



Evaluation of “Catch Up to Get Ahead” efforts on administration of routine childhood vaccinations during COVID-19 pandemic, United States Indian Health Service, 2020

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Abstract

Routine immunization rates in the United States (US) declined immediately after the US declared COVID-19 a public health emergency in March 2020. Decreases in childhood vaccination place children at risk for vaccine-preventable diseases and communities at risk for outbreaks from these diseases. The US Department of Health and Human Services (HHS) launched “Catch Up to Get Ahead” in August 2020 to promote routine childhood immunization. The decline in mean coverage of the combined 7-vaccine series among children aged 19–35 months was less in Indian Health Service (IHS) federal health centers that implemented “Catch Up to Get Ahead” compared to IHS federal health centers that did not. The effort to promote catch-up vaccination may have showed promise in minimizing the decline in childhood vaccination coverage during the pandemic. However, the effort was not enough to reach pre-pandemic levels, indicating the need for more robust and sustained efforts to catch children up on all delayed immunizations.

Keywords Catch-up vaccinations · COVID-19 pandemic · Routine childhood immunization

Key messages

- The US Department of Health and Human Services’ “Catch Up to Get Ahead” efforts may have helped prevent further decline in routine childhood immunization rates for children aged 19–35 months in the Indian Health Service.

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- Domestic and global health partners should continue to provide outreach to families whose children have missed vaccination doses, prompt clinicians to administer vaccines that are overdue when children are seen, and let families know what precautions are in place for safe delivery of in-person services to continue to promote routine childhood vaccination.

Introduction

In March 2020, the President of the United States declared COVID-19 to be a public health national emergency and state and local authorities put in place stay-at-home orders to reduce the spread of the disease. The stay-at-home orders led to significant declines in well-child visits and routine childhood immunizations that left children and communities at risk for vaccine-preventable diseases and outbreaks [1–4]. Despite CDC guidance emphasizing the importance of continuing routine well-child care and immunizations [5], an analysis of 10 states found that in 2020, rates of administration of the measles, mumps, and rubella (MMR) vaccine, tetanus, diphtheria, and pertussis (Tdap) vaccine, human papillomavirus (HPV) vaccine, and diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine decreased significantly from the average number administered during the same period in 2018 and 2019 in March–May, and remained below the 2018 and 2019 levels in June–September across all applicable age groups [4]. Several factors likely led to this decline, including disruption of normal operations of health care facilities, stay-at-home orders, and parent concerns regarding the risk of contracting COVID-19 in medical settings [4]. As state and local health authorities began to lift stay-at-home orders in summer 2020, well-child visits and the number of vaccine doses ordered by health care providers increased. However, to recover childhood immunization rates before the 2020 school year, the US Department of Health and Human Services (HHS) coordinated an effort to increase awareness and urgency about the importance of and the need to catch up on childhood immunizations.

In August 2020, the Office of Infectious Disease and HIV/AIDS Policy (OIDP), Office of the Assistant Secretary of Health, HHS, launched “Catch Up to Get Ahead” (Catch Up): a call-to-action to coordinate efforts to encourage children to get caught up on delayed routine immunizations. Specifically, Catch Up efforts aimed to coordinate communication and increase vaccination opportunities by encouraging expansion of office and clinic hours for vaccination services, informing parents about the COVID-19 safety procedures in health care settings, and encouraging parents to arrange to vaccinate their children. This would enable children to get caught up on their immunizations and would mitigate pressure on the health care system from vaccine-preventable diseases as well as the upcoming influenza season.

The Department of Health and Human Services intended Catch Up to reach a broad audience, ranging from parents and vaccination service providers to policy makers and advocacy groups. Communication resources included an online toolkit with a variety of communication materials, dissemination of talking points, press releases, and supportive communication from leaders across HHS. Strategies specific to healthcare providers included identifying children who missed vaccinations,



promoting the accessibility and safety of the practice setting, and increasing communication to encourage parents to get their children up-to-date on recommended vaccinations.

Methods

To accomplish the goals of Catch Up, the Office of Infectious Disease and HIV/AIDS Policy (OIDP) engaged a range of partners, including federal agencies, state and local officials, immunization advocacy groups, medical organizations, public health organizations, parenting groups, and educational and youth organizations. One of OIDP’s federal partners in Catch Up was the Indian Health Service (IHS). IHS provides health services, including routine childhood immunizations, to American Indians and Alaska Natives through 117 federal health centers, including hospitals and clinics. IHS disseminated Catch Up materials through email to all their area and clinic immunization coordinators on August 12, 2020. To evaluate the impact of the effort, IHS surveyed their federal health centers using an online survey from October 30, 2020, through November 20, 2020, about activities they implemented and vaccination coverage of the combined 7-vaccine series (at least four doses of DTaP, three doses of poliovirus vaccine, one dose of MMR, three doses of hepatitis B vaccine, three doses of *Haemophilus influenzae* type B vaccine, one dose of varicella vaccine, and four doses of pneumococcal conjugate vaccine) among children aged 19–35 months. IHS sent two email reminders to area immunization coordinators during the survey period to solicit additional responses.

Results

Eight out of 117 federal health centers responded to the voluntary survey, reporting their activities and vaccination data (7% response rate). Five of these federal health centers actively promoted Catch Up and three federal health centers maintained their usual practices and did not promote Catch Up. Table 1 describes select characteristics of the eight federal health centers included in the evaluation. Table 2 describes the intervention activities that the five federal health centers implemented during their effort to promote catch-up immunizations. The research team collected data on vaccination coverage for the combined 7-vaccine series among children aged 19–35 months for three time periods: pre-pandemic (up-to-date 7-vaccine series as of September 30, 2019, for children born from November 1, 2016 through February 28, 2018), early pandemic (up-to-date 7-vaccine series as of June 30, 2020, for children born from July 1, 2017 through November 30, 2018), and pandemic intervention period (up-to-date 7-vaccine series as of September 30, 2020, for children born from November 1, 2017 through February 28, 2019).

Vaccination coverage rates declined from the pre-pandemic period to the early pandemic period for federal health centers that implemented at least one of the catch-up activities (average relative percent change: –7%, range –38% to 6%) and federal health centers that did not implement catch-up activities (average relative percent



Table 1 Select characteristics of federal health centers by comparison group, Indian Health Service, August–September, 2020

Characteristic	Number (%) in Catch Up group (n = 5)	Number (%) in non-Catch Up group (n = 3)
<i>Type of federal health center</i>		
Hospital	3 (60)	0 (0)
Clinic	2 (40)	3 (100)
<i>Geographic location^a</i>		
Urban	1 (20)	2 (67)
Rural	4 (80)	1 (33)

^aGeographic location was determined based on Metropolitan Statistical Area (MSA) Classification

Table 2 Activities utilized by federal health centers that promoted the “Catch Up to Get Ahead,” Indian Health Service, August–September, 2020

“Catch Up to Get Ahead” Activities	Number (%) that conducted activity N = 5
Verbal, on site promotion by facility staff (receptionist, nurse, physician assistant, nurse practitioner, physician)	4 (80)
Telephone calls to patients	4 (80)
Postcards or letters mailed to patients	4 (80)
Facility-wide announcement and communication with the staff	3 (60)
Expanded immunization service hours	3 (60)
Signs, posters, banners, or other notifications posted in the facility to inform patients	3 (60)
Website promotion (webpage, pop-up)	2 (40)
Social media postings (Facebook, Instagram, Twitter)	2 (40)
Local mass media (newspaper, radio, television)	1 (20)

change: –10%, range –23% to 1%). The decline continued during the intervention period; however, the decline was less for federal health centers that implemented catch-up activities. The average relative percent change of vaccination coverage rates from pre-pandemic to pandemic intervention period for federal health centers that implemented catch-up activities was –11% (range –40% to 5%), while the mean relative percent change for federal health centers that did not implement catch-up activities was –21% (range –34% to –7%) (Table 3).



Table 3 Vaccination coverage for the combined 7-vaccine series^a among children aged 19–35 months and percent change from COVID-19 pandemic period compared to pre-pandemic period, eight Indian Health Service federal health centers, Indian Health Service, 2019–2020

	Pre-pandemic, As of September 30, 2019 (%)	Early pandemic, As of June 30, 2020 (%)	Pandemic intervention, As of September 30, 2020 (%)	Percent change from Pre-pandemic to Early pandemic (%)	Percent change from Pre-pandemic to Intervention (%)	Difference in percent change (%)
Catch Up Clinic 1	50	31	30	-38	-40	-2
Catch Up Clinic 2	92	94	97	2	5	3
Catch Up Clinic 3	60	57	53	-5	-12	-7
Catch Up Clinic 4	56	57	56	2	0.0	-2
Catch Up Clinic 5	16	17	15	6	-6	-13
Non-Catch Up Clinic 1	35	27	23	-23	-34	-11
Non-Catch Up Clinic 2	56	52	44	-7	-21	-14
Non-Catch Up Clinic 3	68	69	63	2	-7	-9
Catch Up group, mean (range) (N=5)	55 (16 to 92)	51 (17 to 94)	50 (15 to 97)	-7 (-38 to 6)	-11 (-40 to 5)	-4 (-13 to 3)
Non-Catch Up group, mean (range) (N=3)	53 (35 to 68)	49 (27 to 69)	43 (23 to 63)	-10 (-23 to 1)	-21 (-34 to -7)	-12 (-14 to -9)

^aAt least four doses of diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP); three doses of poliovirus vaccine; one dose of measles, mumps, and rubella vaccine (MMR); three doses of hepatitis B vaccine; three doses of *Haemophilus influenzae* type B vaccine; one dose of varicella vaccine; and four doses of pneumococcal conjugate vaccine



Discussion

In August 2020, the Office of Infectious Disease and HIV/AIDS Policy led the national “Catch Up to Get Ahead” effort in response to a decrease in childhood vaccination rates from the COVID-19 pandemic [1–4]. The Indian Health Service (IHS) promoted Catch Up in their federal health centers and evaluated its impact on vaccination coverage rates. IHS documented that the combined 7-vaccine series coverage rates among children aged 19–35 months declined from pre-pandemic to pandemic periods. The decline was, however, less among IHS federal health centers that implemented components of the effort compared to IHS federal health centers that did not engage with the effort. Federal health centers that participated in Catch Up activities implemented verbal onsite promotion ($n=4$), called patients by telephone ($n=4$), and mailed letters or postcards to patients ($n=4$). These activities of direct outreach to patients align with CDC recommendations to identify, contact, and schedule appointments with families of children who have missed doses [6]. While Catch Up may have helped prevent further decline in routine immunization rates, the 7-vaccine series coverage rates did not reach pre-pandemic levels.

There were several limitations to the IHS evaluation. The federal health centers that participated in the survey may not be representative of all IHS federal health centers that conducted or did not conduct Catch Up activities and the low response rate may introduce nonresponse bias. The low response rate may have been due to competing priorities as staff may have been reassigned to respond to the pandemic. The sample size was too small to conduct statistical tests, but the overlap in observed differences in percent change may suggest no significant difference between Catch Up and non-Catch Up groups. For ease of data reporting, IHS federal health centers reported vaccination data using their routine quarterly report template. Coverage rates for children aged 19–35 months were reported as of September 30, 2019, June 30, 2020, and September 30, 2020, for pre-pandemic, early pandemic, and pandemic intervention periods, respectively. This measures up-to-date vaccination coverage, therefore, administration of many of the vaccine doses in the combined 7-vaccine series occurred prior to the IHS kickoff in the intervention group and we could not assess the true impact of Catch Up on vaccination coverage directly. The federal health centers voluntarily implemented and provided data on their Catch Up activities; the researchers did not independently verify the data. We only collected data on Catch Up and did not evaluate the activities that may have been implemented in response to COVID-19 or other routine practices. Activities in both comparison groups may have overlapped. These federal health centers were not randomized to implement Catch Up; therefore, we were unable to control for other factors that may impact vaccine administration.

Despite these limitations, the IHS evaluation of Catch Up provided support that the effort may have contributed to preventing further decline in routine childhood immunization rates for children aged 19–35 months. HHS partner networks can disseminate a robust and coordinated communications effort. Healthcare



systems should continue to provide outreach to families whose children have missed doses, prompt clinicians to administer vaccines that are overdue when children are seen, and let families know what precautions are in place for safe delivery of in-person services.

Conclusion

The IHS and state vaccination data show that routine childhood vaccination rates have not reached pre-pandemic levels. Thus, it will be critical to use the lessons learned and continue catch-up efforts that engage stakeholders from tribal, state, and local governments, professional organizations, pharmaceutical and insurance companies, and groups in a position to advocate immunization. Global partners may also take lessons learned from the Catch Up effort and implement catch-up immunization strategies to improve worldwide routine childhood immunization coverage and reduce vaccine-preventable infections and outbreaks.

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