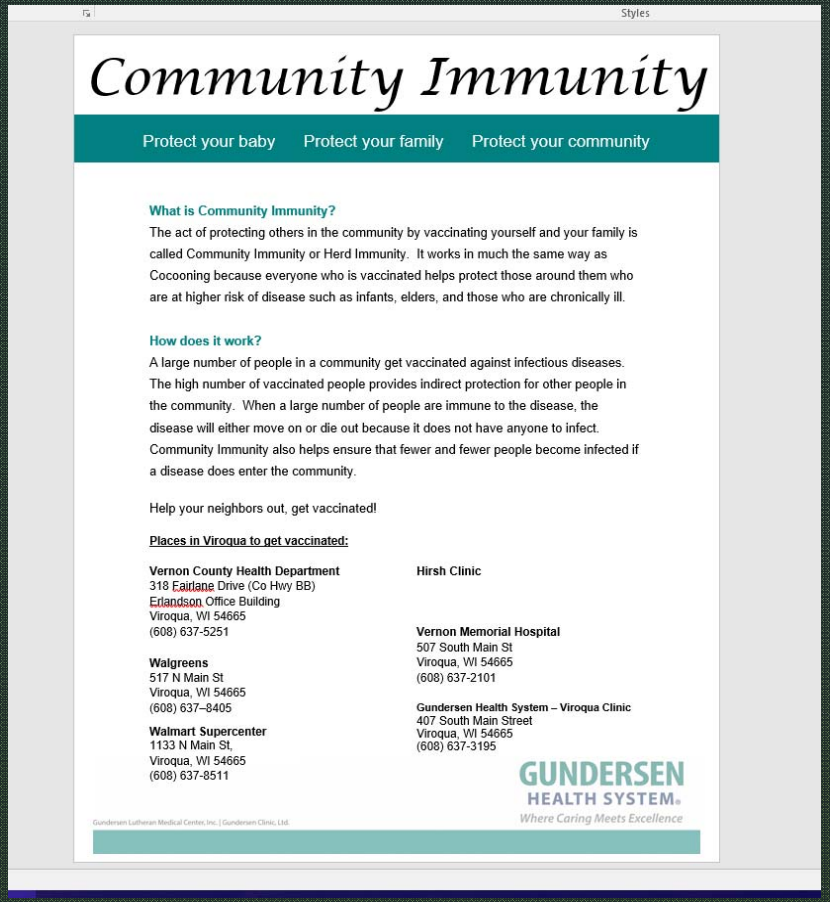
Layers of protection

- Message framing
- Visual adapted from a graph of the infant's immune system over time.
- "Blanket your baby with layers of protection"
- Overall message framing – Immunizations Protect


Blanket your baby with layers of immunity.
Vaccines
Helpful Bacteria from the Environment
Vaccinated Family and Friends
Baby
Mother's Immunity and Breast Milk

Reliable resources Community Immunity

- Immunization Education Sheets 5 & 6
- Getting the jump on fake news
- Increase accessibility and affordability of immunizations
- All local clinics, pharmacies and the public health department
- Reach mother’s where they are



Styles

Community Immunity

Protect your baby Protect your family Protect your community

What is Community Immunity?

The act of protecting others in the community by vaccinating yourself and your family is called Community Immunity or Herd Immunity. It works in much the same way as Cocooning because everyone who is vaccinated helps protect those around them who are at higher risk of disease such as infants, elders, and those who are chronically ill.

How does it work?

A large number of people in a community get vaccinated against infectious diseases. The high number of vaccinated people provides indirect protection for other people in the community. When a large number of people are immune to the disease, the disease will either move on or die out because it does not have anyone to infect. Community Immunity also helps ensure that fewer and fewer people become infected if a disease does enter the community.

Help your neighbors out, get vaccinated!

Places in Viroqua to get vaccinated:

Vernon County Health Department
318 Fairlane Drive (Co Hwy BB)
Erlandson Office Building
Viroqua, WI 54665
(608) 637-5251

Walgreens
517 N Main St
Viroqua, WI 54665
(608) 637–8405

Walmart Supercenter
1133 N Main St.
Viroqua, WI 54665
(608) 637-8511

Hirsh Clinic

Vernon Memorial Hospital
507 South Main St
Viroqua, WI 54665
(608) 637-2101

Gundersen Health System – Viroqua Clinic
407 South Main Street
Viroqua, WI 54665
(608) 637-3195

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Research design

- Retrospective case/control
- Convenience sample of all mothers in practice.
- Educate mothers starting at 20 weeks gestation
- Education sheet at 20, 24, 28, 32, 34 weeks gestation
- The sheets were given as the MA roomed the patient
- Discussion when the mother brought it up, waiting for teachable moments
- Discussion at the end of the visit

Inclusion and exclusion criteria

- All mothers in the OB practice who are getting antepartum care, intrapartum care, postpartum care and pediatric care in the GHS or Hirsch clinics starting in October, 2015 and ending after enrolling 30 mothers.
- Exclusion – if they transfer out for obstetric complications or if they are not getting pediatric care in GHS or Hirsch clinics.

Enrollment

- Gundersen Health System – Viroqua from October 2015 to March 2016 – n=29
- Hirsch Clinic from March, 2016 to November, 2016 – n=21 (Study was stopped by EPIC!)

Outcome measures and follow up

- Note immunization status at 7 months of age
- Fully immunized
- Partially immunized
- Unimmunized

Limited data collection Gundersen Health System

2013 GHS N=30	Fully Immunized	Partially Immunized	Un-immunized
Number (percent)	17 (56.7%)	8 (26.7%)	5 (16.6%)
2016 GHS N=29	Fully Immunized	Partially Immunized	Un-immunized
Number (percent)	20 (69.0%)	6 (20.7%)	3 (10.3%)

Limitations of this study

- Small, convenience sample may not be generalizable to the larger population.
- Self-selection of the women enrolled in our practice for obstetric care.
- Change may have occurred because the overall zeitgeist of the nation has changed
- Change may have occurred because of the ‘team approach’

Strengths of this study

- This study offers insight to the benefit of comprehensive immunization education of mothers prenatally
- Parents are receiving information on infant care prenatally without solicitation
- Parents are being exposed to anti-immunization information before health care providers are offering evidence based information
- The study protocols educated the staff and developed a consistent message

Follow up

- A larger study is needed to sort out what caused the change in the two groups
- Measuring immunization hesitancy at the first prenatal visit
- This study exemplifies the limitations of conventional OB/Pediatric care and the missed educational opportunities
- This approach is without risk and most likely with benefit
- Education of the staff to have a consistent approach

Changes to my practice

- Start immunization education early
- Gain frame the message
- Clear directive language
- Consistent staff message

- Immunization protect!

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