

# Research Centers for Excellence in Clinical Preventive Services

*Working to get the right services, to the right people, at the right time*

## The Center for Research in Implementation Science and Prevention (CRISP)

<http://www.ucdenver.edu/academics/colleges/medicalschool/programs/crisp>

### Center Location

The University of Colorado,  
Anschutz Medical Campus

### Center Focus

Health Care Implementation

CRISP's overall aim is to expand understanding of how to effectively implement interventions that *work* in order to improve preventive care for children and adults in the U.S.

### Center Director

Allison Kempe, MD MPH



## Improving Immunization Rates in Young Children: A Comparative Effectiveness Trial

Principal Investigator: Allison Kempe, MD MPH  
AHRQ Grant Number: P01 HS021133

Vaccines are among the most successful and cost-effective public health tools available for preventing disease and death. However, in 2009 almost 30% of children between 1.5 and 3 years old had *not* received all of their recommended vaccinations.

The purpose of this project is to study two approaches for improving immunization rates in young children: An individual practice-based approach and a centralized approach. Both use a Patient Reminder and Recall (R/R) communication system, which aims to increase the numbers of young children who are up to date with their immunizations. Patients receive a *reminder* notice for immunizations that are due or a *recall* notice for those that are overdue.

Individual Practice-based Approach	Centralized Approach
<ul style="list-style-type: none"><li>• Individual primary care practices conducted R/R combined with parent education.</li><li>• Each practice was provided with tools to conduct R/R and educational interventions, but made its own decisions about following immunization recommendations and implementation.</li></ul>	<ul style="list-style-type: none"><li>• Centralized state health department used an immunization registry to conduct R/R in collaboration with primary care practices.</li><li>• The education effort was conducted collaboratively between the public health department and primary care practices to inform parents about the need to get all children vaccinated before school entry.</li></ul>

## Big Questions

1. Will the practice-based approach or the centralized approach lead to more children receiving needed vaccines?
2. Which approach will be more cost-effective?
3. Will the methods of communication used in the centralized approach be acceptable to families and providers?

Determining which of these methods is most effective in reaching the most children, and comparing the cost of each approach will provide key information for guiding future national efforts to ensure that children entering school are fully vaccinated.

# Improving Immunization Rates in Young Children: A Comparative Effectiveness Trial

## What Did We Learn?

We found the *centralized* approach was more *effective* and *cost-effective* than individual practices conducting education and R/R on their own.

- 13% of children seen at practices using the centralized approach became up to date with their immunizations, compared to only 9% of children at the practices working on their own.
- More children received immunizations using the centralized approach, dropping the cost to only \$13 per shot. Immunizations received through individual practices had an average cost of \$62 per shot; a difference of \$49.
- In the individual practice-based group, only 1% of eligible practices (2 out of 255) performed R/R on their own, even when incentivized with opportunities to learn about using the registry and offers to cover autodialer or mail costs.
- Based on the centralized approach intervention in this study, an additional 440 children received a needed immunization and 308 children became up to date on all of their needed vaccinations.

Both providers and parents found the centralized approach acceptable, especially when the R/R message was personalized and included the child's provider's name.

Future results will provide information about the effectiveness and cost-effectiveness of using the auto dialer to provide reminders over the telephone versus mailed paper reminders.

## What Does This Mean?

Utilizing a centralized approach to remind families about needed immunizations results in more children receiving immunizations at a lower cost per shot. Funding programs that support public health and primary care working together to implement a centralized approach to immunization reminders could result in more children receiving their needed vaccines each year.

## Where to Learn More

Kempe A, Daley MF, Pyrzanowski J, Vogt TM, Campagna EJ, Dickinson LM, Hambidge SJ, Shlay JC. School-located influenza vaccination with third-party billing: What do parents think? *Acad Pediatr*. 2014 May-Jun;14(3):241-8. PMID: 24767777.

Albright A, Saville A, Lockhart S, Racich KW, Beaty B, Kempe A. Provider attitudes toward public-private collaboration to improve reminder/recall: a mixed-methods study. *Acad Pediatr* 2014;14(1):62-70. PMID: 24369870.

Kempe A, Daley MF, Pyrzanowski J, Vogt T, Fang H, Rinehart DJ, Morgan N, Riis M, Rodgers S, McCormick E, Hammer A, Campagna EJ, Kile D, Dickinson M, Hambidge SJ, Shlay JC. School-located influenza vaccination with third party billing: outcomes, cost and reimbursement. *Acad Pediatr*. 2014 May-Jun;14(3):234-40. PMID: 24767776.

Saville AW, Beaty B, Dickinson LM, Lockhart S, Kempe A. Novel immunization reminder/recall approaches: rural and urban differences in parent perceptions. *Acad Pediatr*. 2014 May-Jun;14(3):249-55. PMID: 24767778.

For more information on this project please visit

<http://www.ucdenver.edu/academics/colleges/medicalschoo/programs/crisp>