Using and Interpreting Research to Strengthen Immunization Programs:

Translating Research into Effective Messages and Materials for Parents and Health Care Professionals

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National Conference on Immunization and Health Coalitions

National Center for Immunization & Respiratory Diseases
Health Communication Science Office/Health Services Research and Evaluation Branch

Outline

- Types of research
  - Quantitative
  - Qualitative
  - Mixed methods
- Incorporating others' research
  - Why look at others' research?
  - Where to search
  - How to evaluate quality
- Incorporating your own research
  - Formative
  - Data collection/surveillance
  - Evaluation
- Example: Childhood immunizations

Quantitative Research

- **The systematic empirical investigation of social phenomena via statistical, mathematical or computational techniques.**
  - **The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena.**
  - **The results of quantitative research are designed and intended to be generalizable to a larger population.**
    - **The ability to generalize based on quantitative research is directly related to the quality of the research conducted and interpretation of the research.**

Given, Lisa M. (2008). *The Sage encyclopedia of qualitative research methods*. Los Angeles, Calif.: Sage Publications. ISBN 1412941636.

Qualitative Research

- **In-depth understanding of human behavior and the reasons that govern such behavior.**
  - **The qualitative method investigates the *why* and *how* of decision making, not just *what*, *where*, *when*. Hence, smaller but focused samples are more often needed than large samples.**
  - **Units of analyses are not quantified, but examined within the larger context to understand dynamic phenomena.**
  - **Results from qualitative research are not generalizable.**

Adler, P. A. & Adler, P. (1987). : context and meaning in social inquiry / edited by Richard Jessor, Anne Colby, and Richard A. Shweder] OCLC 46597302

Qualitative and Quantitative Research: Differences

Quantitative Research:

- Broad generalizations
- State of the field assessments
- Stratification of populations
- Macro-level phenomena

Qualitative Research:

- Thematic insights
- Aspects of decision making
- Context
- Reactions

Mixed Methods Research

- Research triangulation, or incorporating quantitative and qualitative components of research, provides the most thorough insights.
  - Use quantitative methods for generalizations, baseline assessments, and trend data.
  - Use qualitative research for nuanced understanding of contextualized phenomena, such as opinions and attitudes towards specific messages or materials.
- Common options for mixed methods research include parallel, sequential, and multiphase designs.

Source: Creswell & Plano-Clark. Designing and Conducting Mixed Methods Research, 2nd edition.

Incorporating Others' Research

- **Literature search an important first step in answering a research question**
  - **Could save time, effort, and resources if others have already looked at your research question**
  - **Can build upon what others have done (i.e., "more research is needed")**
  - **Can learn who publishes in this area and seek out advice or collaboration**
  - **Can be a source for survey questions or instruments (with permission)**

Incorporating Others' Research: Search Resources

- Google Scholar (http://scholar.google.com)
- PubMed (www.pubmed.gov)
- Journal websites (e.g., JAMA, Pediatrics)
- Open access journals (e.g., BioMed Central, PLoS)
- Institutional, university, and municipal libraries

Incorporating Others' Research: Tips for Evaluating Quality

- **Quality of an online search**
  - Peer-reviewed articles
  - Journals of importance included in the search?
  - Incorporate search terms from popular sources in scholarly searches
- **Quality of an individual article**
  - Sample
    - Representativeness
    - Sample size
  - Method
    - What is the best way to study the issue? Did the authors use it?
  - Analysis
    - Does the interpretation of the data make sense to you? Are similar findings supported in other sources?

Incorporating Your Own Research

- **Formative research**
  - Can be qualitative, quantitative, or both
  - Often includes several iterations
  - Useful for testing preliminary information, concepts, messages, materials, and revisions
- **Surveillance**
  - Traditional "disease" surveillance
  - Can also be used to learn about and track knowledge, attitudes, and behaviors at a specific point or over time
- **Evaluation**
  - Used to learn about a program or intervention
  - Not just "if" it works but more importantly, "why"
  - Looks at process, outcome, and impact

Example: Childhood Immunizations

- Communication challenges
  - Low familiarity with diseases means an increased focus on vaccine risks
  - Full and complicated immunization schedule
  - Spectrum of parent attitudes and beliefs
- Role of research in development of materials
  - Literature review and other research
  - Development, testing, and revision of draft materials
  - Ongoing formative research with parents throughout the process

Completed Research with Health Care Professionals

- 2008 in-depth interviews with pediatricians and family physicians
- 2009 survey of pediatricians and family physicians (partnership with U of Colorado)
- Pilot evaluation of educational materials with WA state health care professionals
- In-depth interviews (IDIs) to discuss provider resources

Completed Research with Parents

- 2008, 2009, 2010 HealthStyles mail surveys of parents
- 2008 and 2009 focus group research with moms
- 2008 online testing of draft educational materials with moms
- 2010 national poll of parent vaccine attitudes and behaviors
- 2010 cognitive interviews and focus groups with moms to test readability of VIS
- 2011 focus groups and intercept interviews with parents to discuss vaccination barriers and facilitators, and to test message concepts
  - Includes research with high and low acculturation Hispanic parents and with fathers
- 2011 ConsumerStyles mail survey of parents

Research Guides CDC's Vaccine Communication Priorities, Strategies, and Messages

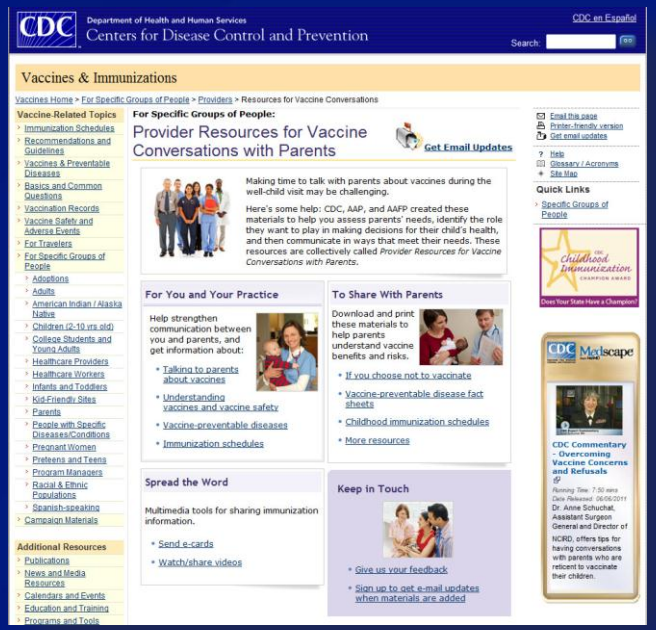
- **Research indicated that:**
  - **HCPs were seeking info to pass on to parents about immunizing their children**
  - **Parents did not know much about vaccine-preventable diseases and some questioned vaccine safety and efficacy**
  - **Parents' most trusted soure of vaccine information was their child's doctor or nurse**
- **So, we made the development of resources to meet these needs and supporting HCP-parent conversations a priority**
  - **Slated direct-to-parent media campaign for Phase II**

How did we translate these findings into action/materials?

- **Phase 1: focus on health care professionals**
  - Parents' #1 source for health information
  - Give them the resources they need to address parental questions/concerns
- **Phase 2: direct-to-parent communication**
  - Tell them to talk to their child's doctor if they have concerns
  - Reassure them
  - Educate them

Phase 1: "Provider Resources for Vaccine Conversations with Parents"

- **Developed with partners: AAP and AAFP**
- **Primary Target Audience: Healthcare Professionals**
  - **Information to help hcps talk with parents about vaccines, vaccine-preventable diseases, and vaccine safety**
  - **Dual purpose: resources hcps can provide to parents**

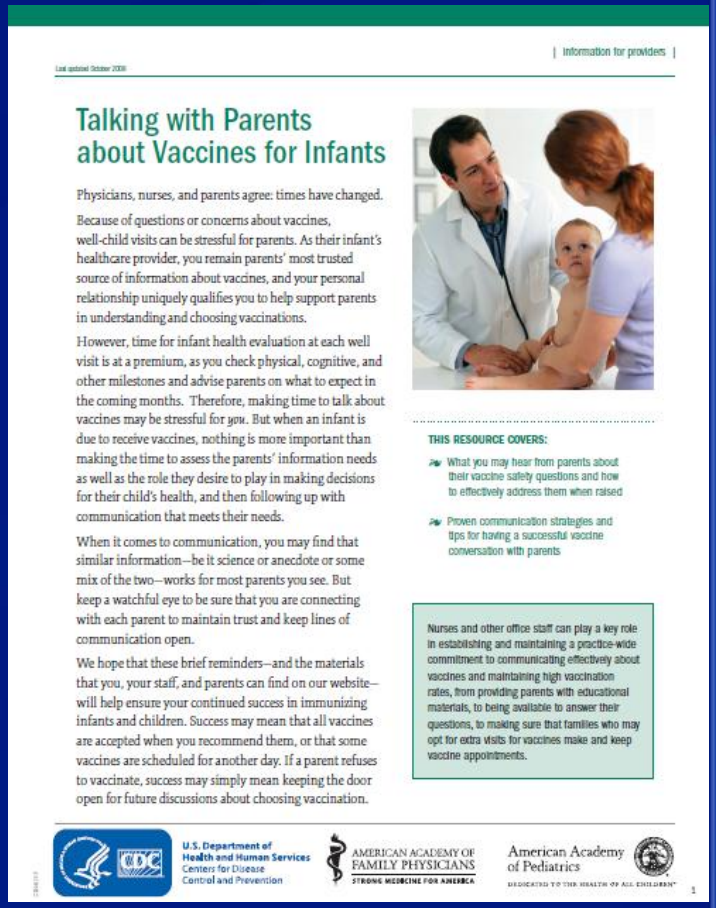


- **Based on formative, mixed methods research**
- **Using risk communication principles**
- **Extensively reviewed by subject matter experts**
- **Updated annually**

www.cdc.gov/vaccines/conversations

"Talking with Parents about Vaccines for Infants"

- **During the Office Visit**
  - Take time to listen
  - Solicit and welcome questions
  - Keep the conversation going
  - Use a mix of science and personal anecdotes
  - Acknowledge benefits and risks
  - Respect parents' authority
- **After the Office Visit**
  - Document parents' questions/ concerns
  - Follow up a few days after the visit



| Information for providers |

Talking with Parents about Vaccines for Infants

Physicians, nurses, and parents agree: times have changed.

Because of questions or concerns about vaccines, well-child visits can be stressful for parents. As their infant's healthcare provider, you remain parents' most trusted source of information about vaccines, and your personal relationship uniquely qualifies you to help support parents in understanding and choosing vaccinations.

However, time for infant health evaluation at each well visit is at a premium, as you check physical, cognitive, and other milestones and advise parents on what to expect in the coming months. Therefore, making time to talk about vaccines may be stressful for you. But when an infant is due to receive vaccines, nothing is more important than making the time to assess the parents' information needs as well as the role they desire to play in making decisions for their child's health, and then following up with communication that meets their needs.

When it comes to communication, you may find that similar information—be it science or anecdote or some mix of the two—works for most parents you see. But keep a watchful eye to be sure that you are connecting with each parent to maintain trust and keep lines of communication open.

We hope that these brief reminders—and the materials that you, your staff, and parents can find on our website—will help ensure your continued success in immunizing infants and children. Success may mean that all vaccines are accepted when you recommend them, or that some vaccines are scheduled for another day. If a parent refuses to vaccinate, success may simply mean keeping the door open for future discussions about choosing vaccination.

THIS RESOURCE COVERS:

- What you may hear from parents about their vaccine safety questions and how to effectively address them when raised
- Proven communication strategies and tips for having a successful vaccine conversation with parents

Nurses and other office staff can play a key role in establishing and maintaining a practice-wide commitment to communicating effectively about vaccines and maintaining high vaccination rates, from providing parents with educational materials, to being available to answer their questions, to making sure that families who may opt for extra visits for vaccines make and keep vaccine appointments.

U.S. Department of Health and Human Services Centers for Disease Control and Prevention

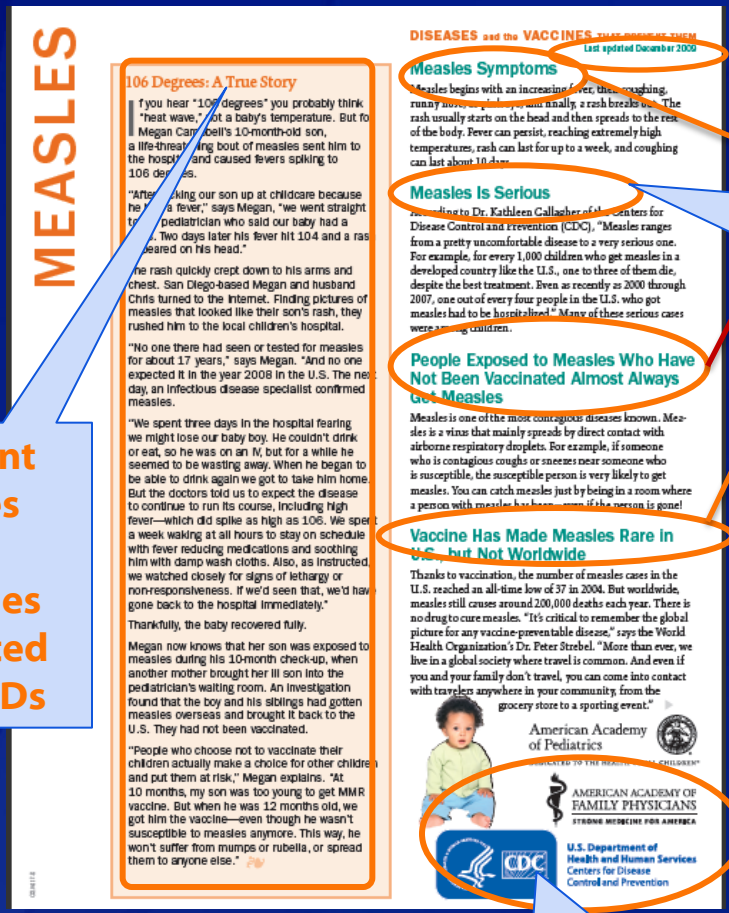
AMERICAN ACADEMY OF FAMILY PHYSICIANS STRONG MEDICINE FOR AMERICA

American Academy of Pediatrics

Materials: Provider Resources for Vaccine Conversations with Parents

- Understanding Vaccines and Vaccine Safety
  - How Vaccines Work
  - The Recommended Childhood Immunization Schedule
  - Ensuring the Safety of U.S. Vaccines
  - Understanding the Vaccine Adverse Reaction Reporting System Understanding MMR Vaccine Safety
  - Understanding Thimerosal, Mercury, and Vaccine Safety
  - Understanding Vaccine Ingredients
- Diseases and the Vaccines that Prevent Them
  - 14 vaccine-preventable disease sheets
    - 2 versions (one for high-information seeking parents and other plain language)
- If You Choose Not to Vaccinate, Understand the Risk and Your Responsibilities

Parent-Targeted Materials



MEASLES

106 Degrees: A True Story

If you hear "106 degrees" you probably think "heat wave," not a baby's temperature. But for Megan Campbell's 10-month-old son, a life-threatening bout of measles sent him to the hospital and caused fevers spiking to 106 degrees.

"After picking our son up at childcare because he had a fever," says Megan, "we went straight to the pediatrician who said our baby had a rash. Two days later his fever hit 104 and a rash appeared on his head."

The rash quickly crept down to his arms and chest. San Diego-based Megan and husband Chris turned to the Internet. Finding pictures of measles that looked like their son's rash, they rushed him to the local children's hospital.

"No one there had seen or tested for measles for about 17 years," says Megan. "And no one expected it in the year 2008 in the U.S. The next day, an infectious disease specialist confirmed measles.

"We spent three days in the hospital fearing we might lose our baby boy. He couldn't drink or eat, so he was on an IV, but for a while he seemed to be wasting away. When he began to be able to drink again we got to take him home. But the doctors told us to expect the disease to continue to run its course, including high fever—which did spike as high as 106. We spent a week waking at all hours to stay on schedule with fever reducing medications and soothing him with damp wash cloths. Also, as instructed, we watched closely for signs of lethargy or non-responsiveness. If we'd seen that, we'd have gone back to the hospital immediately."

Thankfully, the baby recovered fully.

Megan now knows that her son was exposed to measles during his 10-month check-up, when another mother brought her ill son into the pediatrician's waiting room. An investigation found that the boy and his siblings had gotten measles overseas and brought it back to the U.S. They had not been vaccinated.

"People who choose not to vaccinate their children actually make a choice for other children and put them at risk," Megan explains. "At 10 months, my son was too young to get MMR vaccine. But when he was 12 months old, we got him the vaccine—even though he wasn't susceptible to measles anymore. This way, he won't suffer from mumps or rubella, or spread them to anyone else."

DISEASES and the VACCINES THAT PREVENT THEM

Last updated December 2009

Measles Symptoms

Measles begins with an increasing fever, then coughing, runny nose, red eyes, and finally, a rash breaks out. The rash usually starts on the head and then spreads to the rest of the body. Fever can persist, reaching extremely high temperatures, rash can last for up to a week, and coughing can last about 10 days.

Measles Is Serious

According to Dr. Kathleen Gallagher of the Centers for Disease Control and Prevention (CDC), "Measles ranges from a pretty uncomfortable disease to a very serious one. For example, for every 1,000 children who get measles in a developed country like the U.S., one to three of them die, despite the best treatment. Even as recently as 2000 through 2007, one out of every four people in the U.S. who got measles had to be hospitalized." Many of these serious cases were among children.

People Exposed to Measles Who Have Not Been Vaccinated Almost Always Get Measles

Measles is one of the most contagious diseases known. Measles is a virus that mainly spreads by direct contact with airborne respiratory droplets. For example, if someone who is contagious coughs or sneezes near someone who is susceptible, the susceptible person is very likely to get measles. You can catch measles just by being in a room where a person with measles has been, even if the person is gone!

Vaccine Has Made Measles Rare in U.S., but Not Worldwide

Thanks to vaccination, the number of measles cases in the U.S. reached an all-time low of 37 in 2004. But worldwide, measles still causes around 200,000 deaths each year. There is no drug to cure measles. "It's critical to remember the global picture for any vaccine-preventable disease," says the World Health Organization's Dr. Peter Strebel. "More than ever, we live in a global society where travel is common. And even if you and your family don't travel, you can come into contact with travelers anywhere in your community, from the grocery store to a sporting event."

American Academy of Pediatrics

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U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Measles, Mumps, and Rubella Vaccine

The measles, mumps, and rubella vaccine (MMR) is the best way to protect against getting measles. The risk of MMR causing a serious side effect is rare. Getting MMR is much safer than getting measles. In the U.S., the first dose of MMR is recommended at ages 12 through 15 months. The vaccine is less effective if it is given earlier than age 12 months, because the antibodies that a baby receives from mom may interfere with the process of making new antibodies after getting vaccine. A second dose is recommended at ages 4 through 6 years. 95% or more of children are protected against measles after they receive two doses of MMR.

All Reputable Studies Have Found No Link Between MMR and Autism

their child got MMR. According to Dr. Anne Schuchat, CDC's immunization program, "As you sort out the facts of the MMR vaccine for your child, you should [illegible] possibility of a link between MMR and autism [illegible] 1998—beginning immediately when the [illegible] came up." Adds Dr. Schuchat, "Large studies of children [illegible] U.S., the United Kingdom, and Denmark found no link [illegible] MMR and autism. CDC and its partners support continu[illegible]search to find the causes of autism. I encourage parents who [illegible] concerned about autism to visit CDC's 'Learn the Signs. Act Early.' website at www.cdc.gov/ncbddd/autism/actearly/ to find out more about child development.

"Most importantly, parents who have questions about the MMR vaccine should talk to their child's doctor."

to vaccination because their child's diagnosis of autism came after

Benefits of MMR Vaccine

Getting MMR vaccine is recommended—

- Saves lives.
- Prevents hospitalizations.
- Protects young children, for whom the disease can be especially serious.
- Keeps others safe. For example, following the recommended vaccination schedule, babies under 1 year old are not vaccinated, so they need the protection that comes from those around them being vaccinated. All babies are at increased risk for complications if they get measles.

Risks of MMR Vaccine

- Mild side effects are fever, mild rash, and, rarely, swelling of the glands in the cheeks or neck.
- Moderate side effects are rare. For example, about one in 3,000 vaccinated children gets a fever that is high enough to cause a seizure. About one in 30,000 could develop a temporary low platelet count, which could cause a bleeding disorder.
- Severe side effects are very rare. For example, fewer than one in a million children have a severe allergic reaction.

Measles Vaccine Saves Lives

According to the American Academy of Pediatrics' Dr. Joseph Bocchini, "It's true that most people in the U.S. who got measles recover totally. Most, but definitely not all. By the late 1950s, even before the vaccine was developed, improved healthcare and nutrition had reduced the risk of measles. But getting measles is always risky—measles can result in hospitalization, life-long disability, and death."

Measles vaccine was developed in the U.S. in the early 1960s. Right before the vaccine came out, there were about 3 to 4 million measles cases annually. About 48,000 people, most of them children, were hospitalized each year with complications such as encephalitis (brain swelling) or severe respiratory illness, and there were 400 to 500 deaths from complications. Most cases were in school-age children. Measles was, and remains, most risky for children under 5 years of age.

Measles Today

In 2008, there were 140 cases of measles reported in the U.S. According to CDC's Dr. Jane Seward, a long-time leader in CDC's group that monitors vaccine-preventable viral diseases, "That's more than any year since 1996. Eight states from coast to coast were involved in seven outbreaks."

Why so many cases? According to Dr. Seward, "Measles spreads among unvaccinated people: 92% of the people with measles had not been vaccinated or did not know if they had been vaccinated."

"Seeing so many people infected is frustrating," says CDC's Dr. Kathleen Gallagher. "So is the fact that measles sent 17 of these people to the hospital. I say that because in 2000, experts concluded that measles was not—and could not—circulate in the U.S. because of our high immunity thanks to vaccination."

So where do measles cases come from? According to Dr. Gallagher, "These days, measles comes into the U.S. from countries where the disease still circulates, including many European countries.

Some measles cases in the U.S. in 2008 were among people who visited from other countries while infected, and some cases were in U.S. travelers who returned home with measles after trips abroad. Typically, the disease spreads in stages, first from a traveler to an unvaccinated person and then from that person to other unvaccinated people."

"The best thing we can all do," says Dr. Seward, "is to be vigilant about on-time vaccination for our children, so that the disease cannot spread from person to person."

For more information on vaccines, ask your child's healthcare provider or call **800-CDC-INFO** *(800-232-4636)*
www.cdc.gov/vaccines

Current stories from families affected by VPDs

Date

VPD risks

Co-branded with AAFP and AAP

Vaccine risks and benefits

References

Quotes from health care professionals

Phase 2: Direct-to-Parent Media Campaign Launched in April 2012

- Based on extensive formative research
- English & Spanish materials
- Print Ads
  - 2 sizes and poster format
  - Available: http://www.cdc.gov/vaccines/events/niiw/print-materials.html
- Radio/TV PSA
  - Broadcast quality
  - Downloadable: http://www.cdc.gov/vaccines/cdcmediaresources/
- Products can be pitched and placed with local media

Campaign Goals

- Reinforce the social norm to vaccinate their children
- Increase awareness of VPDs
- Increase awareness of disease protection benefits of vaccines
- Empower parents to make the choice to immunize their children

English Campaign
Immunization. Power to Protect.

Print Ads

TV :30

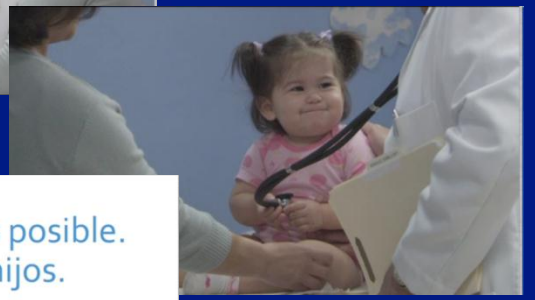
- **Strong protection message**
- **Real-life, relatable scenarios**
- **Drives parents to new parent-friendly website**

Spanish Campaign

Con salud, todo es posible. Vacune a sus hijos.

Print Ads

TV :30



- **Tagline: "With health, all is possible. Vaccinate your children."**
- **Strong protection message**
- **Endearing terms and colorful images**

Summary

- Research and evaluation are an ongoing process, and can take many forms
- Incorporating your own or others' research findings into health education or communication campaigns is essential
- Formative research has guided the development of our materials and messages for health care professionals and parents

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