IMPLEMENTING A SCHOOL-BASED IMMUNIZATION PROGRAM

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Objectives

(Image retrieved from www.ar.inspiredpencil.com)

- Define the immunization non-compliance challenge within the school district that lead to this quality improvement initiative
- Review barriers to immunization compliance within an urban school district
- Examine current literature related to evidence-based best practice to increase immunization compliance in an urban school district
- Discuss the implementation of Allentown School District's school nurse led vaccine administration program
- Review outcome data

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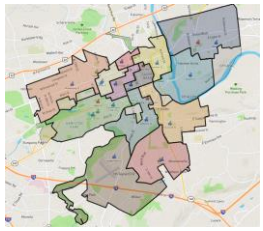
School District Demographics



- Allentown School District is a large, urban school district in Lehigh County
- Annual enrollment is between 16,000 and 17,000 students
- 24 individual school buildings
- Diverse learning community
  - Students originate from 51 different countries and speak 26 different languages
  - Roughly 89% of students identify as a race other than white
  - 89.1% are denoted as low income
  - Majority of students are uninsured or underinsured

(Allentown School District, 2017)

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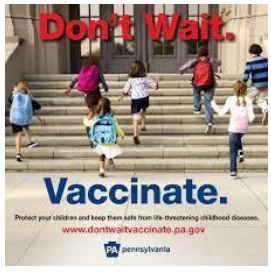
Problem Summary



(Image Retrieved from healtymepa.com)

- Under vaccination identified as a district-wide problem
- Affected nearly 1,000 students annually
- Leads to exclusion from school per PA state law (Pennsylvania Department of Heath, n.d.).
- Far-reaching consequences identified
  - Communicable / infectious disease risk
  - Exclusion affects multiple stakeholders in the school and the community
    - At risk for decreased academic performance
    - An increase in truancy rates
    - Strained relationships

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Problem Summary

(Image Retrieved from mcall.com)

- Extended exclusions from school
  - Lasting from weeks to months in some cases
  - Health Bureau unable to keep up with the demand
  - No medical home due to lack of insurance
- District population transiency makes vaccinations a year-round challenge
- Benchmark data collection to examine extent of noncompliance
  - The District was below county, state and national benchmarks

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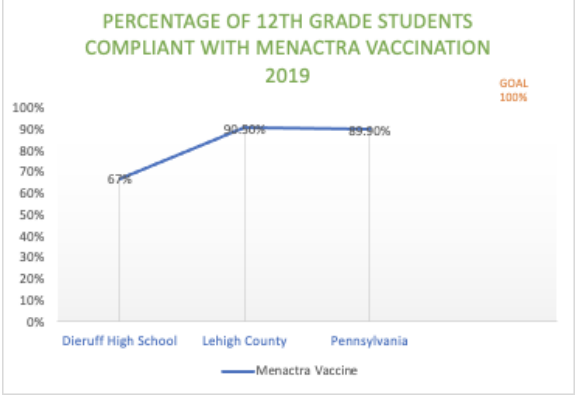
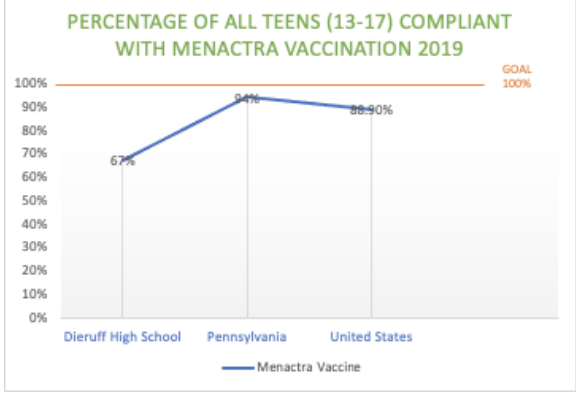
Example Baseline Data





(Perez, 2021)

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Barriers to Immunization Compliance

Disadvantaged socioeconomic status

- Lack of health insurance
- Lack of access to care
- Minority race
- Knowledge deficit
- Language

(Falagas & Zarkadoulia, 2008).

Adolescent age group

- Increased vaccine requirements
- Discontinuation of well-visits
- Lack of a consistent medical home

(Daley et al., 2009).

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What Wasn't Working?

- Previous practice: serial notification letters
  - Boyer-Chuanroong and Denver 2000 study
  - Increased compliance from 45-71%
  - Problem: letters do not address access barriers
- Previous practice: community clinics
  - Averaged 69% show rate
  - Access barriers still present

(Image credit Perez, 2020)

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Identified Best Practice

(Image retrieved from www.darcor.com)

BRING THE VACCINE AS CLOSE TO THE CHILD AS POSSIBLE TO ELIMINATE IDENTIFIED BARRIERS TO IMMUNIZATIONS

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School-Based Immunizations

- Children attend school daily
- The school nurse is the most consistent medical provider to children
- Offering immunizations in school eliminates the most barriers (Lee Ventola, 2016).

(Image credit Perez, 2024)

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Support for Practice Change

- An extensive literature review revealed support for this practice change across several areas:
  - Evidence-Based practice support
  - Physician support
  - Professional support
  - Parental support

(Image retrieved from cpapracticeadvisor.com)

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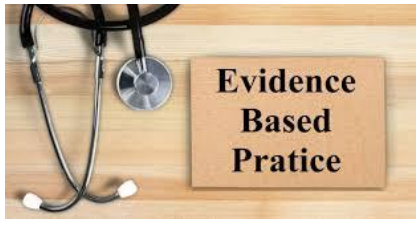
Support for Practice Change: EBP Support

- Toole & Perry (2004) Immunization Project in urban Cincinnati
- School nurses administered vaccines in school
- Vaccine compliance rates increased from 50% to 100%
- Compliance rates were sustained over time
- Intervention strengthened relationships



(Image retrieved from nursing.uworld.com)

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Support for Practice Change: Physicians

- Positive physician attitudes toward school-located vaccine programs
- McCormick et al. (2012) study
  - Convenient for families
  - Effective at increasing immunization rates
  - A necessary alterative to alleviate private practice demands

(Image retrieved from Allentownsd.org)

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Support for Practice Change: NASN

- National Association of School Nurses (NASN)
- Historical roots traced back to late 1800's and small pox vaccinations
- Per NASN (2017)
  - "The school is an ideal place to reach 52 million children from all cultures, socioeconomic groups, and age groups that attend each day; and the school is conveniently located in a familiar and trusted community environment."

(Image retrieved from nasn.org)

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Support for Practice Change: Parents

- Evidence suggests parents are willing to consent to vaccines in school (Gargano et al., 2015; Hansen et al., 2017; Middleman & Tung, 2010).
  - Student doesn't miss school
  - Parent doesn't miss work
  - They don't have to find transportation
  - Trust in school nurse
  - Overall ease

(Image retrieved from healthline.com)

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Evidence-Based Practice Change

REFER TO OUTSIDE COMMUNITY IMMUNIZATION PROVIDERS → EBP CHANGE → SCHOOL NURSE IMMUNIZATION PROGRAM

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Program Initiation Timeline Overview

(Image retrieved from lehighvalleynews.com)

- Research conducted throughout 2020
- Form / policy development Spring 2021
  - Processes / procedures / protocols
- Multidisciplinary team collaboration with key stakeholders Fall 2021
- Equipment and supplies obtained October 2021
  - Donation from Allentown Health Bureau and St. Luke's Health Network
  - Collaborating with internal IT team for monitoring
- Staff education November 2021
- Vaccine consent form approved by ASD solicitor February 2022
- VFC provider application February 2022

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Site Visit and Approval

- March 2022, VFC approved three ASD schools as VFC provider sites
- Allen High School, Central Elementary School, Dieruff High School
- First vaccine shipment received in August 2022
- Began vaccine administration late August 2022 for the 22/23 School Year

(Image credit Perez, 2024)

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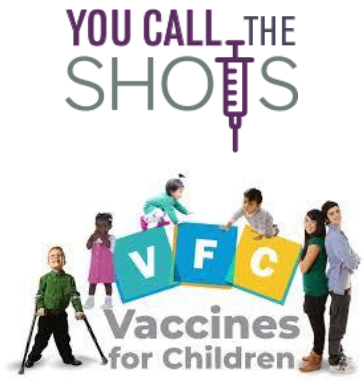
School Nurse Staff Education

- You Call the Shots Modules
- VFC provider handbook
- ASD comprehensive staff training program
- Two goals of the training:
  - Increase competency
  - Project buy-in
- Three educational presentations
  - Part 1: Evidence-based best practice
  - Part 2: Vaccine storage and handling
  - Part 3: Vaccine administration
- Skills checklist



(Images retrieved from CDC.gov)

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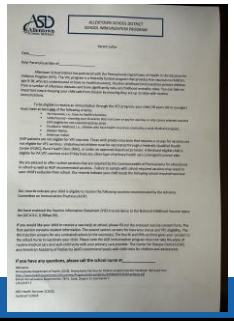
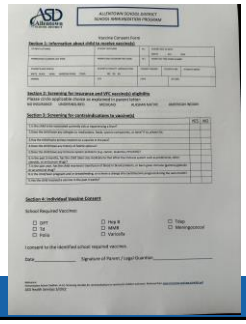
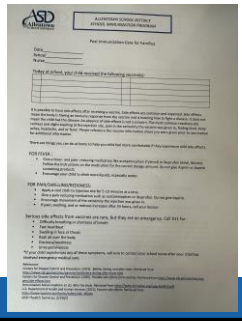
Communication with Families

- Parent letter explaining program
- Vaccine Information Statements (VIS)
- Consent form
- Post immunization care form
- All forms available in English and Spanish







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Year 1 (22/23 School Year)

- Nurses vaccinated students in the health room
  - Streamlined enrollments – vaccinations provided upon entry
- Bi-monthly clinics
- Milestones:
  - On day of exclusion 862 students excluded (5% of student population)
  - Within 1 week down to 335 (meaning 527 were vaccinated and returned to learning)
  - By the end of September only 163 were excluded (only 0.95% of student population)
  - By October, under 36 students were excluded (0.2% of student population)
  - Not all the same students excluded due to constant new enrollments and students on provisional schedules
- Reached zero students excluded by April
- Total of 761 students vaccinated

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Year 1 (22/23 School Year) Lessons Learned

- Demand for vaccines far exceed our initial projections
- Identified need to have additional sites to accommodate families
  - Middle school population
- Increased staff to support
  - Dedicated immunization nurse position
- Needed revision of paperwork process – utilize SIIS / PIERS for documentation
- Students missing well visits with providers
  - Updated parent letter to include promotion of well-child visits

(Image retrieved from lehighvalleynews.com)

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Expansion to additional sites

- In February of 2023, we added two additional VFC sites
- Harrison Morton Middle School
- South Mountain Middle School

(Image retrieved from www.lehighvalleynews.com)

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Year 2 (23/24 School Year)

- Nurses vaccinated in the health rooms
- Immunization nurse rotating through each of the 5 buildings, 1 day per week
- Vaccines brought to other buildings as needed
- Proactive vaccinations for students in rising grades with new vaccine requirements
- Milestones:
  - On day of exclusion 442 students excluded (2.6% of student population)
  - Within 1 week down to 72 students excluded (meaning 370 were vaccinated and returned to learning)
  - By the end of September only 22 were excluded (only 0.1% of student population)
  - By October, down to 5 students were excluded (0.03% of student population)
  - Not all the same students excluded due to constant new enrollments and students on provisional schedules
- Achieved zero students excluded by November
- Total of 1,633 students vaccinated (Mid May 2024)

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Month	Students Excluded 22/23 each week	Students Excluded 23/24 each week
September	862 / 508 / 335 / 245 / 163	442 / 242 / 72 / 42
October	116 / 82 / 56 / 36	18 / 6 / 22 / 12
November	28 / 29 / 30	5 / 4 / 0
December	35 / 22 / 27 / 18	3 / 15 / 7
January	35 / 31 / 31 / 22	2 / 2 / 0 / 6
February	25 / 20 / 16 / 37	7 / 0 / 0 / 0
March	20 / 13 / 16 / 12 / 9	0 / 1 / 0 / 2
April	3 / 0 / 0	1 / 0 / 1 / 0
May	5 / 2 / 4 / 0	0 / 4 / 1 / TBD

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Conclusion

"In order to protect student health, promote student academic success, and preserve community relationships, vaccine compliance must be ensured" *(Perez, 2020).*

- PROTECT STUDENT HEALTH
- PROMOTE ACADEMIC SUCCESS
- PRESERVE COMMUNITY RELATIOSHIPS

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