

## Making the Shots

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# A Data Driven Approach to Improving Rates of Child and Adolescent Immunizations



# Audience Participation

Chat →

Polling →

The screenshot displays a virtual meeting interface with several components:

- Chat Window:** Shows a list of messages from participants. Visible messages include:
  - Brian Long: Hey James H.!!!
  - James Henkel: Brian!!! Hey Buddy!!!
  - Laure Wiggins: Confirming - the "Workbook" is under the Resources tab, titled "Nikon Precision, Inc.\_WW8100323\_Workbook"
  - Cliff Greenberg: Start at the start: identify the goal, then the key winning points, outline & drink more coffee
  - Laure Wiggins: "word vomit" ...writing stream of consciousness then editing & down. Or start with a bullet list of thoughts then expand it to sentences.
- Polling Window:** Displays a poll question: "#1.) What is your biggest business writing challenge? (NO RIGHT ANSWER - OPEN QUESTION)". The results are:
  - Content: 45%
  - Grammar and/or typos: 20%
  - Content Structure: 16%
  - Tone: 16%
  - Other: 0%
- Main Presentation:** A slide titled "UDS Reporting: Preparing, Doing, and Utilizing" with the subtitle "Cultivating Health Center Operations". It features a colorful graphic of people and the logos for "multivestforward" and "SkillPath".
- Participant Video:** A video feed of a man in a dark suit and white shirt.
- Footer:** Includes "Request Support", "12:09pm Eastern", "Session Support Profile Options Windows", and "Presented by Digitell".

# Presenters



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# The Challenge of Immunizations



*Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: What challenges do you face when it comes to immunizations at your practice?**

# Healthy People 2030 Goals

## Reduce the proportion of children who get no recommended vaccines by age 2 years — IID-02

- Objective Overview
- Data Methodology and Measurement
- Evidence-Based Resources

Add to Custom List

Status: Baseline only

[Learn more about our data release schedule](#)

Reduce the proportion of children who receive 0 doses of recommended vaccines by age 2 years

**Baseline:** 1.3 percent of children born in 2015 had received 0 doses of recommended vaccinations by their 2nd birthday

**Target:** 1.3 percent

**Target Setting Method:** Maintain the baseline

**Data Source:** [National Immunization Survey - Child \(NIS-Child\)](#), CDC/NCIRD

[Learn more about data measurement for this objective](#)

Status: Baseline only

[Learn more](#)

Maintain the vaccination coverage level of 1 dose of the measles-mumps-rubella (MMR) vaccine among children by age 2 years

**Baseline:** 90.8 percent of children born in 2015 received at least 1 dose of MMR by their 2nd birthday

**Target:** 90.8 percent

Status: Baseline only

[Learn more](#)

Maintain the vaccination coverage level of 2 doses of the measles-mumps-rubella (MMR) vaccine for children in kindergarten

**Baseline:** 94.7 percent of children enrolled in kindergarten received 2 or more doses of MMR for the 2018-19 school year

**Target:** 95.0 percent

Status: Baseline only

[Learn more](#)

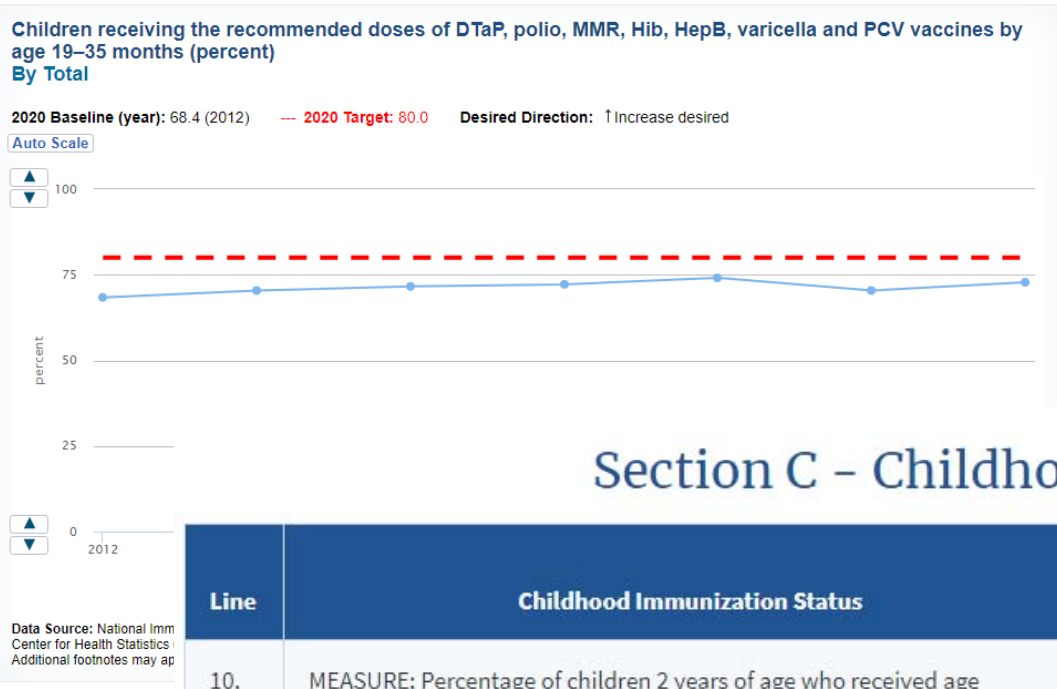
Increase the vaccination coverage level of 4 doses of the diphtheria-tetanus-acellular pertussis (DTaP) vaccine among children by age 2 years

**Baseline:** 80.7 percent of children born in 2015 received 4 or more doses of DTaP by their 2nd birthday

**Target:** 90.0 percent

<https://health.gov/healthypeople/objectives-and-data/browse-objectives/vaccination>

# What Do Childhood Immunization Rates Look Like Today?



## Section C – Childhood Immunization Status

Line	Childhood Immunization Status	Total Patients with 2nd Birthday (a)	Estimated Number of Patients Immunized	Estimated % of Patients Immunized
10.	MEASURE: Percentage of children 2 years of age who received age appropriate vaccines by their 2nd birthday	410,408	163,156	39.75%

- [https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4722;](https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4722)
- <https://data.hrsa.gov/tools/data-reporting/program-data/national/table?tableName=6B&year=2019>

# Common Challenges



## Documentation

- Recording the correct CVX code for the dose version of the vaccination
- Reconciling state immunization registry with EHR



## Identification

- Finding patients who are under-immunized
- Giving care teams actionable data



## Education

- Reaching populations with cultural or language barriers
- Overcoming patient fears



# Common Challenges Continued: Flu



Increase the proportion of persons who are vaccinated annually against seasonal influenza

**Baseline: 49.2 percent** of persons aged 6 months and over were vaccinated against seasonal influenza for the flu season 2017-18

**Target: 70.0 percent**

**Target Setting Method:** Maintain consistency with national programs, regulations, policies, or laws

**Data Source:** [National Health Interview Survey \(NHIS\)](#), [CDC/NCHS](#)

[Learn more about data measurement for this objective](#)

1. <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=6359>;
2. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/vaccination/increase-proportion-people-who-get-flu-vaccine-every-year-iid-09>

# Common Challenges Continued: Rotavirus

## General eCQM Information

<b>CMS Measure ID</b>	CMS117v8
<b>NQF Number</b>	Not Applicable
<b>Measure Description</b>	Percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV), one measles, mumps and rubella (MMR); three or four H influenza type B (HiB); three hepatitis B (Hep B); one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (Hep A); <b>two or three rotavirus (RV)</b> and two influenza (flu) vaccines by their second birthday
<b>Initial Population</b>	Children who turn 2 years of age during the measurement period and who have a visit during the measurement period
<b>Denominator Statement</b>	Equals <a href="#">Initial Population</a>
<b>Denominator Exclusions</b>	Exclude patients whose hospice care overlaps the measurement period
<b>Numerator Statement</b>	Children who have evidence showing they received recommended vaccines, had documented history of the illness, had a seropositive test result, or had an allergic reaction to the vaccine by their second birthday
<b>Numerator Exclusions</b>	Not Applicable
<b>Denominator Exceptions</b>	None

## Rotavirus vaccination (minimum age: 6 weeks)

### Routine vaccination

- **Rotarix:** 2-dose series at 2 and 4 months
- **RotaTeq:** 3-dose series at 2, 4, and 6 months
- If any dose in the series is either **RotaTeq** or unknown, default to 3-dose series.

### Catch-up vaccination

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see [Table 2](#).

1. <https://ecqi.healthit.gov/ecqm/ep/2020/cms117v8>
2. <https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html#note-rotavirus>

# Adding More Complexity...

## Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration — United States, 2020

Weekly / May 15, 2020 / 69(19);591-593

On May 8, 2020, this report was posted online as an MMWR Early Release.

Jeanne M. Santoli, MD<sup>1</sup>; Megan C. Lindley, MPH<sup>1</sup>; Malini B. DeSilva, MD<sup>2</sup>; Elyse O. Kharbanda, MD<sup>2</sup>; Matthew F. Daley, MD<sup>3</sup>; Lisa Galloway<sup>1</sup>; Julianne Gee, MPH<sup>4</sup>; Mick Glover<sup>5</sup>; Ben Herring<sup>6</sup>; Yoonjae Kang, MPH<sup>1</sup>; Paul Lucas, MS<sup>1</sup>; Cameron Noblit, MPH<sup>1</sup>; Jeanne Tropper, MPH, MS, MBA<sup>1</sup>; Tara Vogt, PhD<sup>1</sup>; Eric Weintraub, MPH<sup>4</sup> ([View author affiliations](#))

[View suggested citation](#)



Fewer routine/primary care visits = fewer opportunities to vaccinate

- Higher rates of under-immunized patients
- Higher risk of preventable diseases
- Missed routine well care visits

*Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: How do you find patients who are missing vaccinations? (check all that apply)?**

# Getting the Data Right

Complex dosing schedules = complex reporting

Person	125837	126179	127140	129122	128430	128817	129911
DOB	5/1/2019	5/21/2019	8/3/2019	9/8/2019	11/2/2019	12/2/2019	12/28/2019
t. Age in Months	12.69	12.03	9.60	8.42	6.61	5.62	4.77
DTaP 1	7/2/2019	7/29/2019	11/7/2019	11/12/2019	2/7/2020	2/3/2020	2/25/2020
DTaP 2	9/3/2019	10/7/2019	2/26/2020	1/7/2020	OVERDUE	OVERDUE	OVERDUE
DTaP 3	11/11/2019	12/17/2019	OVERDUE	UPCOMING	UPCOMING	UPCOMING	UPCOMING
DTaP 4	UPCOMING	UPCOMING	UPCOMING	UPCOMING	UPCOMING	UPCOMING	UPCOMING
IPV 1	7/2/2019	7/29/2019	11/7/2019	11/12/2019	2/7/2020	2/3/2020	2/25/2020
IPV 2	9/3/2019	10/7/2019	2/26/2020	1/7/2020	OVERDUE	OVERDUE	OVERDUE
IPV 3	11/11/2019	12/17/2019	DUE	DUE	DUE	UPCOMING	UPCOMING
MMR 1	DUE	DUE	UPCOMING	UPCOMING	UPCOMING	UPCOMING	UPCOMING
Hib 1	7/2/2019	7/29/2019	11/7/2019	11/12/2019	2/7/2020	2/3/2020	2/25/2020
Hib 2	9/3/2019	10/7/2019	2/26/2020	1/7/2020	OVERDUE	OVERDUE	OVERDUE
Hib 3	11/11/2019	12/17/2019	OVERDUE	OVERDUE	OVERDUE	UPCOMING	UPCOMING
HepB 1	5/1/2019	5/21/2019	11/7/2019	11/7/2019	11/2/2019	2/3/2020	1/25/2020
HepB 2	7/2/2019	7/29/2019	2/26/2020	1/7/2020	1/22/2020	OVERDUE	2/25/2020
HepB 3	11/11/2019	12/17/2019	DUE	DUE	DUE	UPCOMING	UPCOMING
VZV 1	DUE	DUE	UPCOMING	UPCOMING	UPCOMING	UPCOMING	UPCOMING
PCV 1	7/2/2019	7/29/2019	11/7/2019	11/12/2019	2/7/2020	2/3/2020	2/25/2020
PCV 2	9/3/2019	10/7/2019	2/26/2020	1/7/2020	OVERDUE	OVERDUE	OVERDUE

=IF(ISNA(VLOOKUP(\$A10&J\$1,'Numerator Data'!\$D\$2:\$E\$50000,2,FALSE)),IF(J\$3>='Vaccine Schedule'!\$D8,"OVERDUE",IF(AND(J\$3>'Vaccine Schedule'!\$B8,J\$3<='Vaccine Schedule'!\$C8),"DUE","UPCOMING")),VLOOKUP(\$A10&J\$1,'Numerator Data'!\$D\$2:\$E\$50000,2,FALSE))\*

\*Courtesy of Caitlyn Hagarty at Family Care Health Center in St Louis



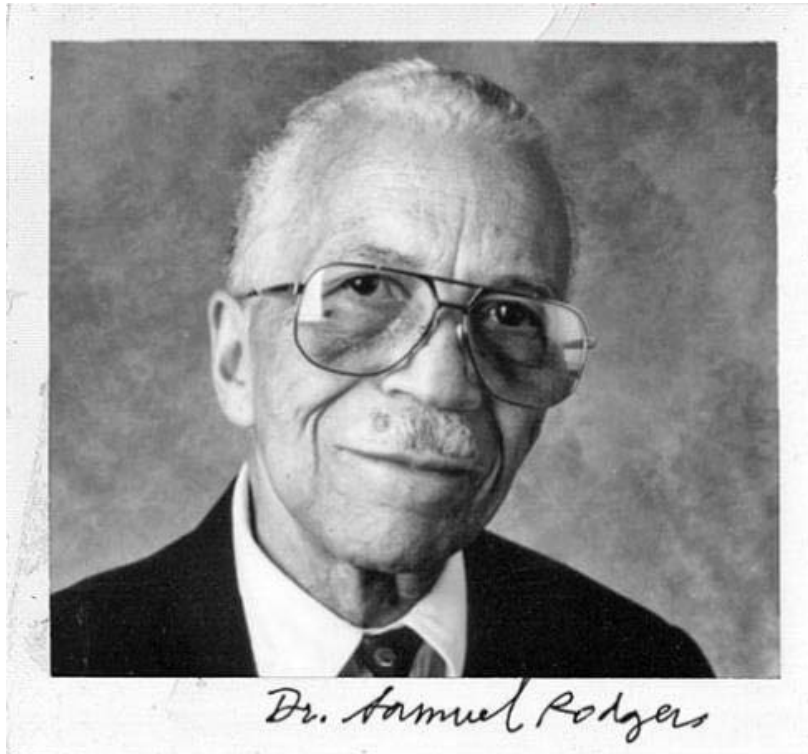


# Immunization Improvement Project

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# Samuel Rodgers Health Center



*We've believed in family since the beginning.*

*Families come in all shapes and sizes, and at Sam Rodgers, every family matters to us.*

*We're committed to all cultures and all backgrounds, delivering world-class health care with universal compassion.*

*Everyone is family here at Sam Rodgers.*



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[SamRodgers.org](http://SamRodgers.org)



## Who We Serve

*Today, we carry out Dr. Rodgers' legacy at 5 locations in the KC metro, serving about 25,000 patients.*

*Family is at the heart of everything we do & so we offer health care for the whole family . . . from newborns to seniors.*

*We offer comprehensive, quality medical, dental & behavioral health care. We speak your language & we know your community.*

Founded in 1968 - Samuel U. Rodgers, MD

- ❖ 25,000 patients and 230 employees
- ❖ 42% Children under 17 years
- ❖ 31% Best served in another language
- ❖ 38 Languages spoken

- 
- ❖ 19% Black/African American
  - ❖ 43% Latino
  - ❖ 28% White
  - ❖ 6% Asian
  - ❖ 4% Other

- 
- ❖ 92% Live below 200% of poverty level & eligible for sliding fee discount
  - ❖ 40% Lack insurance coverage



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## Immunization Changes



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### UDS Childhood Immunization Measure Revised

- ❖ 3yr. old to 2 yr. old (2016)
- ❖ 24 Vaccines have to be given before age 2

### HPV Adolescent Immunization

- ❖ 2 dose version of vaccine introduced in place of 3 dose version (2016)
- ❖ HEDIS requires dose interval of at least 180 days
- ❖ Multiple appointments over 6 -12 month period

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# Immunization Rates

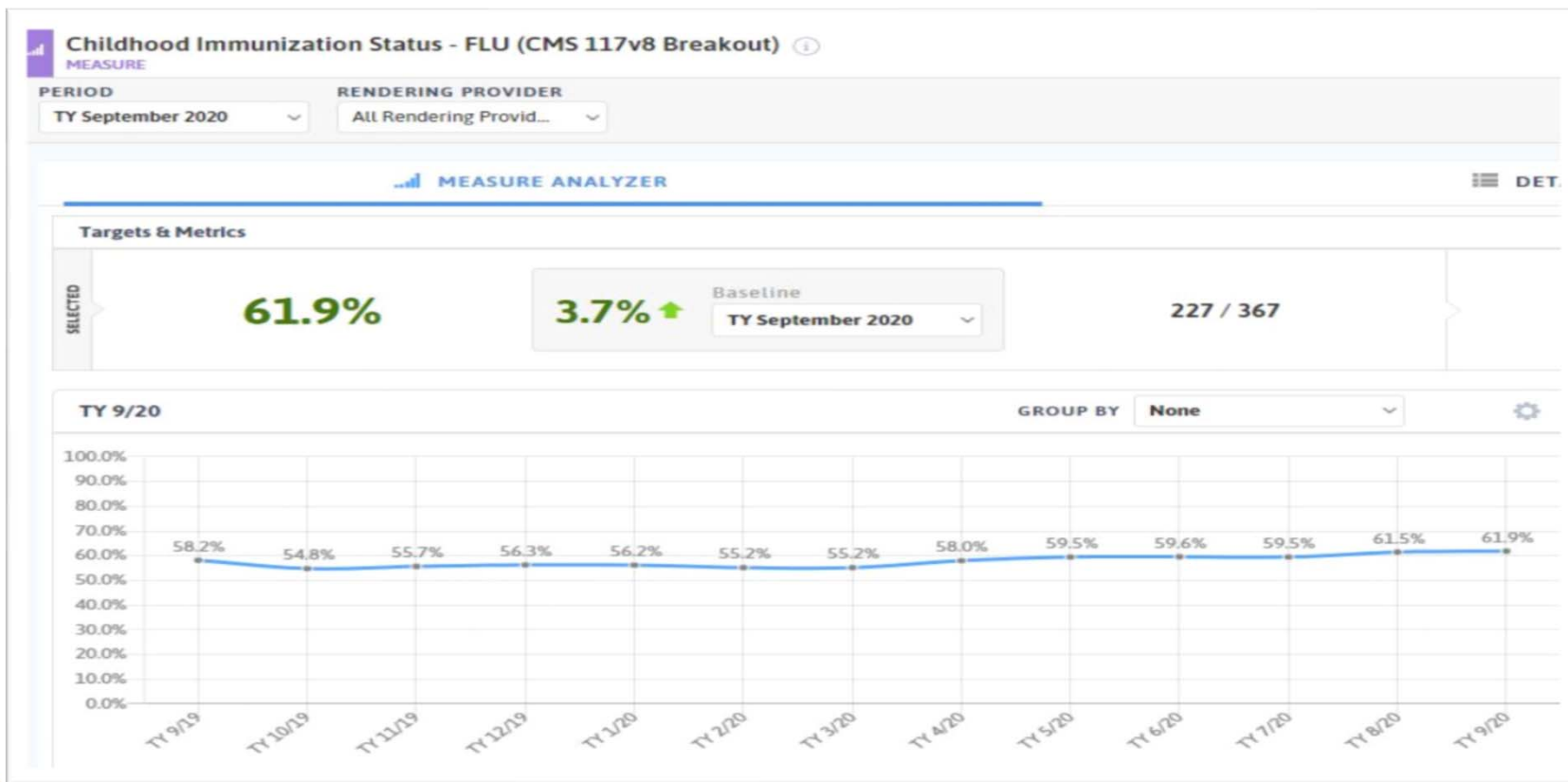


*Love them, Protect them, Immunize them!*

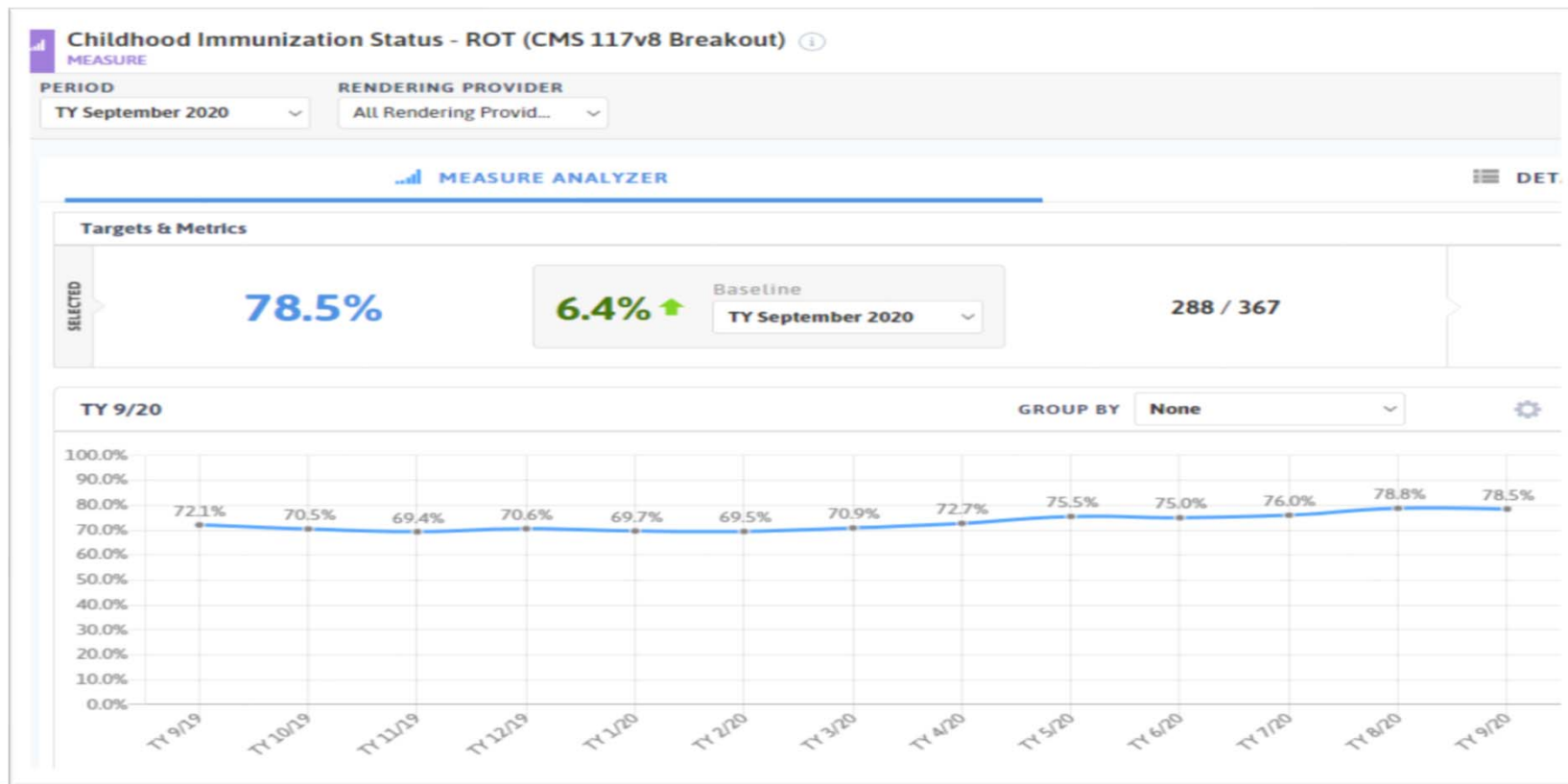
Year	UDS Childhood Immunizations (2 yr. olds)	HPV Immunizations (13 yr. olds)
2015	73% (3 yr. olds)	15%
2016	31%	16%
2017	40%	48%
2018	39%	57%
2019	44%	66%



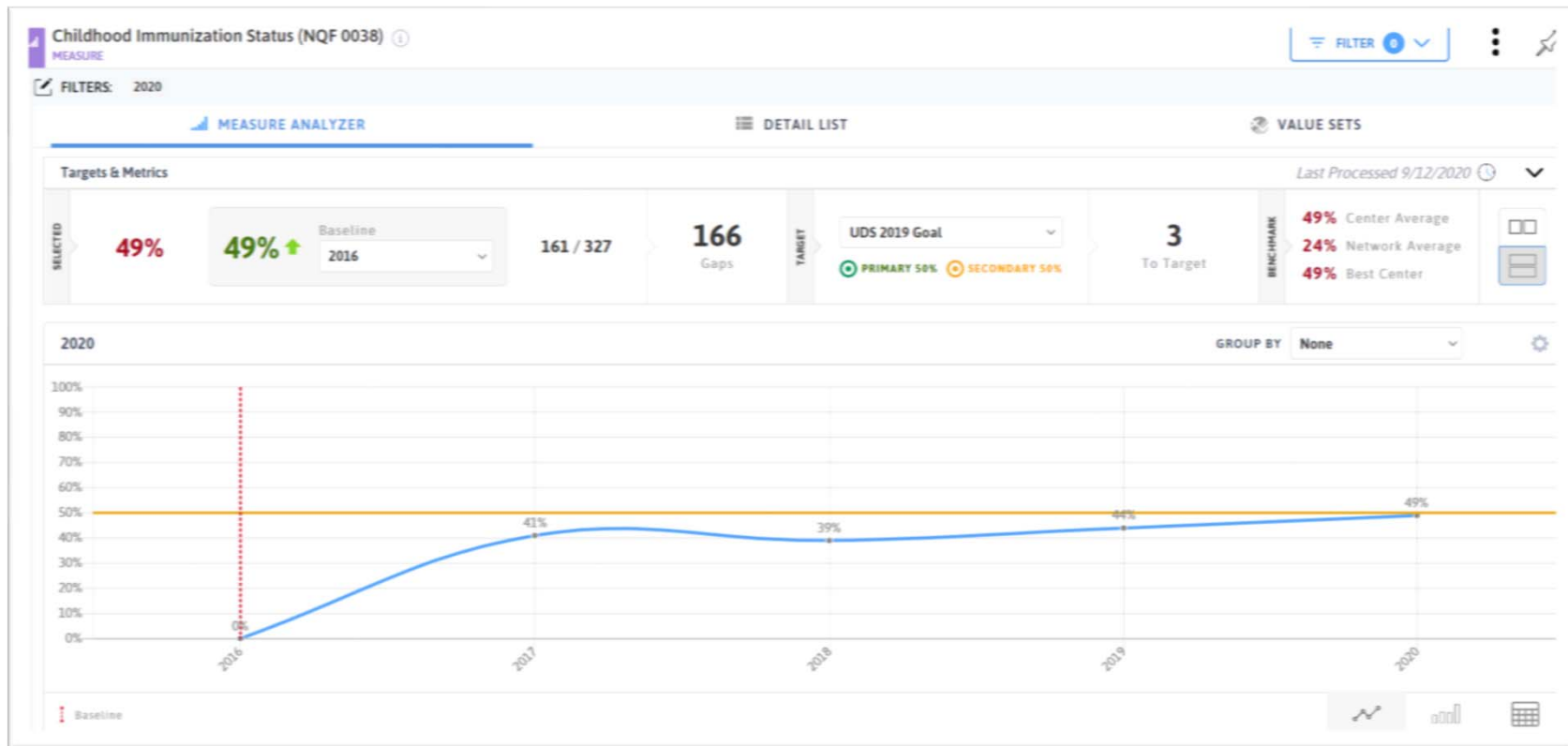
# Childhood Immunization Status - Flu



# Childhood Immunization Status - Rotavirus



# Childhood Immunization Status



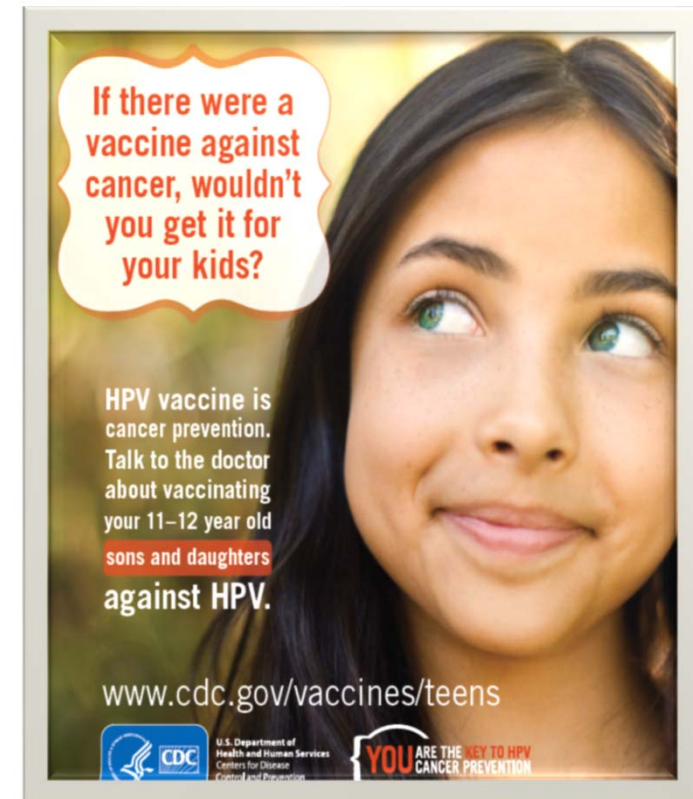
# Improvement Initiatives

## Challenges

- ❖ Refusal due to financial reasons
- ❖ Frequent address changes
- ❖ No interface between State immunization registry & EHR
- ❖ Cultural & Language Barriers

## Interventions

- ❖ Educational posters in waiting & exam rooms to raise awareness on importance of vaccines
- ❖ Clinical providers educated patients on benefits of immunizations



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# Targeted Improvement Initiatives

## Childhood Immunizations

### Challenges:

- ❖ 18-month cut-off age for all immunizations
- ❖ Rotavirus vaccine series had to be completed before 8 months
- ❖ Flu vaccine refusal due to religious reasons and diverse cultural setting - presence of pork derivatives

## HPV

### Challenges:

- ❖ HPV 2 dose vaccine to be complete by 13 yrs.
- ❖ HPV vaccine declination - considered it permission to engage in sexual activity
- ❖ HPV significantly lower (16%) than MCV and Tdap (approx. 80%) due to schools not requiring the immunization

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### Interventions:

- ❖ DRVS registries, reports and pre-visit planning alerts/report
- ❖ Provider and patient education
- ❖ Vaccine bundling approach
- ❖ Care coordinator outreach addressing care gaps
- ❖ Community partnerships including sporting events designed to educate parents and adolescents about the vaccines





# Partnerships & Resources

**Vaccines for Children**  
Protecting America's children every day

The Vaccines for Children (VFC) program helps ensure that all children have a better chance of getting their recommended vaccines. VFC has helped prevent disease and save lives.

CDC estimates that vaccination of children born between 1994 and 2018 will:

- prevent **419 million** illnesses  
*(26.8 million hospitalizations)*
- help avoid **936,000** deaths
- save nearly **\$1.9 trillion** in total societal costs  
*(that includes \$406 billion in direct costs)*

more than the current population of the entire U.S.A.

greater than the population of Seattle, WA

more than \$5,000 for each American

## Outreach Events

- ❖ Local schools and sports teams for immunization awareness events
- ❖ American Cancer Society HPV awareness events

## Programs

- ❖ Vaccine for Children (VFC) Program - no cost to the eligible patient
- ❖ Pharmaceutical company vaccine helpline to assist patients not eligible for VFC

## Technology

- ❖ DRVS PVP alerts for vaccination status
- ❖ Missouri Immunization Registry (Show Me Vax) interfaced with EHR (currently unidirectional only)
  - ❖ 2-way communication scheduled for 2020



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# Azara DRVS Immunization Registry

## Quality

- ❖ Uses registry to create list of patients' missing immunizations
- ❖ Analyzes to identify gaps in appointments, WCC, vaccines, etc. (time intensive)

## Care Coordination

- ❖ Schedules patients due for immunizations
- ❖ Immunization nurse vaccinates patients (scheduled & walk-ins)

MOST RECENT			NEXT APPOINTMENT				HPV
ENC	PROVIDER	LOCATION	NEXT APPOINTM...	PROVIDER	NUMERAT...	EXCLUSI...	ENCOUNTER D...
9/13/2018	CRUZ, JOSE	Downtown Campus			N	N	9/13/2018
11/12/2019	BRINTON, KATIE	Downtown Campus			N	N	11/9/2018
12/6/2019	SHAKYA, NIVA	Downtown Campus			N	N	6/6/2019
11/8/2019	KULKARNI, ARCHANA	Downtown Campus			N	N	11/8/2019



# Azara DRVS Pre-Visit Planning (PVP) Report

Alert administration configured for **ALL immunizations**

## Clinical Staff

- ❖ Encouraged strongly to use daily to prepare for patient visits
- ❖ Advises patients to get vaccine same day or schedule for immunizations

ALERT	MESSAGE	MOST RECENT DATE	MOST RECENT RESULT
Lead	Overdue		
Lead Scr	Missing		
BMI % >85%	At risk	2/25/2020	89
2 year old Imm	Missing		Missing: flu, pcv, rot



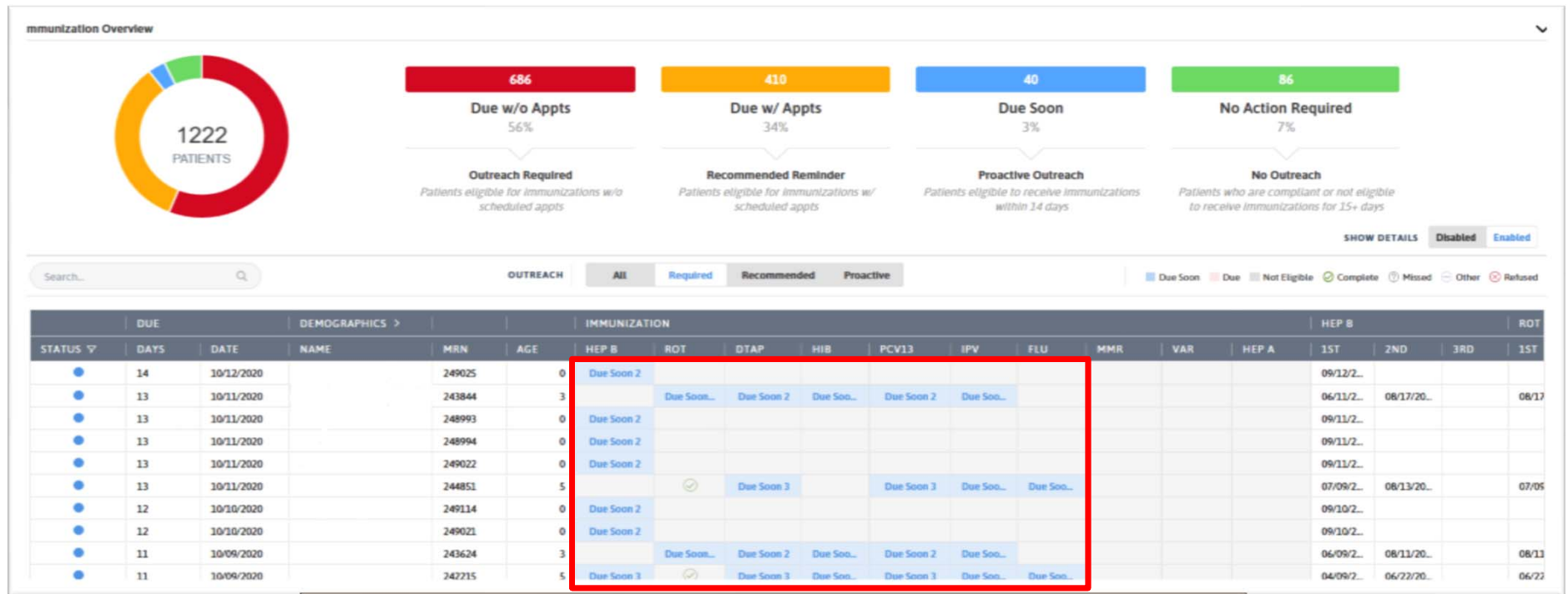
# Future Improvement Initiatives

## Workflow Improvements Underway

- ❖ Azara DRVS Immunization Management Report Implementation
  - ❖ Reduces analysis time
  - ❖ Actionable Report
- ❖ Utilize CareMessage to text patients due for vaccines
  - ❖ Messaging platform designed exclusively for safety net organizations
  - ❖ 2-way messaging
- ❖ Mobile Unit for Community & School-based Immunizations
  - ❖ Newly acquired in May 2020 for school-based clinics (on hold due to COVID)
  - ❖ Potential use for flu vaccinations fall 2020



# Immunization Management Report

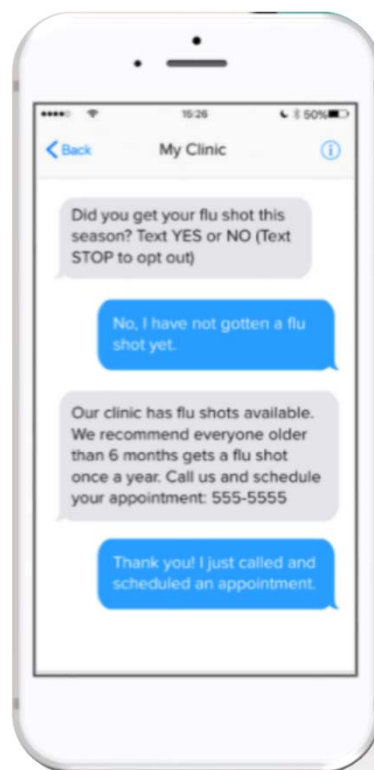


- ❖ Identifies immunization status of patients
- ❖ Shows patients due soon & overdue for vaccines



# Communicating with CareMessage

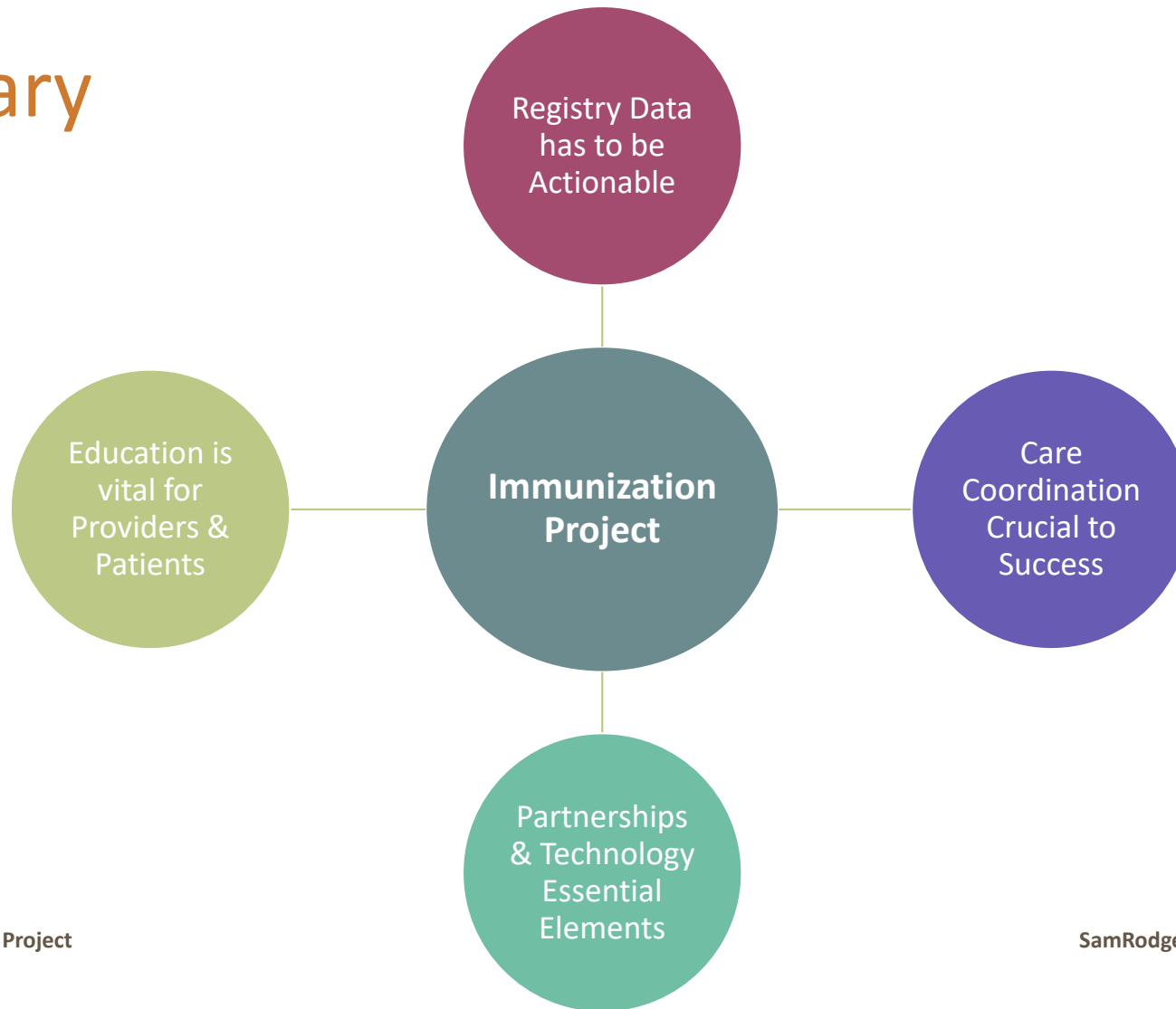
- ❖ Piloting currently with COVID results
- ❖ Plans underway to use for closing care gaps



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# Summary



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Questions?





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