Oregon All Payer All Claims (APAC) Program

Application for Limited Data Files

APAC-3

This application is used to request limited data sets. If you would like to discuss APAC data in relation to your project prior to submitting this application, please contact apac.admin@odhsoha.oregon.gov with a brief description of the project and your contact information. OHA will have someone contact you to help determine if APAC is appropriate for your project and, if so, which data elements may be needed.

PROJECT INFORMATION

Project Title: A study of school-based health services in Oregon

Principal Investigator: Dr. Janet Currie

Title of Principal Investigator: Professor

Organization: Princeton University

Address: 185A Julis Romo Rabinowitz Building

City: Princeton State: NJ Zip Code: 08544

Telephone: 609 258 7393

Email: jcurrie@princeton.edu

SECTION 1: PROJECT SUMMARY

1.1 Project Purpose: Briefly describe the purpose of the project. You may submit a separate document that details the project's background, methodology and analytic plan in support of your request for APAC data elements.

This project will ask how the availability and utilization of school-based mental and physical health services affects racial, ethnic, and socioeconomic disparities in access to and utilization of health care. Although there has been an expansion in school-based health services nationwide (Love et al., 2019), little is currently known about the types of services, especially mental health services, that are provided in school-based settings. Half of all children with an identified mental health problem receive inadequate care and there are stubborn disparities by race, ethnicity, and socioeconomic status (Hoffman, 2022). The number of SBHS in Oregon increased by a third between 2011-2024 which will enable us to identify how access to an SBHS affected utilization of care for different racial, ethnic, and socioeconomic groups. Moreover, we will be able to see whether particular configurations of services are more effective at reducing utilization gaps and improving health.

Please see the attachment for detail.

1.2 Research Questions: What are the project's key research questions or hypotheses? If this project is research and has been approved by an Institutional Review Board (IRB), the research questions must align with the IRB approval documentation. If needed, a more detailed response may be submitted as a separate file.

- Note: APAC staff will use your response to this question to determine the minimum data elements necessary for this project, in accordance with the HIPAA minimum necessary standard. The research questions should be specific enough to justify the need for each data element beyond identifying it as a "potential confounding variable."

Please see the attachment for detail. We are also attaching the IRB approval documentation.

1.3 Products or Reports: Describe the intended product or report that will be derived from the requested data and how this product will be used. If needed, a more detailed response may be submitted as a separate document with this application.

The intended product is an academic article or several academic articles that will be submitted for publication in academic journals.

1.4 Project Timeline: What is the timeline for the project?

Anticipated Start Date: 04/01/2025

Anticipated Publication/Product Release Date: 12/01/2026

Anticipated End Date: 12/01/2027

1.5 Data files may not be released or reused beyond the terms of the data use agreement resulting from this application regardless of funding source or other obligations of the principal investigator, organization or research team.

☒ I understand this limitation and agree that data files or work products will not be shared at less than an aggregated, de-identified level.

☐ I understand this limitation and request approval to share data files or work products at a potentially re-identifiable level as follows:

SECTION 2: PROJECT STAFF

2.1 Project Staff: Please list all individuals in addition to the principal investigator who will have direct or indirect access to the data. This must include any contractors or other third parties with access to the data.

Name: Anna Malinovskaya Email: am2991@princeton.edu	Project role: collaborator / research staff
Name: Email:	Project role:
Name: Email:	Project role:
Name: Email:	Project role:
Name: Email:	Project role:
Name: Email:	Project role:
Name: Email:	Project role:

Attach additional sheets as needed.

2.2 Technical Staff: Please list any additional staff who will be maintaining the data file(s) or otherwise assisting in the transfer or receipt of the data files. Files will not be transferred to anyone who is not listed on this application as either project staff or technical staff.

Name: Anna Malinovskaya Email: am2991@princeton.edu	Technical role: Data custodian
Name: Email:	Technical role:

Attach additional sheets as needed.

SECTION 3: DATA REQUEST

3.1 Purpose of the Data Request:

a. Listed below are the purposes for which OHA may share APAC data. Please choose the category in which your project falls under (***choose only one***).

- [■] Research (refer to 45 CFR 164.501 for definition)
- [ ] Public health activities as defined in 45 CFR 164.512(b) by the state or local public health authority
- [ ] Health care operations as defined in 45 CFR 164.501
  - Covered entity as defined in 45 CFR 160.103? [ ] Yes [ ] No
- [ ] Treatment of patient by health care provider as defined in 45 CFR 164.506 (c)(2)
  - Covered entity? [ ] Yes [ ] No
- [ ] Payment activities performed by covered entity or health care provider as defined in 45 CFR 164.506 (c)(3)
  - Covered entity? [ ] Yes [ ] No
- [ ] Work done on OHA's behalf by a Business Associate as defined in 45 CFR 160.103

b. Describe how the project falls into the category chosen above.

This project is research with the anticipated final product being a publication in a peer-reviewed academic journal.

3.2 Direct identifiers. What level of data identifiers are you requesting (***choose only one***)? Reference the Data Elements Workbook for the categorization of data elements.

- [ ] De-identified (as outlined in 45 CFR 164.514(e)) protected health information
- [■] Limited, potentially re-identifiable data elements
- [ ] Restricted direct identifiers (member name, address, date of birth, etc.) *Please note:* Direct identifiers are only released under special circumstances that comply with HIPAA requirements, and will require specific approvals, such as IRB approval, patient consent and/or review by the Oregon Department of Justice.

3.3 Human Subjects Research: IRB protocol and approval are required for most research requests for limited data elements. Not obtaining IRB approval or waiver in advance may delay approval of the data request. **The research questions reported in 1.2 of this application must match the documentation supporting the IRB approval received or the IRB approval will not be accepted for this data application.**

The IRB application should indicate that APAC data contains sensitive personal health information and is subject to HIPAA regulations.

a. Does the project have IRB approval for human subjects research or a finding that approval is not required?

☒ Yes ☐ No

If no, briefly explain why you believe that this project does not require IRB review.

If an IRB reviewed the project, include the IRB application and approval/finding memo with the submission of this APAC-3 and complete parts b-e below.

☑ IRB application and approval memo are attached.

b. Describe how this application is within the authority of the approving IRB.

This research is within the authority of the approving IRB because both researchers are affiliated with Princeton Univ.

c. Describe why the project could not be practicably conducted without a waiver of individual authorization (a waiver of individual authorization is provided by the IRB in cases in which the researcher does not need written authorization from participants to use their PHI):

This is because the sample size for this study is a very large number of individuals.

d. On what date does the IRB approval expire?

SECTION 4: DATA ELEMENTS

4.1 Narrowing Data Needs: Refer to the APAC Data Dictionary for detailed information about the data elements. In compliance with HIPAA regulations, you will only receive data elements that are adequately justified. This means APAC will only provide the minimum necessary data required for the project as represented in the research questions, protocol and IRB approval.

a. What years of data are requested? 2011 through 2022 are currently available.

2011-2023, and 2024-2025 when available

b. What payer types are requested? Check all that apply

☑ Commercial ☑ Medicaid ☐ Medicare Advantage

c. What types of medical claims are requested? ☐ All

☑ Inpatient hospital ☑ Emergency department ☑ Outpatient
☑ Ambulatory surgery ☑ Ambulance ☐ Transportation
☐ Hospice ☐ Skilled Nursing Facility ☑ Professional

d. Demographic data limitations

1. Gender ■ All ☐ Male ☐ Female

2. Age ☐ All ☐ Only 65+ ☐ Only 18 and younger ■ Other 22 and under
(Specify age range)

e. Will data requested be limited by diagnoses, procedures or type of pharmaceutical? Add additional sheet if needed.

Diagnoses, indicate ICD 9 and ICD10 codes to include:
N/A

Procedures, indicate CPT to include:
N/A

Pharmaceuticals, indicate NDC or therapeutic classes to include:
N/A

f. APAC has a small number of out-of-state residents included, most often through PEBB or OEBB coverage. Do you want to include out-of-state residents? ☐ Yes ■ No

4.2 Data Element Workbook: Complete the Data Element Workbook to identify specific data requested.

Data Element Workbook completed and attached, including justifications for each element requested. ☑

SECTION 5: DATA MANAGEMENT & SECURITY

5.1 Data Reporting: APAC data or findings may not be disclosed in a way that can be used to re-identify an individual. Data with small numbers – defined as values of 30 or less (n≤30) or subpopulations of 50 or fewer individuals (n≤50) – cannot be displayed in findings or outputs derived from APAC data. Please describe the techniques you will use to prevent re-identification when findings or outputs result in small numbers or subgroups (e.g. aggregation, cell suppression, generalization, or perturbation).

Our findings will be reported mainly as sample summary statistics and regression coefficients. We will use both cell suppression and data aggregation to prevent re-identification.

5.2 Data Linkage: OHA seeks to ensure that APAC data cannot be re-identified if it is linked or combined with data from other sources at the record, individual or address level. Requesters are strongly encouraged to consult with APAC staff regarding linking APAC data with other data prior to submitting a data request. Health Analytics prefers to conduct APAC data linking in-house and share only encrypted identifiers with data requesters.

a. Does this project require linking to another data source?

■ Yes ☐ No

If yes, please complete parts b-d below.

b. At what level will data be linked?

☑ Address ☑ Facility ☑ Individual person/member

☐ Individual provider

c. If required to link

☐ Authorized to provide data for linking at OHA

☐ Not authorized to provide data for linking at OHA

■ Unknown

d. Describe and justify all necessary linkages, including the key fields in each data set, how they will be linked, the software proposed to perform the linkage and why it is necessary.

Please see the attachment for detail.

e. Describe in detail the steps will you take to prevent re-identification of linked data.

We will use cell suppression and data aggregation (for cells with <=50 observations) when reporting results based on linked data.

5.3 Data Security (required for all applications):

a. Attach a detailed description of your plans to manage security of the APAC data including:
   - Designation of a single individual as the custodian of APAC data, either the principal investigator or staff listed in Section 2 of this application, who is responsible for oversight of APAC data, including reporting any breaches to OHA and ensuring the data are properly destroyed upon project completion.
   - A security risk management plan applicable to APAC data that includes:
     - Secure storage in any and all mediums (e.g., electronic or hard copy)
     - Procedures to restrict APAC data access to only those individuals listed on the data use agreement
     - User account controls, i.e., password protections, maximum failed login attempts, lockout periods after idle time, user audit logs, etc.
     - Confirmation of training for personnel on how to properly manage protected health information in all formats
     - Protection of derivatives of APAC data at the re-identifiable level
     - If applicable, procedures for handling direct identifiers, such as allowing access on a 'need to know' basis only and minimizing risk by storing identifiers separately from other APAC data
     - Procedures for identifying, reporting and remedying any data breach
   - Statement of compliance with HIPAA and the HITECH Act
   - Electronic device protections, i.e., anti-virus or anti-malware software, firewalls, and network encryption

b. Record level or derivative data that can be re-identified must be destroyed within 30 days of the end of the data use agreement, in a manner that renders it unusable, unreadable or indecipherable. What are your plans for destruction of the dataset and any potentially identifiable elements of the data once the data use agreement has expired?

Record level or derivative data that can be re-identified will be destroyed within 30 days of the end of the data use agreement.

SECTION 6: COST OF DATA

Because each data set is unique, cost can be determined only after the specific data elements are finalized. APAC staff will then review your request and estimate the number of hours required to produce and validate the data. APAC requires reimbursement for the cost of file transfer ($890 per request) and the total time spent by APAC staff on research and administrative activities. Payment must be received before the data will be provided. APAC staff will provide an invoice to facilitate payment. OHA's W-9 is available on request.

SECTION 7: CHECKLIST AND SIGNATURE

7.1 Checklist: Please indicate that the following are completed:

- ☒ I acknowledge that payment will not be refunded if OHA fulfills the data request, but the receiving entity does not have the capability to import or analyze the data
- ☒ All questions are answered completely
- ☒ Data Element Workbook is attached to email or printed application
- ☒ IRB application with approval/finding memo is attached to email or printed application, if applicable
- ☒ Data privacy and security policies for the requesting organization, and any third-party organizations, are attached to the email or printed application

7.2 Optional Racial Justice Addendum: Please see the last two pages of this form for options if data will be used to eliminate racial injustice.

- ☒ I am interested in this option
- ☐ This option does not apply to my data request

7.3 Signature: The individual signing below has the authority to complete this application and sign on behalf of the organization identified in Section 1. By signing below, the individual attests that all information contained within this data Request Application is true and correct.

Signature  Date 10/02/2024

Printed name Janet Currie

Title Professor and Director of Princeton Center for Health and Wellbeing

Return the completed form with required attachments to APAC.Admin@odhsoha.oregon.gov.

Optional APAC Addendum: Using APAC Data to Eliminate Racial Injustice

Requestors may complete this optional section if their project will identify concrete actions to eliminate health inequities stemming from historical and contemporary injustices and the inequitable distribution of resources and power (see Health Equity definition on next page). For projects that inform such solutions, and **do not simply document disparities**, the Director of the **Office of Health Analytics** may, at their discretion, offer one or more of the following incentives:

- Priority processing of requestor's application
- Waiver of fees
- Priority production of data files
- Technical assistance from APAC analysts
- Access to enhanced race and ethnicity data in the future. (Race/ethnicity data in APAC are currently limited because entities that submit administrative data to APAC do not generally include race/ethnicity information.)
- Other provisions that the Director of Health Analytics may find appropriate

Receipt of any of these incentives requires requesters to deliver to the Office of Health Analytics a document fully describing the analytic methods at the conclusion of the relevant analyses, including:

- Commercial off-the-shelf applications used
- Grouping and aggregation methods
- Algorithms and calculations
- Use of code sets that are proprietary to a third party not associated with the project
- Copies of programming code attached in an appendix

The Office of Health Analytics will compile a compendium of analytic methods and make this freely available on the APAC web site. Requestors are also encouraged to submit copies of publications or products using the APAC data for posting on the APAC web site. See below for additional information and application instructions.

Using APAC Data to Eliminate Health Inequities

Problem: Health inequities due to institutional racism and racial injustice

Solution: Develop methods for using APAC data to eliminate institutional racism and racial injustice.

Goal: Eliminate institutional racism and racial injustice, including discrimination based on the intersections of race, ethnicity, language and disability.

Rationale: OHA recognizes that historical and contemporary racial injustice is a root cause of health inequity. APAC and its users, who have subject matter expertise, infrastructure, and staffing sufficient to use the large and complex data files, comprise a community of privilege. As such, APAC has an obligation to use its privilege to confront institutional racism and racial injustice, within OHA specifically and across Oregon. The APAC community has a tremendous wealth of research expertise that could develop novel methods for using APAC data to document racial injustice and identify opportunities to eliminate it.

Instructions: In a separate attachment, describe in detail:

- How requestor's research will help requestor's organization and OHA document racial injustice **and** identify opportunities to eliminate it. Requestor's description must be thorough and as specific as possible and should describe how the research findings will be consistent with OHA's efforts to achieve true Health Equity (see definition, below). **Simply documenting disparities is not sufficient**.
- How requestor's research will be explicitly clear and open about the methods used, widely replicable, and not proprietary to requestor's organization or to a third party. Note that this does not preclude requestor's use of necessary codes sets, such as CPT codes, that are proprietary to a third party and available for license.
- How requestor's organization will freely share the key findings.

A note on intersectional research into inequities based on race, ethnicity, language and disability: Researchers are encouraged to consider an intersectional approach that encompasses language and disability when researching strategies to eliminate racism and racial injustice. However, administrative claims data submitted to APAC generally do not include data on language or disability. APAC includes some race and ethnicity data, but it encompasses less than half of the people in the database. To mitigate these limitations, OHA staff may be able to provide assistance to selected applicants interested in intersectional approaches, as staff resources permit.

Health Equity Definition

Oregon will have established a health system that creates health equity when all people can reach their full health potential and well-being and are not disadvantaged by their race, ethnicity, language, disability, gender, gender identity, sexual orientation, social class, intersections among these communities or identities, or other socially determined circumstances.

Achieving health equity requires the ongoing collaboration of all regions and sectors of the state, including tribal governments to address:

- The equitable distribution or redistributing of resources and power; and
- Recognizing, reconciling and rectifying historical and contemporary injustices.

(Continued)

This appendix is organized as follows:

Questions 1.1 and 1.2

Section 1.0: Request summary

Section 1.1: Study hypotheses

Section 1.2: Regression model

Section 1.3: Defining outcomes

Section 1.4: Data linkages

Section 1.5: Additional notes

Section 1.6: References

Question 5.3

Questions 1.1 and 1.2

Section 1.0: Request summary

The goal of this study is to evaluate access to, and utilization of, school-based health services on child utilization of general health care services (defined in section 1.3) and child health outcomes (defined in section 1.3), including disparities in access to, and utilization of, school-based mental health services over time (the specific hypotheses are explained in section 1.1. Our treatment is a child's exposure to a school-based health center.

The primary study population is drawn from people aged 0-22. The 0-22 age range was chosen because school-based services are utilized by children 6-19 years old, and we would like to observe the outcomes (listed in section 1.3) as well as health history (as defined in section 1.2) for this group for five years before they got exposure to a school-based health center and through age 22, . The sample can be limited to include:

1) Line-level data at the child level for school districts that had a clinic at some point over the sample period. (the sample of interest for the child-level analyses are children in areas that had access to a school-based clinic). We are asking for data on all such children, i.e., both children who used the clinic and children who did not in these specific areas, because observing the characteristics and health outcomes of both sets of children is necessary for making a comparing the effects of exposure to a school

based health center. Defining treatment as exposure to a SBHC as opposed to use of SBHC services is critical to reduce self-selection bias in our study.

2) Line-level data at the child level for every 6th randomly selected child for school districts that never had a clinic over our study period, in counties where at least one school district had a clinic.

3) Any data on children from counties where none of the school districts had a clinic over our study period can be dropped. There are 8/36 counties that never got a SBHC by 2024, and we suggest dropping all children from those 8 counties.

Although most of the SBHCs in Oregon are located in high schools, close to a quarter of SBHCs are located in elementary and middle schools. The overall number of SBHCs in Oregon is rather low at less than 90 (not including a small number of mental-health-only SBHCs). Furthermore, only 56 school districts had at least one SBHC by 2024, and dropping SBHCs in ES and MS will reduce this already small number of treated districts. Therefore, we need to keep middle and elementary school students in our sample.

In addition to the quarter of birth variable for each child, we also need a flag for whether a child's birthday is before or after September 1 (because children in Oregon must be 6 years old by September 1 to start first grade). Having this flag for all children in the sample will tell us whether they likely had access to SBHC services (If a SBHC is located in a high school, but we only observe a child's school district and don't have this flag variable, then for some children it's not clear if they likely have access to the SBHC).

We intend to link the study population and healthcare providers by zip code to several publicly available datasets (listed in section 1.4), a school district crosswalk, and several provider characteristics derived from the APAC claims data such as availability of non school-based health care providers in the school district or county (more detail in section 1.4). All linkages can be done for us by APAC in-house so that zip codes or any other geographic identifiers will not be released to us.

We additionally request APAC to link the study population to the birth certificate data (section 1.4 explains how birth certificate data will be used in our study).

We request 2011-2023 data.

We request select information from claims paid for by any payer other than Medicare. We do not request paid amounts by procedure. We only request that APAC compute for us a single variable summarizing roughly where the child's expenditures are in the state distribution of health care expenditures as explained in section 1.2.

Section 1.1: Background and Study hypotheses

Brief background on school-based health services (SBHS) in Oregon

Expansion in SBHS in Oregon take two forms. Frist, there has been an expansion of school-based health centers (SBHC) which are now available to a larger share of school-age children. Second, a policy adopted in May 2023 allowed school-based health providers to bill Medicaid for all medically necessary services provided to all Medicaid-enrolled students. We discuss each of these changes in turn.

SBHCs have existed in Oregon since 1986, with the number of certified SBHCs reaching 88 in March of 2024, an increase of roughly a third from 55 SBHCs in 2010 (OHA 2024a, OHA 2024b). Oregonian SBHCs provided 129,181 visits for 38,188 clients in the 2022-2023 service year (OHA 2024a). About 95% of the SBHCs had a behavioral health provider on site, and 47,229 out of the 129,181 total visits (~36.6%) were behavioral health visits (OHA 2024a). We will study the effect of the increase in the number of these SBHCs since 2011, the earliest year for which APAC data is available, on student health outcomes and medical spending as described above.

A number of Oregon schools provide access to mental health services even though they do not have a certified SBHC. For example, as of December 2023, 82 schools had OHA-supported school-based mental health providers (though there is some overlap between these schools and the schools with certified SBHCs; OHA, 2023). Since access to mental health services in school-based settings is a key interest of this project, we will include in our study services provided through these schools as well.

Prior to May 2023, school-based health providers could bill Medicaid only for specific services delivered to Medicaid-enrolled students. These services included those mandated by individual student 504 plans in accordance with the Rehabilitation Act of 1973; services included in student Individualized Education Programs (IEPs) in accordance with the Individuals with Disabilities Education Improvement Act of 2004 (IDEA); or services included in the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit. One exception to this limitation was a Medicaid billing pilot project implemented in 2017-2020 in a handful of school districts in Oregon. This project sought to expand the availability of nursing services in schools through increased Medicaid billing for those services (ODE, n.d.). In 2023, the state received approval from the Centers for Medicare and Medicaid Services (CMS) for a State Plan Amendment allowing Oregonian school-based health providers to bill Medicaid for all medically necessary services provided to all Medicaid-enrolled students (Healthy Schools Campaign, 2023). We aim to study the effect of this expansion of Medicaid billing in schools on students. We will identify Medicaid-funded SBHS in the claims data before and after the expansion following the approach described in CMS (2023). In 2019, before Oregonian schools were allowed to bill Medicaid for all medically necessary services provided to all Medicaid-enrolled students, Oregonian school-based providers were already submitting at least 143,226 claims billing Medicaid, with 99% of those claims identified as school-based claims through the place of service code (CMS, 2023). The May 2023 policy change is likely to have greatly increased that number. And since children from minority and lower income backgrounds are disproportionately likely to be covered by Medicaid, this change may have had a greater impact on access to care for these children, as described further below.

Study hypotheses

In the regression models below, we will use “school districts” and “school attendance zones” interchangeably; we would like to conduct our analysis at both of these levels. Our main hypotheses can be summarized as follows:

1. School based health clinics were targeted to high-needs places.

Explanation: Expansion of school-based health services in general and of school-based mental health services in particular in Oregon geographically and over time followed the demand for such services, in other words, school districts with more minority and low-income students and students with chronic health conditions (diabetes, obesity, asthma, and certain mental health conditions as explained in the next section) established such services earlier than other school districts in order to meet the health needs of their students. It is important to see if this is the case, because if so, children in areas with school based health clinics might be less healthy despite having access to these services.

2. There are disparities in the use of SBHCs conditional on having one available.

Explanation: Access to school-based health services is not the same as utilization, and so there may be disparities in the utilization of all or only selected school-based health services by race/ethnicity, immigrant status, other demographic characteristics, and prior health history (see section 1.2 for a complete list of variables and all variable definitions). We will test for the presence of such disparities.

3. Establishment of school-based health services at the school district level improves children's health status in that school district (see section 1.3 on how health outcomes will be defined).

Explanation: This should be the case provided the services provided are of quality comparable to that of health services children might receive in other settings and do not merely substitute for services that would have been received elsewhere (see section 1.3 on how all outcomes are defined).

4. Establishment of school-based health services in a school district raises utilization of health services in all settings (not just the utilization of school-based health services).

Explanation: School-based health services may and often do include providing referrals to out-of-school providers. However, to the extent that SBHC increase the use of preventive services, this could decrease utilization for preventable conditions (see section 1.3 for detail on how utilization of health services is defined as an outcome).

Section 1.2: Regression models

Each hypothesis from section 1.1 corresponds to at least one regression model. Regression models 2-4 rely on almost the same set of control variables, so it makes sense to construct the control variables once and then estimate all the regression models by changing the outcome variable.

Regression model for Hypothesis 1

This regression model tests whether school districts with more disadvantaged student populations established SBHS sooner than other school districts. For this regression model, all individual child data is aggregated to the school district level. Note that this model needs data on all school-age children from 2011 regardless of whether they had a visit for school-based health services.

$$Qrt\_SBHS\_established_{ij} = \alpha + \beta_1*FracMedicaid_{ij} + \beta_2*FracMinority_{ij} + \beta_3*FracDiabetes_{ij} + \beta_4*FracAsthma_{ij} + \beta_5*FracObesity_{ij} + \beta_6*FracPoverty_{ij} + \beta_7*FracParentImmig_{ij} + \beta_8*FracParentHS_{ij} +$$

β_9*Rural$_{ij}$ + β_{10}*FracADHD$_{ij}$ + β_{11}*FracAutismSp$_{ij}$ + β_{12}*FracDep$_{ij}$ + β_{13}*FracConDis$_{ij}$ + β_{14}*FracAnxiety$_{ij}$ + β_{15}*FracAllOtherMH$_{ij}$ + β_{16}*FracLearnDis$_{ij}$ + β_{17}*Frac_MHEDVisit$_{ij}$ + β_{18}*Frac_NMHEDVisit$_{ij}$ + β_{19}*Frac_MHUCCVisit$_{ij}$ + β_{20}*Frac_NMHUCCVisit$_{ij}$ + β_{21}*Frac_MHHosp$_{ij}$ + β_{22}*Frac_NMHHosp$_{ij}$ + β_{23}*FracAntibiotics$_{ij}$ + β_{24}*PPCPper1000$_{ij}$ + β_{25}*PMHPper1000$_{ij}$ + β_{26}*FracPPPMedicaid$_{ij}$ + β_{27}*FracPMHPMedicaid$_{ij}$ + β_{28}*DistrictSize$_{ij}$ + β_{29}*FracIEP$_{ij}$ + β_{30}*FracFreeLunch$_{ij}$ + δ_j + ε_{ij}

Where

Qrt_SBHS_established$_{ij}$ is quarter-year in which school district i located in county j established SBHS ;

Variables controlling for demographic characteristics of the study population (demographically disadvantaged groups might have worse outcomes despite their higher utilization of health services):

FracMedicaid$_{ij}$ is fraction of school-age children on Medicaid in the school district in 2011;

FracMinority$_{ij}$ is fraction of school-age children who are non-white (Black, Hispanic, or any other race / ethnicity other than White) in the school district in 2011 (this information will come from the linked birth certificate data – see section 1.4);

FracPoverty$_{ij}$ is school district poverty level in 2011 (linked at the school district level from an external publicly available dataset – see section 1.4);

FracFreeLunch$_{ij}$ is fraction of students eligible for free or reduced-price lunch in the school district in 2011 (external data – see section 1.4);

FracParentImmig$_{ij}$ is fraction of school-age children with an immigrant parent in the school district in 2011 (this information will come from the linked birth certificate data – see section 1.4);

FracParentHS$_{ij}$ is fraction of school-age children whose mother has no more education than a high school degree in the school district in 2011 (this information will come from the linked birth certificate data – see section 1.4);

FracIEP$_{ij}$ is fraction of school-age children who received any IEP-related services in any setting in the school district in 2011;

Variables controlling for prior health history (again, because individuals with pre-existing conditions might have worse outcomes despite their higher use of health services):

FracDiabetes$_{ij}$ is fraction of school-age children with a diagnosis, procedure, or drug prescription for diabetes in the school district in 2011;

FracAsthma$_{ij}$ is fraction of school-age children with a diagnosis, procedure, or drug prescription for asthma in the school district in 2011;

$FracObesity_{ij}$ is fraction of school-age children with a diagnosis, procedure, or drug prescription for obesity in the school district in 2011;

$FracADHD_{ij}$ is fraction of school-age children with a diagnosis, procedure, or drug prescription for ADHD in the school district in 2011;

$FracAutismSp_{ij}$ is fraction of school-age children with a diagnosis, procedure, or prescription drug for an autism spectrum disorders;

$FracDep_{ij}$ is fraction of school-age children with a diagnosis, procedure, or prescription drug for depression;

$FracConDis_{ij}$ is fraction of school-age children with a diagnosis, procedure, or prescription drug for conduct disorders;

$FracAnxiety_{ij}$ is fraction of school-age children with a diagnosis, procedure, or prescription drug for anxiety or mood disorders;

$FracLearnDis_{ij}$ is fraction of school-age children with a diagnosis, procedure, or drug prescription for any learning disability in the school district in 2011 ;

$FracAllOtherMH_{ij}$ is fraction of school-age children with a diagnosis, procedure, or drug prescription for any mental health condition other than those already included in the regression in the school district in 2011;

$FracAntibiotics_{ij}$ is fraction of school-age children with a drug prescription for antibiotics in the school district in 2011;

$Frac\_MHEDVisit_{ij}$ is fraction of school-age children with at least one mental health related Emergency Department visit in the school district in 2011 (will be computed by APAC;

$Frac\_NMHEDVisit_{ij}$ is fraction of school-age children with at least one non-mental health related Emergency Department visit in the school district in 2011;

$Frac\_MHUCCVisit_{ij}$ is fraction of school-age children with at least one mental health related Urgent Care Center visit in the school district in 2011 (will be computed by APAC);

$Frac\_NMHUCCVisit_{ij}$ is fraction of school-age children with at least one non-mental health related Urgent Care Center visit in the school district in 2011;

$Frac\_MHHosp_{ij}$ is fraction of school-age children with at least one mental health related hospitalization in the school district in 2011;

$Frac\_NMHHosp_{ij}$ is fraction of school-age children with at least one non-mental health related hospitalization in the school district in 2011;

Variables controlling for the characteristics of school districts and counties (because geographic factors like the number of providers accepting Medicaid, etc. can affect access to, and utilization of, health services):

$Rural_{ij}$ is a binary variable equal to 1 if the school district was classified as rural in 2011 and 0 otherwise (this information will come from an external publicly available dataset – see section 1.4);

$PPCPper1000_{ij}$ is the number of pediatric primary care providers per 1000 school-age children in the school district in 2011 ;

$PMHPper1000_{ij}$ is the number of pediatric mental health care providers per 1000 school-age children in the school district in 2011 ;

$FracPPPMedicaid_{ij}$ is fraction of pediatric primary care providers accepting Medicaid in the school district in 2011 ;

$FracPMHPMedicaid_{ij}$ is fraction of pediatric mental health care providers accepting Medicaid in the school district in 2011 ;

$DistrictSize_{ij}$ is school district enrollment in 2011 (will come from a linked external dataset – see section 1.4 for detail);

Other standard variables often included in this type of regression models:

α is a constant;

δ_j is the full set of zero/one county or school district indicators (for example, children from school district A will be assigned the value of 1 for the school district A indicator variable and the value of 0 for all other school district indicator variables; this does not require any school district or county identifiers, this only requires distinguishing school district / county A from school district / county B in some way, such as A, B, C, etc.);

ε_{ij} is the error term.

Standard errors will be clustered at the school district level or county level (again, this does not require any school district or county identifiers, this only requires distinguishing school district / county A from school district / county B in some way, such as A, B, C, etc.).

A variation of this model will be estimated with the following minor changes:

-- dependent variable $Qrt\_SBHS\_established_{ij}$ will be replaced with $Qrt\_SBMHS\_established_{ij}$, where $Qrt\_SBMHS\_established_{ij}$ is quarter-year in which school district i located in county j established school-based mental health services (information on when each school district established SBMHS will be computed by APAC based on when the first visit for SBMHS is recorded in that school district);

-- SBMHS visit variable will be split into a SBHS visit for psychotherapy, immunization, screening, mental health evaluation / behavioral assessment, or counseling and any other SBHS visit;

Regression model for Hypothesis 2

This regression model will test for the presence of certain disparities in the first-time utilization of school-based health services, especially school-based mental health services. This regression will be at the child level and will compare children with a SBHS visit with children from the same school districts who did not have any SBHS visits (so it uses data on children from counties that had at least one school-based health clinic during our study period of 2011-2023, regardless of whether the child had a SBHC visit).

$$SBHS\_visit_{khijt} = \alpha + \beta_1*Black_{kij} + \beta_2*Hispanic_{kij} + \beta_3*OtherMinority_{kij} + \beta_4*Age_{kijt} + \beta_5*ParentImmig_{ij} + \beta_6*ParentHS_{ij} + \beta_7*Medicaid_{kijt} + \beta_8*Diabetes_{kij(T-1)} + \beta_9*Obesity_{kij(T-1)} + \beta_{10}*Asthma_{kij(T-1)} + \beta_{11}*ADHD_{kij(T-1)} + \beta_{12}*AutismSp_{kij(T-1)} + \beta_{13}*Dep_{kij(T-1)} + \beta_{14}*ConDis_{kij(T-1)} + \beta_{15}*Anxiety_{kij(T-1)} + \beta_{16}*AllOtherMH_{kij(T-1)} + \beta_{17}*LearnDis_{kij(T-1)} + \beta_{18}*MH\_EDVisit_{kij(t-4)} + \beta_{19}*NMH\_EDVisit_{kij(t-4)} + \beta_{20}*MH\_UCCVisit_{kij(t-4)} + \beta_{21}*NMH\_UCCVisit_{kij(t-4)} + \beta_{22}*MH\_Hosp_{kij(t-4)} + \beta_{23}*NMH\_Hosp_{kij(t-4)} + \beta_{24}*Antibiotics_{kij(t-4)} + \beta_{25}*IEP_{kij(T-1)} + \beta_{26}*ExpQuant_{kij(t-4)} + \beta_{27}*ExpTop5_{kij(t-4)} + \beta_{28}*SetX_{jit} + \beta_{29}*SetY_{hjit} + \delta_j + \upsilon_t + \kappa_{iT} + \varepsilon_{kijt}$$

Where

$SBHS\_visit_{kijt}$ is a binary variable taking the value of 1 if child k from zip code h school district i county j had their first SBHS visit in quarter-year t and the value of 0 otherwise (note that this variable is meaningful only if the sample includes children without any SBHS visits);

Variables controlling for demographic characteristics of the study population (demographically disadvantaged groups might have worse outcomes despite their higher utilization of health services):

$Black_{kij}$ is a binary variable taking the value of 1 if the child is Black and 0 otherwise;

$Hispanic_{kij}$ is a binary variable taking the value of 1 if the child is Hispanic and 0 otherwise;

$OtherMinority_{kij}$ is a binary variable taking the value of 1 if the child is any race or ethnicity other than White, Black, or Hispanic and 0 otherwise;

Age_{kijt} is child's age;

$ParentImmig_{ij}$ is a binary variable taking the value of 1 if at least one of the child's parents is an immigrant and the value of 0 otherwise;

$ParentHS_{ij}$ is a binary variable taking the value of 1 if the child's mother has no more education than a high school degree and the value of 0 otherwise;

$Medicaid_{kijt}$ is a binary variable taking the value of 1 if the child is on Medicaid and the value of 0 otherwise;

$IEP_{kij(T-1)}$ is a binary variable taking the value of 1 if the child received any services in relation to their IEP at any time up through the quarter-year t-1;

Variables controlling for prior health history (again, because individuals with pre-existing conditions might have worse outcomes despite their higher use of health services):

$Diabetes_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for diabetes) at any time up through the quarter in which they had their first school-based health visit, i.e., quarter-year t-1;

$Obesity_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for obesity at any time up through the quarter-year t-1;

$Asthma_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for asthma at any time up through the quarter-year t-1;

$ADHD_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for ADHD at any time up through the quarter-year t-1;

$AutismSp_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for autism spectrum disorders at any time up through the quarter-year t-1;

$Dep_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for depression at any time up through the quarter-year t-1;

$ConDis_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for conduct disorders at any time up through the quarter-year t-1;

$Anxiety_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for anxiety or mood disorders at any time up through the quarter-year t-1;

$LearnDis_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for any learning disability at any time up through the quarter-year t-1;

$AllOtherMH_{kij(T-1)}$ is a binary variable taking the value of 1 if the child had a diagnosis, procedure, or drug prescription for any other mental health condition not included in the regression at any time up through the quarter-year t-1;

$Antibiotics_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had a drug prescription for antibiotic in the year prior to their first school-based health visit (i.e., in the previous 4 quarters) and the value of 0 otherwise;

$MHEDVisit_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had at least one mental health related Emergency Department visit in the year prior to their first school-based health visit and the value of 0 otherwise.

$NMHEDVisit_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had at least one non-mental health related Emergency Department visit in the year prior to their first school-based health visit and the value of 0 otherwise.

$MHUCCVisit_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had at least one mental health related Urgent Care Center visit in the year prior to their first school-based health visit and the value of 0 otherwise.

$NMHUCCVisit_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had at least one non-mental health related Urgent Care Center visit in the year prior to their first school-based health visit and the value of 0 otherwise.

$MHHosp_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had at least one mental health related hospitalization in the year prior to their first school-based health visit and the value of 0 otherwise.

$NMHHosp_{kij(t-4)}$ is a binary variable taking the value of 1 if the child had at least one non-mental health related hospitalization in the year prior to their first school-based health visit and the value of 0 otherwise.

$ExpQuant_{kij(t-4)}$ is a variable for what quintile the child's medical expenditure falls into one year prior to the child's first school-based health visit, relative to the state distribution for the year;

$ExpTop5_{kij(t-4)}$ is an indicator variable for whether the child's health expenditures were in the top 5% in the year prior to their first SBHC visit;

Variables controlling for the characteristics of school districts and counties (because geographic factors like the number of providers accepting Medicaid, etc. can affect access to, and utilization of, health services):

$SetX_{jit}$ is a vector of time-varying district-level control variables which include

-fraction of school district children eligible for free or reduced-price lunch in year T (external data – see section 1.4 on data linkages);

-number of pediatric primary care providers per 1,000 school-age children in district j in year T;

-number of pediatric mental health care providers per 1,000 school-age children in district j in year T;

-fraction of pediatric primary care providers accepting Medicaid in district j in year T;

-fraction of pediatric mental health care providers accepting Medicaid in district j in year T;

-school district total enrollment (external data – see section 1.4 on data linkages);

-a binary variable equal to 1 if the school district was classified as rural and 0 otherwise (this information will come from an external publicly available dataset – see section 1.4);

$SetY_{hjit}$ is a vector of time-varying zip-code-level control variables (child's zip code of residence) which include percent Black, percent Hispanic, percent foreign born, percent poor, percent with a college degree, and distance to the nearest health clinic (external data – see section 1.4 on data linkages);

Other standard variables often included in this type of regression models:

α is a constant;

δ_j is the full set of school district zero/one indicator variables;

υ_t is quarter-year fixed effects;

κ_{iT} is the full set of county-by-year zero/one indicator variables;

ε_{ij} is the error term.

Note: Variables such as $ADHD_{kij(T-1)}$ and $Obesity_{kij(T-1)}$ are fixed at their level prior to the child's first SBHS or SBMHs visit because utilization of SBHS/SBMHS might raise the probability that a child will be diagnosed with and/or treated for those conditions at the first or subsequent visits.

Standard errors will be clustered at the school district level.

A variation of this model will also be estimated with the following minor changes:

-- dependent variable $SBHS\_visit_{kijt}$ will be replaced with $SBMHS\_visit_{kijt}$, where the latter is a binary variable taking the value of 1 if child k from school district i county j had a school-based any *mental health* visit in quarter-year t and the value of 0 otherwise;

– the SBHS visit variable will further be split into a SBHS visit for psychotherapy, immunization, screening, mental health evaluation / behavioral assessment, or counseling and any other SBHS visit.

Regression model for Hypothesis 3

This regression is at the child level (only for children from counties that had at least one school-based health clinic during our study period of 2011-2023, regardless of whether the child had a SBHC visit).

$$Health\_Outcome_{khijt} = \alpha + \beta_1*SBHS_{ijt} + \beta_2*Black_{kij} + \beta_3*Hispanic_{kij} + \beta_4*OtherMinority_{kij} + \beta_5*Age_{kijt} + \beta_6*ParentImmig_{ij} + \beta_7*ParentHS_{ij} + \beta_8*Medicaid_{kijt} + \beta_9*Diabetes_{kij(T-1)} + \beta_{10}*Obesity_{kij(T-1)} + \beta_{11}*Asthma_{kij(T-1)} + \beta_{12}*ADHD_{kij(T-1)} + \beta_{13}*AutismSp_{kij(T-1)} + \beta_{14}*Dep_{kij(T-1)} + \beta_{15}*ConDis_{kij(T-1)} + \beta_{16}*Anxiety_{kij(T-1)} + \beta_{17}*LearnDis_{kij(T-1)} + \beta_{18}*AllOtherMH_{kij(T-1)} + \beta_{19}*MH\_EDVisit_{kij(t-4)} +$$

β_{20}*NMH_EDVisit$_{kij(t-4)}$ + β_{21}*MH_UCCVisit$_{kij(t-4)}$ + β_{22}*NMH_UCCVisit$_{kij(t-4)}$ + β_{23}*MH_Hosp$_{kij(t-4)}$ + β_{24}*NMH_Hosp$_{kij(t-4)}$ + β_{25}*Antibiotics$_{kij(t-4)}$ + β_{26}*IEP$_{kij(T-1)}$ + β_{27}*ExpQuant$_{kij(t-4)}$ + β_{28}*ExpTop5$_{kij(t-4)}$ + β_{29}*SetX$_{jit}$ + β_{30}*SetY$_{hjit}$ + δ_j + υ_t+ κ_{iT} +ε_{kijt}

Where

Health_Outcome$_{kijt}$ is a health outcome for child k from zip code h school district j county i in quarter-year t; see section 1.3 for the definition of all health outcomes.

SBHS$_{ijt}$ is a binary variable taking the value of 1 if school district j from county i had SBHS in quarter-year t and 0 otherwise;

All other variables are defined similarly to the variables in Hypothesis 2, except that health history variables such as Asthma$_{kij(T-1)}$ are defined relative to when SBHS/SBMHS first became available in the child's school district (not relative to the child's first SBHS/SBMHS visit).

A variation of this model will also be estimated with the following changes:

--variable SBHS$_{ijt}$ will be replaced with SBMHS$_{ijt}$ (a binary variable taking the value of 1 if school district j from county i had SBMHS in quarter-year t and 0 otherwise);

-- the SBMHS variable will be split into psychotherapy services, mental health evaluation / behavioral assessment services, and any other SBMHS.

-- variables SBHS$_{ijt}$ and SBMHS$_{ijt}$ will be replaced with Years_SBHS$_{khijt}$ and Years_SBMHS$_{khijt}$ respectively, where Years_SBHS$_{khijt}$ is the number of years child k from zip code h school district j county i year t was exposed to school-based health services in their school district and where Years_SBMHS$_{khijt}$ is the number of years child k from zip code h school district j county i year t was exposed to school-based mental health services in their school district.

Regression model for Hypothesis 4

This regression is at the child level (only for children from counties that had at least one school-based health clinic during our study period of 2011-2023, regardless of whether the child had a SBHC visit).

Utilization_Outcome$_{khijt}$ = α + β_1*SBHS$_{ijt}$ + β_2*Black$_{kij}$ + β_3*Hispanic$_{kij}$ + β_4*OtherMinority$_{kij}$ + β_5*Age$_{kijt}$ + β_6*ParentImmig$_{ij}$ + β_7*ParentHS$_{ij}$ + β_8*Medicaid$_{kijt}$ + β_9*Diabetes$_{kij(T-1)}$ + β_{10}*Obesity$_{kij(T-1)}$ + β_{11}*Asthma$_{kij(T-1)}$ + β_{12}*ADHD$_{kij(T-1)}$ + β_{13}*AutismSp$_{kij(T-1)}$ + β_{14}*Dep$_{kij(T-1)}$ + β_{15}*ConDis$_{kij(T-1)}$ + β_{16}*Anxiety$_{kij(T-1)}$ + β_{17}*LearnDis$_{kij(T-1)}$ + β_{18}*AllOtherMH$_{kij(T-1)}$ + β_{19}*MH_EDVisit$_{kij(t-4)}$ + β_{20}*NMH_EDVisit$_{kij(t-4)}$ + β_{21}*MH_UCCVisit$_{kij(t-4)}$ + β_{22}*NMH_UCCVisit$_{kij(t-4)}$ + β_{23}*MH_Hosp$_{kij(t-4)}$ + β_{24}*NMH_Hosp$_{kij(t-4)}$ + β_{25}*Antibiotics$_{kij(t-4)}$ + β_{26}*IEP$_{kij(T-1)}$ + β_{27}*ExpQuant$_{kij(t-4)}$ + β_{28}*ExpTop5$_{kij(t-4)}$ + β_{29}*SetX$_{jit}$ + β_{30}*SetY$_{hjit}$ + δ_j + υ_t+ κ_{iT} +ε_{kijt}

Where

Utilization_Outcome$_{kijt}$ is a utilization outcome for child k from zip code h school district j county i in quarter-year t; see section 1.3 for the definition of all utilization outcomes.

All other variables are defined similarly to the variables in Hypothesis 2, except that health history variables such as Asthma$_{kij(T-1)}$ are defined relative to when SBHS/SBMHS first became available in the child's school district (not relative to the child's first SBHS/SBMHS visit).

A variation of this model will also be estimated with the following changes:

> --variable SBHS$_{ijt}$ will be replaced with SBMHS$_{ijt}$ (a binary variable taking the value of 1 if school district j from county i had SBMHS in quarter-year t and 0 otherwise);
>
> -- the SBMHS variable will be split into psychotherapy services, mental health evaluation / behavioral assessment services, and any other SBMHS.
>
> -- variables SBHS$_{ijt}$ and SBMHS$_{ijt}$ will be replaced with Years_SBHS$_{khijt}$ and Years_SBMHS$_{khijt}$ respectively, where Years_SBHS$_{khijt}$ is the number of years child k from zip code h school district j county i year t was exposed to school-based health services in their school district and where Years_SBMHS$_{khijt}$ is the number of years child k from zip code h school district j county i year t was exposed to school-based mental health services in their school district.

Section 1.3: Defining outcomes

All outcome variables are at the child level and will be constructed from line-level claim data using researcher-provided lists of procedure and diagnosis codes and NDCs.

> *Health outcomes for Hypothesis 3*

-NMHHosp$_{kij(t+4)}$ is a binary variable taking the value of 1 if the child had any non-mental health related hospitalization *in the year after SBHS became available in their school district*;

-NMHHosp$_{kij(t+8)}$ is a binary variable taking the value of 1 if the child had any non-mental health related hospitalization *2 years after after SBHS became available in their school distri*ct;

-NMHHosp$_{kij(t+12)}$ is a binary variable taking the value of 1 if the child had any non-mental health related hospitalization *3 years after after SBHS became available in their school distri*ct;

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-MHHosp$_{kij(t+4)}$ is a binary variable taking the value of 1 if the child had any mental health related hospitalization *in the year after SBHS became available in their school district*;

-MHHosp$_{kij(t+8)}$ is a binary variable taking the value of 1 if the child had any mental health related hospitalization *2 years after after SBHS became available in their school district*;

-$MHHosp_{kij(t+12)}$ is a binary variable taking the value of 1 if the child had <u>any mental health</u> related hospitalization *3 years after after SBHS became available in their school district*;

***

-$NumNMHHosp_{kij(t+4)}$ is the number of <u>non-mental health</u> related hospitalizations a child had *in the year after SBHS became available in their school district;*

-$NumNMHHosp_{kij(t+8)}$ is the number of <u>non-mental health</u> related hospitalizations a child had *2 years after SBHS became available in their school district;*

-$NumNMHHosp_{kij(t+12)}$ is the number of <u>non-mental health</u> related hospitalizations a child had *3 years after SBHS became available in their school district;*

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-$NumMHHosp_{kij(t+4)}$ is the number of <u>mental health</u> related hospitalizations a child had *in the year after SBHS became available in their school district;*

-$NumMHHosp_{kij(t+8)}$ is the number of <u>mental health</u> related hospitalizations a child had *2 years after SBHS became available in their school district;*

-$NumMHHosp_{kij(t+12)}$ is the number of <u>mental health</u> related hospitalizations a child had *3 years after SBHS became available in their school district;*

***

-$MH\_EDVisit_{kij(t+4)}$ is a binary variable taking the value of 1 if the child had a <u>mental health</u> related ED visit *in the year after SBHS became available in their school district*;

-$MH\_EDVisit_{kij(t+8)}$ is a binary variable taking the value of 1 if the child had a <u>mental health</u> related ED visit *2 years after SBHS became available in their school district*;

-$MH\_EDVisit_{kij(t+12)}$ is a binary variable taking the value of 1 if the child had a <u>mental health</u> related ED visit *3 years after SBHS became available in their school district*;

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-$NMH\_EDVisit_{kij(t+4)}$ is a binary variable taking the value of 1 if the child had a <u>non-mental health</u> related ED visit *in the year after SBHS became available in their school district;*

-$NMH\_EDVisit_{kij(t+8)}$ is a binary variable taking the value of 1 if the child had a <u>non-mental health</u> related ED visit *2 years after SBHS became available in their school district;*

-$NMH\_EDVisit_{kij(t+12)}$ is a binary variable taking the value of 1 if the child had a <u>non-mental health</u> related ED visit *3 years after SBHS became available in their school district;*

***

-NumMH_EDVisit$_{kij(t+4)}$ is the number of mental health related ED visits *in the year after SBHS became available in their school district*;

-NumMH_EDVisit$_{kij(t+8)}$ is the number of mental health related ED visits *2 years after SBHS became available in their school district*;

-NumMH_EDVisit$_{kij(t+12)}$ is the number of mental health related ED visits *3 years after SBHS became available in their school district*;

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-NumNMH_EDVisit$_{kij(t+4)}$ is the number of non-mental health related ED visits *in the year after SBHS became available in their school district;*

-NumNMH_EDVisit$_{kij(t+8)}$ is the number of non-mental health related ED visits *2 years after SBHS became available in their school district;*

-NumNMH_EDVisit$_{kij(t+12)}$ is the number of non-mental health related ED visits *3 years after SBHS became available in their school district;*

***

-MH_UCCVisit$_{kij(t+4)}$ is a binary variable taking the value of 1 if the child had a mental health related UCC visit *in the year after SBHS became available in their school district*;

-MH_UCCVisit$_{kij(t+8)}$ is a binary variable taking the value of 1 if the child had a mental health related UCC visit *2 years after SBHS became available in their school district*;

-MH_UCCVisit$_{kij(t+12)}$ is a binary variable taking the value of 1 if the child had a mental health related UCC visit *3 years after SBHS became available in their school district*;

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-NMH_UCCVisit$_{kij(t+4)}$ is a binary variable taking the value of 1 if the child had a non-mental health related UCC visit *in the year after SBHS became available in their school district*;

-NMH_UCCVisit$_{kij(t+8)}$ is a binary variable taking the value of 1 if the child had a non-mental health related UCC visit *2 years after SBHS became available in their school district*;

-NMH_UCCVisit$_{kij(t+12)}$ is a binary variable taking the value of 1 if the child had a non-mental health related UCC visit *3 years after SBHS became available in their school district*;

***

-NumMH_UCCVisit$_{kij(t+4)}$ is the number of mental health related UCC visits *in the year after SBHS became available in their school district*;

-NumMH_UCCVisit$_{kij(t+8)}$ is the number of mental health related UCC visits *2 years after SBHS became available in their school district*;

-NumMH_UCCVisit$_{kij(t+12)}$ is the number of mental health related UCC visits *3 years after SBHS became available in their school district*;

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-NumNMH_UCCVisit$_{kij(t+4)}$ is the number of non-mental health related UCC visits *in the year after SBHS became available in their school district*;

-NumNMH_UCCVisit$_{kij(t+8)}$ is the number of non-mental health related UCC visits *2 years after SBHS became available in their school district*;

-NumNMH_UCCVisit$_{kij(t+12)}$ is the number of non-mental health related UCC visits *3 years after SBHS became available in their school district*;

Utilization outcomes for Hypothesis 4

Preventive care utilization variables:

-Immun$_{kij(t+4)}$ is the number of immunizations the child received **separately in school and in all other settings** *in the year after SBHS became available in their school district*;

-Immun$_{kij(t+8)}$ is the number of immunizations the child received **separately in school and in all other settings** *2 years after SBHS became available in their school district*;

-Immun$_{kij(t+12)}$ is the number of immunizations the child received **separately in school and in all other settings** *3 years after SBHS became available in their school district*;

-MHeval$_{kij(t+4)}$ is a binary variable equal to 1 if the child received a mental health evaluation or behavioral assessment **separately in school and in all other settings** *in the year after SBHS became available in their school district* ;

-MHeval$_{kij(t+8)}$ is a binary variable equal to 1 if the child received a mental health evaluation or behavioral assessment **separately in school and in all other settings** *2 years after SBHS became available in their school district;*

-MHeval$_{kij(t+12)}$ is a binary variable equal to 1 if the child received a mental health evaluation or behavioral assessment **separately in school and in all other settings** *3 years after SBHS became available in their school district;*

-Screen$_{kij(t+4)}$ is the number of screenings the child received **separately in school and in all other settings** *in the year after SBHS became available in their school district*;

-$Screen_{kij(t+8)}$ is the number of screenings the child received **separately in school and in all other settings** *2 years after SBHS became available in their school district*;

-$Screen_{kij(t+12)}$ is the number of screenings the child received **separately in school and in all other settings** *3 years after SBHS became available in their school district*;

-$Counsel_{kij(t+4)}$ is the number of counseling sessions the child received **separately in school and in all other settings** *in the year after SBHS became available in their school district*;

-$Counsel_{kij(t+8)}$ is the number of counseling sessions the child received **separately in school and in all other settings** *2 years after SBHS became available in their school district*;

-$Counsel_{kij(t+12)}$ is the number of counseling sessions the child received **separately in school and in all other settings** *3 years after SBHS became available in their school district*;

-$Supplements_{kij(t+4)}$ is a binary variable taking the value of 1 if the child filled at least one new prescription for vitamins or supplements *in the year after SBMHS became available in their school district*;

-$Supplements_{kij(t+8)}$ is a binary variable taking the value of 1 if the child filled at least one new prescription for vitamins or supplements *2 years after SBMHS became available in their school district;*

-$Supplements_{kij(t+12)}$ is a binary variable taking the value of 1 if the child filled at least one new prescription for vitamins or supplements *3 years after SBMHS became available in their school district;*

Treatment utilization outcomes:

-$Antibiotics_{kij(t+4)}$ is a binary variable taking the value of 1 if the child filled a drug prescription for antibiotics *in the year after SBHS became available in their school district*;

-$Antibiotics_{kij(t+8)}$ is a binary variable taking the value of 1 if the child filled a drug prescription for antibiotics *2 years after SBHS became available in their school district*;

-$Antibiotics_{kij(t+12)}$ is a binary variable taking the value of 1 if the child filled a drug prescription for antibiotics *3 years after SBHS became available in their school district*;

-$MHPsych_{kij(t+4)}$ is a binary variable taking the value of 1 if the child received at least one psychotherapy session **separately in school and in all other settings** *in the year after SBHS became available in their school district*;

-$MHPsych_{kij(t+8)}$ is a binary variable taking the value of 1 if the child received at least one psychotherapy session **separately in school and in all other settings** *2 years after SBHS became available in their school district*;

-$MHPsych_{kij(t+12)}$ is a binary variable taking the value of 1 if the child received at least one psychotherapy session **separately in school and in all other settings** *3 years after SBHS became available in their school district*;

-NumMHPsych$_{kij(t+4)}$ is the number of hours of psychotherapy received **separately in school and in all other settings** *in the year after SBHS became available in their school district* (there are separate CPT procedure codes for a psychotherapy session that lasts 30 minutes, 45 minutes, 60 minutes, etc.);

-NumMHPsych$_{kij(t+8)}$ is the number of hours of psychotherapy received **separately in school and in all other settings** *2years after SBHS became available in their school district*;

-NumMHPsych$_{kij(t+12)}$ is the number of hours of psychotherapy received **separately in school and in all other settings** *in 3 years after SBHS became available in their school district*;

-MHDrug$_{kij(t+4)}$ is a binary variable taking the value of 1 if the child filled at least one new prescription for a mental health drug *in the year after SBMHS became available in their school district*;

-MHDrug$_{kij(t+8)}$ is a binary variable taking the value of 1 if the child filled at least one new prescription for a mental health drug *2 years after SBMHS became available in their school district*;

-MHDrug$_{kij(t+12)}$ is a binary variable taking the value of 1 if the child filled at least one new prescription for a mental health drug *3 years after SBMHS became available in their school district*;

Section 1.4: Data linkages

Linking birth certificate data at the child level

We need information on child race and ethnicity for the demographic variables included in our regression models (see section 1.2). Our understanding is that this data is missing from APAC files for some people, and that it may also be missing from birth certificates for children born outside the state. Hence, combining information from APAC with that from birth certificate data would provide the best coverage for this important piece of information. Additionally, we need information on parental level of educational attainment and immigrant status (whether at least one parent was born abroad and whether at least one parent speaks a language other than English at home) from the birth certificate data for the parental control variables included in our regression models (see section 1.2). We understand that this information will not be available for children born out-of-state.

We would like APAC to link these data in-house. After receiving notice of approval for APAC data, we will apply to the Center for Health Statistics for vital records data, so that APAC can release the linked data for our project.

Linking external data at the zip code and school district level

Crosswalk between children's zip codes of residence and school districts / school attendance zones will be linked at the zip code level and will come from the National Center for Education Statistics (NCES) or similar sources.

Variables on whether each school district is rural or urban, school district poverty level, school district enrollment size, and fraction of students eligible for free or reduced-price lunch will be linked at the school district level and will come from the National Center for Education Statistics (NCES).

Zip-code-level control variables, such as percent Black, percent Hispanic, percent foreign born, percent poor, percent with a college degree, and distance to the nearest health clinic,will all come from the publicly available CDC's Social Determinants of Health (SDOH) database.

We would like APAC to link these data in-house.

Linking external data at the facility /provider level

Each identified school-based health facility will be linked with external information on when the facility opened / became operational which will allow APAC to construct a variable for us on the number of years each child was exposed to the school-based services in their school district (the researchers will provide this external data on school-based health facilities in Oregon that they have assembled from publicly available sources).

We would like APAC to link these data in-house.

Section 1.5: Additional notes

All results will be in the form of sample summary statistics or regression coefficients and standard errors. In the summary statistics, any cells with 25 observations or fewer will be suppressed.

Note that although we propose that APAC do the data linkages for us, we do need encoded school attendance zones, school districts and counties (such as district 1, district 2, etc.) so that we can include school-attendance-zone, school-district, and county fixed effects and cluster standard errors in our regression models.

School-based services in Oregon will be identified in three ways: 1) through place-of-service codes (usually reported in the Medicaid claims data in the Other Services file in the variables POS_CD and SRVC_PLC_CD); and 2) through provider names and / or street addresses (the researchers will provide a list of provider names and street addresses); 3) through provider NPIs (the researchers will provide a list of provider NPIs associated with school clinics).

One additional piece of information we will need is the fraction of school-age children (overall; by Black, White, Hispanic, Other; and by Medicaid, private insurance, other insurance) who received school-based health services overall in the state and by county, by procedure and diagnosis code group. All procedure and diagnosis codes will be grouped. Any cells with fewer than 25 children will be suppressed. This information is needed for introductory descriptive analysis to help the academic audience understand the degree of availability of school-based health services in Oregon.

Section 1.6: References

Hoffmann JA, Alegría M, Alvarez K, Anosike A, Shah PP, Simon KM, Lee LK. (2022). Disparities in Pediatric Mental and Behavioral Health Conditions. Pediatrics 150(4):e2022058227. doi: 10.1542/peds.2022-058227.

Love, H.E., Schlitt, J., Soleimanpour, S., Panchal, N., & Behr, C. (2019). Twenty Years Of School-Based Health Care Growth And Expansion. Health Affairs 38(5). https://doi.org/10.1377/hlthaff.2018.05472

Oregon Health Authority [OHA]. (2024a). School-Based Health Centers: 2024 Status Update. https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le-101754.pdf

Oregon Health Authority [OHA]. (2024b). Oregon School-Based Health Centers 2024. https://www.oregon.gov/oha/PH/HEALTHYPEOPLEFAMILIES/YOUTH/HEALTHSCHOOL/SCHOOLBASEDHEALTHCENTERS/Documents/SBHC%20Certification/SBHC%20Map_March%202024.pdf

Oregon Health Authority [OHA]. (2023). OHA Supported School-Based Mental Health 2023-2024. https://www.oregon.gov/oha/HSD/BH-Child-Family/Documents/SBMH-Map.pdf

Healthy Schools Campaign. (2023). School Medicaid Expansion: How (and How Many) States Have Taken Action to Increase School Health Access and Funding. https://healthystudentspromisingfutures.org/wp-content/uploads/2023/10/Status-of-School-Medicaid-Expansion_-How-and-How-Many-States-Have-Taken-Action-to-Increase-School-Health-Access-and-Funding.pdf

CMS (2023). Identifying School-Based Services in TAF. TAF Research Brief #3061.

Oregon Department of Education [ODE]. (n.d.). SB 111 School Medicaid Pilot Project (2017-2020). https://www.oregon.gov/ode/students-and-family/healthsafety/pages/sb-111-school-medicaid-pilot-project-(2017-2020).aspx

Question 5.3

We intend to manage security of the APAC data by storing and accessing the APAC data on the Citadel servers only.

Citadel is Princeton University's Secure Research Infrastructure environment, which is intended to house and process NIST 800-171 (CUI), NIST 800-53 (FISMA), **HIPAA**, and other extremely sensitive data loads. Citadel allows researchers to securely analyze and store data, in a user-friendly system, while preventing unauthorized access, change, and distribution of data, enabling alignment with NIST SP 800-171, NIST SP 800-53, **HIPAA regulations**, and standard Data Use Agreements (DUA) requirements.

Citadel can be used to prevent unauthorized access, change, and distribution of sensitive data such as Controlled Unclassified Information (CUI), ePHI data, Intellectual Property (IP), and Export-Controlled Data (ERA). Sensitive data is fully encrypted with user-owned public/private keys and is not accessible by system administrators. Only those with explicit access have the keys to decrypt the data.

Key Features

- Data export control
- Streamlined, secure deployment
- Hosts NIST SP 800-171, NIST SP 800-53, HIPAA, and other extremely sensitive data.
- Available on-demand, with minimal maintenance
- Supports collaboration both within and outside of the University
- Post-quantum cryptography ready

Citadel is designed to act as a secure workstation for data storage and computations. Researchers can:

- Securely store restricted data sets such as Controlled Unclassified Information (CUI), Intellectual Property (IP), Personal Health Information (PHI), or Export Controlled Data (EAR).
- Perform work on stored data sets with familiar software tools running on virtual machines securely located at the HPC RC data center.
- Securely work on their data sets using various devices - desktops or laptops.
- Collaborate with other researchers on the same data sets inside and outside of Princeton University.

Racial Justice Addendum

Although nationally school-based health centers tend to locate in places with a higher fraction of racial and ethnic minority students (Love et al., 2019), access to services does not necessarily imply their utilization. Locke et al. (2017) find that Hispanic children with psychiatric disorders used school-based health services significantly less often than White children with psychiatric disorders. They also find that Black children with ADHD used school-based health services significantly less than White children with ADHD. Therefore, besides documenting how access to school-based health services in Oregon varies by race and ethnicity, we will ask how utilization of these services varies by racial and ethnic minority status as well as with attributes such as parental education and foreign birth. After documenting the racial and ethnic gaps in both access and utilization of school-based services, we will study the possible reasons for these gaps and how they can be reduced.

Specifically, we will start by identifying school districts with no or very small racial/ethnic gaps in service access and utilization and study their characteristics, such as the types of mental health services provided and the characteristics of their student populations. We will also identify school districts with large gaps and examine the services provided and student populations in these school districts, in order to understand the drivers of gaps in utilization and how they can be eliminated.

One important factor is whether a center provides services on site, or whether it refers to off-site providers. If racial/ethnic minority students are less likely to utilize services when they are referred off campus, but equally likely to utilize services provided in a school setting, then this implies that providing more services on site could reduce disparities in access to school-based health services.

A second important factor may be differences in the utilization of telehealth, especially in more rural districts where transportation costs and shortages of providers may be greater problems. Telehealth could also be used to facilitate access to services that are culturally appropriate. Our work will help to shed light on the extent to which greater reliance on telehealth in school-based settings could reduce racial and other gaps in service utilization.

Third, we will study whether expanding Medicaid billing for school-based health services to include all Medicaid-enrolled students is a promising strategy for reducing the racial/ethnic gaps in the access to, and utilization of, mental health services. One reason why expanding Medicaid billing in schools might reduce racial/ethnic gaps is that some racial/ethnic minority students in need of mental health services might be less likely to have a formal IEP than White students with similar conditions. Such a disparity would make them less likely to receive school-based services when those services are restricted to (and are Medicaid reimbursable only for) students with a formal IEP. A study by Zuckerman et al. (2014) points out that “Latino children are diagnosed with an ASD [Autism Spectrum Disorder] 2.5 years later than white non-Latino children, and are more often missed in diagnosis despite meeting ASD diagnostic criteria”. If Latino children are less likely to be diagnosed with conditions that make it more likely that they will receive a formal IEP, then restricting school-based health services to only students with IEP increases existing structural disparities in the access to mental health services in school-based settings,

and expanding Medicaid billing in schools to cover all Medicaid-enrolled students should reduce those disparities. In our study, we will empirically test whether expanding Medicaid billing in Oregonian schools to all Medicaid-enrolled students has reduced the racial/ethnic gap in mental health services access and utilization.

Regression analysis will be used to study the racial / ethnic gap in the access to, and utilization of, school-based health services; only summary statistics based on the aggregated data and regression coefficients and standard errors will be reported in the results, so that no individual school or school district will be identifiable. The study will be submitted for peer review and publication in an academic journal. We will pay for open access so that the study results will be available without charge. We will also disseminate our results through social media and vehicles such as the NBER Working Paper series which receive wide attention. In order to enhance the replicability and transparency of our findings we will make all of our code publicly available.

References:

Locke J, Kang-Yi CD, Pellecchia M, Marcus S, Hadley T, Mandell DS. (2017). Ethnic Disparities in School-Based Behavioral Health Service Use for Children With Psychiatric Disorders. J Sch Health 87(1):47-54. doi: 10.1111/josh.12469. PMID: 27917490; PMCID: PMC5142755.

Love, H.E., Schlitt, J., Soleimanpour, S., Panchal, N., & Behr, C. (2019). Twenty Years Of School-Based Health Care Growth And Expansion. Health Affairs 38(5). https://doi.org/10.1377/hlthaff.2018.05472

Zuckerman KE, Sinche B, Cobian M, Cervantes M, Mejia A, Becker T, Nicolaidis C. (2014). Conceptualization of autism in the Latino community and its relationship with early diagnosis. J Dev Behav Pediatr. 35(8):522-32. doi: 10.1097/DBP.0000000000000091. PMID: 25186120; PMCID: PMC4180801.

Placeholder for Data Security Plan

PRINCETON UNIVERSITY

Updated By: Janet Marion Currie @ 26-Jul-2024 08:10:54 PM

1 Instructions

Please read all of the following instructions and complete each step carefully.

1. Complete all required questions in this form. A detailed instruction guide is available here. It is recommended that you save your work often (using the **Save** button at the bottom of each section or at the top of the form).

2. Attach all related documents such as advertisements, assent forms/scripts, surveys, consent forms/scripts, interview guides, questionnaires and evidence of training in **Section 14. Supporting Documents** section of this form.

3. Click the **CHECK FOR ERRORS** checkbox to validate all mandatory questions have been answered. Clicking **CHECK FOR ERRORS** saves the form and verifies all mandatory responses are present. If a message appears indicating mandatory questions have not been completed, then provide responses as indicated. Repeat this step until the **Form Locked, Unlock to Edit** message appears.

4. Click the **CLOSE** button to close this form and return to the home screen.

5. **TO SUBMIT AN APPLICATION TO YOUR PI OR THE IRB FOR THE FIRST TIME** click the **SUBMIT** button (located at the top center of the form). Wait for the system to complete the operation. Once your application is submitted the form window will disappear.

6. **TO SUBMIT THE SAME APPLICATION TO YOUR PI OR THE IRB AFTER THE INITIAL SUBMISSION,** use the **NEXT STEP DECISION** dropdown that appears in the **ASSIGNMENTS** area of the e-form and use the **I AM DONE** button. Once your application is submitted the form window will disappear.

Icon Legend:

* Required field	Upload a file
Delete an entry	Remove a value or file
Edit or choose a value	View an uploaded file

2 General Information

Protocol Number 17064

Submission Number 17064-01

Revise the default Study Title (2.1 below) NOW to reflect the study purpose - it may not be amended after submission.

* **(2.1) Study Title:**
An Examination of Select Policies with Potential to Reduce Disparities in Children's and Women's Health in Oregon

* **(2.2) Is this study being funded by any of the U.S. Department of Health and Human Services (DHHS) agencies listed here**

☐ Yes ☑ No

* **(2.3) Select your study sponsor using the icons below:**

First click the Add Sponsor link below. Then click the pencil icon to select your funder. Repeat as necessary if you have more than one funder. NOTE: If your study is internally funded by Princeton University, please choose "Princeton University" or "Internal" (either choice is fine).

* Sponsor	Internal

* **(2.4) Type of Research:**

- ☐ Junior Project
- ☐ Senior Thesis
- ☐ Graduate Research
- ☑ Postdoctoral Research
- ☐ Faculty Research
- ☐ Other

Please note, per the University Research Board, undergraduate students, graduate students, and postdocs CANNOT serve as the PI for an IRB submission.

Please refer to the University Research Board PI-eligibility chart.

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

3 Research Personnel

Add Personnel

Name
Currie, Janet Marion

☑ Principal Investigator (PI)
The PI is the person who is ultimately responsible for the conduct of the study. For student-initiated research, the PI is typically the student's faculty advisor. However, the PI does not have to be your faculty advisor. For the eligibility criteria to serve as a PI at Princeton University, please see this document.

Role in Research:

IRB Compliance Training
*This information is automatically populated based on data received from the CITI Program. To allow the data to auto populate, you must affiliate yourself with Princeton in the CITI Program and **use your Princeton email address in CITI.***

Certification	Begin	End
NIH - NIH IRB Training	03-Jun-2010	
IRB - Social & Behavioral Research Investigators	29-May-2017	
CITI - IRB - Social & Behavioral Research Investigators	29-May-2017	
IRB - Social & Behavioral Research Investigators	16-Mar-2021	
CITI - IRB - Social & Behavioral Research Investigators	08-Oct-2013	

Name
Malinovskaya, Anna Olegovna

☐ Principal Investigator (PI)
The PI is the person who is ultimately responsible for the conduct of the study. For student-initiated research, the PI is typically the student's faculty advisor. However, the PI does not have to be your faculty advisor. For the eligibility criteria to serve as a PI at Princeton University, please see this document.

Role in Research: Researcher - Primary Contact for IRB communications

Requested Researcher End Date

IRB Compliance Training
*This information is automatically populated based on data received from the CITI Program. To allow the data to auto populate, you must affiliate yourself with Princeton in the CITI Program and **use your***

Princeton email address in CITI.

Certification	Begin	End
IRB - Social & Behavioral Research Investigators	23-Jul-2024	

4 Non-Princeton Personnel

Please list all individuals from non-Princeton institutions who will be working with you on this research project (i.e., investigators from Penn, Columbia, Harvard, etc.). IRB training for unaffiliated research personnel is not required. However, you must explain how each is qualified to perform the procedures and duties assigned to them during the study.

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

5 Study Design

The IRB asks the following questions because it must confirm that the study meets certain criteria for approval found in the federal regulations. If you are interested in learning more about these criteria, please visit this page.

Objectives

* **(5.1) Describe the purpose of your research project such that members of the IRB who have expertise in areas other than yours can understand the proposed research. Include a description of the background and rationale for the study, explain the research design, research methodology, hypotheses and goal(s).**
Please see the attached project description.

Research Components

The research involves the following components (check all that apply):

* **(5.2) Use of Zoom, Go-To-Meeting, or other virtual environment to conduct interviews or other interactions:**
☐ Yes ☑ No

* **(5.3) Questionnaires/Surveys/Interview Guide/Topics of Conversation:**
☐ Yes ☑ No

* **(5.4) Ethnographic/Field Research/Participant Observation/Embedding in the field:**

For the purposes of this form, "ethnography" means a study in which the investigator will be immersed or embedded in specific social settings.
☐ Yes ☑ No

* **(5.13) Analysis of tissues or specimens:**
☐ Yes ☑ No

(5.14) Recordings (check all that apply and revise the consent form accordingly):

* **(5.14.1) Audio**
☐ Yes ☑ No

* **(5.14.2) Video**
☐ Yes ☑ No

* **(5.14.3) Photography**
☐ Yes ☑ No

* **(5.15) Data Analysis Only** (the research is solely limited to data analysis- no interaction or intervention with the subjects):
☑ Yes ☐ No

* **(5.16) Clinical Trials:**

A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes. This definition encompasses phase 1 trials of FDA regulated drug and biological products, small feasibility studies of FDA-regulated device products, and studies of any intervention not regulated by the FDA, e.g., behavioral interventions. If your study is NIH-funded, the PI is encouraged to contact the NIH Program Official (scientific contact for the study) who will determine whether the study meets NIH's definition of a clinical trial.

☐ Yes ☑ No

* **(5.17) Hazardous Agents:**

Does this protocol involve the use of radiation, chemical, or biological agents (including recombinant DNA or BSL2)?

☐ Yes ☑ No

* **(5.21) Vertebrate Animal Use:**

Does this study involve the use of vertebrate animals (including field or wildlife studies)?

☐ Yes ☑ No

Study Procedures

* **(5.22) Describe in detail the procedures that will be used to achieve the objectives of the research project:**

The project will analyze secondary data only; no primary data will be collected. The main data source for this study is the all-payer-all-claims (APAC) database maintained by Oregon Health Authority. That database contains individual-level medical claims submitted by health providers to bill Medicaid and commercial insurers for the services provided. The claims do not contain any direct identifiers such as patient names or street addresses or social security numbers. They do, however, contain patient month and year of birth and residence zip code. These data are necessary for the research because, for example, we need to link children to school districts by zip code of residence. As we describe in the attached project summary, study results will only be reported in the form of aggregate statistics such as regression coefficients and sample means. Please see the attached project description for more information.

Number of Subjects

* **(5.23) Indicate the maximum number of subjects to be accrued across all sites. If a total number cannot be provided, please provide an estimate. If the activity is solely limited to data analysis, indicate the number of subjects' records that will be analyzed:**

5,000,000

Study Populations

The regulations require that additional protections be given to the subject populations listed below. If you indicate Yes to any of these questions, the application will guide you to resources you should consult.

*

* **(5.24) Does your study involve children?**
☑ Yes ☐ No

Assent from the minors will need to be obtained and permission from the parents will need to be obtained unless a waiver is granted (see "Consent Process" section).

* **(5.25) Does your study involve prisoners?**
☐ Yes ☑ No

* **(5.26) Does your study involve pregnant women, human fetuses or neonates?**
☐ Yes ☑ No

Inclusion and Exclusion Criteria

* **(5.27) Describe the criteria that define who will be included in your study and who will be excluded from your study:**
Please see the attached project description.

* **(5.28) Will you collect information from subjects who are physically located in the European Economic Area (EEA) or in the UK?**

The EEA includes the following countries: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK. To avoid GDPR-applicability, you must exclude individuals who are physically located in the EEA or in the UK.
☐ Yes ☑ No

Multi-Site Research

* **(5.29.1) Will the research take place at a site or entity, e.g. school, organization, hospital, clinic, company, etc? If so, please submit a Letter of Support/Permission Letter from the site. The Letter must confirm that the site supports the study and has the resources necessary to protect subjects and to conduct the research plan.**
☐ Yes ☑ No

* **(5.29.2) Is this is a multi-site study?**

A multi-site study is one in which non-Princeton research personnel work at a university or organization that has an IRB. Please click on the above hyperlink for examples. Note that multi-site studies involving human subjects research funded by the federal government must decide upon a single Institutional Review Board ("sIRB"). Please contact the IRB office if you have questions.
☐ Yes ☑ No

Recruitment Methods

* **(5.32) Describe how you will locate, contact, and invite subjects to participate in your study. If you will be using recruitment materials such as advertisements or invitations (printed, audio, visual, online),**

submit them in the Supporting Documents section of this form:
N/A

* **(5.33) Are any subjects compensated for study participation?**
☐ Yes ☑ No

* **(5.33.1) Are payments to subjects who are nationals of, or located in, a comprehensively sanctioned country likely to occur in relation to this project?**
☐ Yes ☑ No

Resources

* **(5.34) Describe your process to ensure that all research personnel are adequately informed about the protocol, the research procedures, and about their duties and functions:**
All research personnel will complete the IRB trainings required by the university.

* **(5.35) Describe the availability of medical, psychological, or other resources that subjects may need as a result of participating in your study and explain how these resources will be supplied:**
N/A

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

6 Risks to Subjects

*** (6.1) List the reasonably foreseeable risks, discomforts, hazards, or inconveniences to the subjects related to the subjects' participation in the research:**
The main potential risk to subjects is from inadvertent disclosure of data that allows them to be identified. The risk of subjects being identified will be minimized by only reporting results in the aggregate as explained in the project description. In addition, the data will be stored securely on Citadel and only researchers trained in human subjects research will have access to it.

*** (6.2) Describe the probability, magnitude, duration, and reversibility of the risks. Consider physical, psychological, social, legal, and economic risks:**
We will only report study results in the aggregate. We will suppress any cells with fewer than 25 observations. We will also not request exact dates of birth to use in our study (we will only request month and year of birth) to further minimize the risk of indirectly identifying subjects. Hence, we think the risk of data disclosure that allows any person to be identified is very small.

*** (6.3) Describe any financial costs (for example, medical tests, tolls, parking) that subjects may be responsible for because of participation in the research:**
N/A

*** (6.4) Please describe the medical treatment and compensation that will be provided to subjects in the event of an injury caused by your research. If medical treatment and compensation will not be provided to subjects, indicate that:**
N/A

*** (6.5) Do you think the study poses more than Minimal Risk to subjects?**
☐ Yes ☑ No

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

7 Potential Benefits

* **(7.1) Describe the potential benefits, if any, that individual subjects may experience from taking part in the research: Include the probability, magnitude, and duration of the potential benefits.**
None

* **(7.2) What is the value of this study to society?**
This study will provide new insights into the effectiveness of several policies in Oregon that have the potential to reduce disparities in children's and women's health, especially mental health.

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

9 Confidentiality

* **(9.1) Is your study federally funded and will you collect identifiable, sensitive information?**

Examples of "sensitive" information include research on mental health and research on the use and effect of alcohol and other psychoactive drugs.

☐ Yes ☑ No

* **(9.2) Is your study funded by NSF? (National Science Foundation)**

☐ Yes ☑ No

To complete the following sections, please refer to the following resources:

- Research Data Security Guidelines
- Protecting Your Research Data -- Summary Table
- Research Data Management Guidelines

Given the above guidelines, describe the procedures to secure and maintain the confidentiality of data in the following areas:

* **(9.4) Desktop and laptop computers used in the study:**

The data will not be stored on the researchers' computers and will be accessed via a remote desktop connection.

* **(9.5) File server(s) used in the study:**

The data will be stored on Citadel HIPPA compliant server (Citadel is Princeton University's secure research infrastructure environment).

* **(9.6) Removable media used in the study:**

None

* **(9.7) Paper forms used in the study:**

None

* **(9.8) Cloud storage services used in the study:**

Please see section 9.5 on how the data will be stored.

* **(9.9) Encryption methods used in the study:**

None (all direct identifiers will be removed by the data provider before transferring the data to Princeton University's Citadel).

* **(9.10) Data transfer methods used in the study:**

The data will be transferred by the data provider to Princeton University's Citadel.

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

10 Privacy

* **(10.1) Describe the steps that will be taken to protect subjects' privacy interests.**

Privacy is about people and means respecting an individual's right to be free from unauthorized or unreasonable intrusion, including control over the extent, timing and circumstances of obtaining personal information from or about them. Click on the above link for examples.

We will only report study results in the aggregate. We will suppress any cells with fewer than 25 observations. We will also not request exact dates of birth to use in our study (we will only request month and year of birth) to further minimize the risk of indirectly identifying subjects. We will not personally attempt to identify any person in the data. Hence, we think the risk of data disclosure that allows any person to be identified is very small.

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

11 Consent

* **(11.1) Will subjects consent?**

☐ Yes ☑ No

* **(11.2) All of the below criteria must be met for the IRB to approve a waiver of consent. Please justify how each of the below is met.**

- (i) The research involves no more than minimal risk to the subjects;
- (ii) The research could not practicably be carried out without the requested waiver or alteration;
- (iii) If the research involves using identifiable private information or identifiable biospecimens, the research could not practicably be carried out without using such information or biospecimens in an identifiable format;
- (iv) The waiver or alteration will not adversely affect the rights and welfare of the subjects; and
- (v) Whenever appropriate, the subjects or legally authorized representatives will be provided with additional pertinent information after participation.

(i) The subjects are not readily identifiable to the researchers. Additionally, measures will be taken to minimize the risk of indirect subject identification, for example by reporting only aggregate results (that is, results for demographic / socio-economic / diagnosis groups of individuals at the level of school districts or counties or the state (or similar geography level)).
(ii) This is because the sample size will be millions of individuals.
(iii) This research does not involve using direct private identifiers such as names or street addresses or social security numbers or biospecimens; it does involve using potentially indirect identifiers such as zip code of residence and month and year of birth; however, as explained above, the use of such indirect identifiers is necessary for the research design used in this study.
(iv) This is because subjects are not directly identifiable, and the risks of indirect subject identification will be minimized.
(v) Not possible for this study.

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

12 International Research

Some travelers with sensitive research and traveling to a country intolerant of such research may be at increased risk of harassment, secondary inspection at immigration when entering a country, or arbitrary arrest. Travelers at increased risk may be involved with research or activism that may be perceived as sensitive by the host government, by local people, groups, or companies at the study site, or be deemed culturally inappropriate. Examples of research that may be deemed sensitive include researching:

- **Marginalized groups based on gender, sexual orientation / presentation, ethnicity, race, religion, political leanings or affiliations, etc.**
- **Movements, topics, or organizations that are deemed socially or politically taboo and may be considered illegal in the host country.**
- **Resources of strategic interest, such as natural resources (rare earth metals, logging, fossil fuels, etc.) and technology of strategic interest to the host country (AI, machine learning, aerospace, communications, etc.).**

* **(12.1) Will this project be conducted in whole, or in part, at a location outside the United States?**

☐ Yes ☑ No

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

13 Conflict of Interest

* **(13.1) Does the PI or any research personnel have a financial or other potential conflict of interest affecting objectivity in the study? For more information, please review the COI website for details.**

☐ Yes ☑ No

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

14 Supporting Documents

Attach supporting documents here. Supporting documents include advertisements, surveys, consent documents, interview guides, questionnaires, and verification of human subjects training (if not completed via CITI and while at Princeton).

Add Supporting Documents

Document Type	Other
Document Description	Project description
Upload	Oregons Projects 07.21.2024JC_AM.pdf

Please save your work before proceeding to the next section of this form. Otherwise, your work will not be saved.

15 PI Assurance

By electronically approving this protocol and submitting it to the IRB, the PI agrees to follow the following obligations outlined in Princeton University SOP 207: Obligations of the Principal Investigator for Human Subjects Research

1. Principal investigators must not commence research until the PI has the IRB approval letter and obtained all other required approvals, such as approvals of departments or divisions that require approval of the use of their resources. If a PI is collaborating on ahuman subjects research study that is approved by another IRB, the PI's actions may engage Princeton University in the human subjects research. If Princeton University is engaged in the human subjects research, local IRB review (Princeton IRB review) is required or an IRB Authorization Agreement or Reliance Agreement must be fully executed before the PI begins collaboration in the human subjects research. Please see Princeton University IRB SOP 208 for details.

2. If the PI has any questions about whether s/he is conducting research involving human subjects, including collaboration in human subjects research that engages Princeton University, the PI must contact the IRB before commencing the study

3. PIs must conduct the research in accordance with the most recent protocol approved by the IRB.

4. PI must protect the rights, safety, and welfare of subjects involved in the research.

5. The PI must comply with all requirements and determinations of the IRB.

6. The PI must use sound study design in accordance with the standards of his/her discipline and design studies in a manner that minimizes risks to subjects.

7. The PI must ensure that there are adequate resources to carry out the research safely. This includes, but is not limited to, sufficient investigator time, appropriately qualified research team members, equipment, and space.

8. The PI must ensure that research staff are qualified including, but not limited to, appropriate human subjects training, education, expertise, credentials, protocol requirements and privileges, to perform procedures and duties assigned to them during the study.

9. PIs are required to provide verification of human subjects training. This requirement is described in greater detail in SOP 202.

10. PIs must not make modifications to the research without prior IRB review and approval, unless necessary to eliminate apparent immediate hazards to subjects.

11. The PI must report the information items listed in SOP 206: Reporting Requirements for Investigators to the IRB within 5 business days of learning of the information.

12. PIs must submit continuing reviews to avoid a lapse in approval of their study. If approval of the research expires, the PI must stop all research activities immediately and contact the IRB.

13. PIs must close the research (end the IRB's oversight) when all the following criteria are met:
    - The protocol is permanently closed to enrollment and
    - All subjects have completed all protocol-related interventions and interactions and
    - No additional identifiable private information about the subjects is being obtained and

- No additional identifiable private information about the subjects is being obtained; and
- The PI's analysis of private identifiable information is completed.

14. Unless the IRB approved a protocol to include the following populations, the PI must not enroll the following subjects in the study:

- Adults unable to consent
- Children
- Neonates of uncertain viability: a newborn that may not be viable (able to survive after delivery, given the benefit of available medical therapy to the point of independently maintaining heartbeat and respiration)
- Nonviable neonates: a newborn that is not viable
- Pregnant women
- Prisoners
- Individuals unable to speak English
- When consent, permission, or assent are required by the IRB, the PI must ensure that it is obtained and documented in accordance with the most recent approved protocol.

15. The PI must retain research records (including signed consent documents) for three years after completion of the research. "Completion of the research" means when the definition of human subjects research is no longer met: the protocol is permanently closed to enrollment; and all subjects have completed all protocol-related interventions and interactions; and no additional identifiable private information about the subjects is being obtained; and analysis of private identifiable information is completed. Completion of the research is typically evidenced by the PI submitting a closure form or the study's lapse (expiration) of approval.

16. If the PI is a lead investigator of a multi-site study, the PI must manage information that is relevant to the protection of subjects across all study sites, such as reporting Unanticipated Problems Involving Risks to Subjects or Others to the IRB(s); reviewing interim study results; and securing approval of modifications from the IRB(s) before their implementation.

17. For studies regulated by a federal department or agency, the PI must follow the additional obligations of that federal department. These agencies include, but are not limited to, the Department of Defense; Department of Energy; Department of Justice; Environmental Protection Agency; Education Department; Federal Drug Administration; and the National Institutes of Health.

* **Select the appropriate response below.**

- [x] I am the PI and have read the above and agree to serve as the PI with the above obligations
- [ ] I am not the PI

CLICKING THIS CHECKBOX ACTS AS PI AUTHORIZATION OF THIS SUBMISSION.

Please follow these steps to complete and submit your application to the IRB or to another researcher.

1. Ensure all mandatory questions are answered using the **CHECK FOR ERRORS** checkbox. Click the **CHECK FOR ERRORS** checkbox until it displays **FORM LOCKED, UNLOCK TO EDIT**.

2. **IF YOU ARE A PI REVIEWING/APPROVING A RESEARCHER'S SUBMISSION**

- Navigate to the **ASSIGNMENTS** tab of the form using the menu on the left.
- Choose **SUBMIT TO IRB OFFICE** or **RETURN TO IRB OFFICE** in the **NEXT STEP DECISION** dropdown.
- Click **I AM DONE** button to send the submission to the IRB.

3. **IF YOU WANT TO SEND THE SUBMISSION TO A RESEARCHER**

- Choose **RETURN TO RESEARCHER** or **MODIFICATIONS REQUIRED - RESEARCHER** in the **NEXT STEP**

- Choose **RETURN TO RESEARCHER** or **MODIFICATIONS REQUIRED – RESEARCHER** in the **NEXT STEP DECISION** dropdown.
- Select the researcher in the dropdown and click **I AM DONE**.

4. **IF YOU ARE A PI WORKING ON YOUR OWN SUBMISSION,**
   - Click **SUBMIT** (top left side of the form) to send the submission to the IRB.
   - Wait for the system to complete the operation. Once your application is submitted the status will change to **SUBMIT TO IRB OFFICE** or **RETURN TO IRB OFFICE**.

IRB Office- Hide Form: ☐ Yes ☐ No

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at CustomScript (file:///D:/B10/portal/temp/EForm_326b48af9aa74019bcebddff2efe3e87/main.html:423:2)
at file:///D:/B10/portal/temp/EForm_326b48af9aa74019bcebddff2efe3e87/main.html:429:26

Appendix 1

EForm Name: IRB Application
Page: 14 Supporting Documents
Section:
Question: Upload
File Name: Oregons Projects 07.21.2024JC_AM.pdf

An Examination of Select Policies with Potential to Reduce Disparities in Children's and Women's Health in Oregon

In this project, we plan to explore policies affecting women's and children's access to health services in Oregon, especially mental health services, with particular attention to racial and some other disparities. We hope to uncover approaches to both reducing disparities and improving overall health. Maternal postpartum depression is the leading cause of maternal morbidity affecting an estimated 1 in 5 pregnant women. Yet new Black and Hispanic mothers are only half as likely to receive treatment as White women (Kozhimannil, 2011). The American Academy of Pediatrics has called the child mental health crisis a "national emergency" (AAP, 2021). Yet half of all children with an identified mental health problem receive inadequate care and there are stubborn disparities by race, ethnicity, and socioeconomic status (Hoffman, 2022).

The primary data source for this project will be individual-level medical claims data from Oregon's All-Payer-All-Claims (APAC) database for 2011-2023. The claims are submitted by health providers to insurers (such as commercial insurers or Medicaid) billing them for the services provided, and contain some limited information about the beneficiary (such as date of birth, sex, etc.), the diagnosis for which the services were provided, the procedures performed, the amount billed, the amount paid, the type of setting in which services were provided (a hospital, an ER, an outpatient setting, etc.), and some information about the provider. These data will be used to identify services individuals have access to (at the geographic levels such as the school district or county) as well as individual outcomes. Outcomes will include measures of healthcare utilization in both the short term and the longer term.

The APAC data is particularly valuable for our project because it will allow us to observe all medical services received and their attributes (such as, for example, whether the service was received in an ER or an outpatient clinic or a school) for both individuals with private health insurance and those with Medicaid. Without access to such data, this project would not be feasible. Our project will pose minimal risk to human subjects because we will not have access to any individual identifiers such as names or street addresses; the only identifiers we will have access to are residential zip code and month and year of birth. Zip code is necessary in order to control for characteristics of neighborhoods individuals live in, and to determine whether particular health services are provided in the zip code or school district or county. Month and year of birth are needed to determine individuals' eligibility for certain health services and programs. All results will be in the form of sample summary statistics or regression coefficients and standard errors. In the summary statistics, any cells with fewer than 10 observations will be suppressed.

One focus of the project is on the role of school-based health services (SBHS) in Oregon. Little is currently known about the types of services, especially mental health services, that are provided in school-based settings. We will study both how access to, and utilization of, SBHS has varied by race and ethnicity and what have been the effects of expanding SBHS during 2011-2023 on children.

We will describe school-based health services in Oregon, including their availability and evolution over time, addressing questions such as patterns in where these types of services are located, characteristics of the student population exposed to such services in their school districts or counties, and the characteristics of the children actually using the services. For example, we will ask what fraction of school-age children

in Oregon have access to individualized mental health therapy with a licensed mental health professional in their school district? How do patterns in the services offered vary with the characteristics of children served? And when services are offered, what are the socio-demographic characteristics of the children who use them?

When studying the effects of expanding SBHS (especially mental health services) in Oregon, some outcomes we might consider include increased healthcare utilization in the short term (for example, more immunization, vaccination, and other preventive services and mental health evaluations received), less morbidity (for example, having fewer ER or urgent care center (UCC) visits), and potential longer-run cost-savings for the Medicaid program and other payers (the longer-term cost savings might result from fewer costly ER visits or more preventive care received).

A second theme we will explore involves Oregon's recent efforts to improve screening of vulnerable populations. A recent study analyzing data from a nationally representative sample of postpartum women found higher prevalence of postpartum depressive symptoms (PDS) among younger women and women who experienced intimate partner violence before or during pregnancy (over 20% vs. 13% overall) as well as stark disparities in the prevalence of PDS by race and ethnicity: 22% among non-Hispanic American Indian/Alaska Native women, 19.2% among non-Hispanic Asian/Pacific Islander women, and 18.2% among non-Hispanic Black women, compared to 11.4% among non-Hispanic White women (Bauman et al., 2020). The American Academy of Pediatrics (AAP) advises that screening for postpartum depression (PPD) should be conducted during the 1-month, 2-month, 4-month, and 6-month well-child visits for infants. Yet a recent study from 2020 found that in Oregon, where the overall PPD rate is about 18%, only about 64% of the surveyed providers screened for PPD at least once in the postpartum year (Docherty et al., 2020). At the same time, previous studies found that perinatal depression at the time of delivery was associated with higher pediatric emergency department use (Rokicki, 2024). If PPD screening leads to more timely diagnosis and treatment, then there is potential for PPD screening to improve health outcomes of mothers and their newborns and reduce longer-term medical spending. However, previous studies also documented significant racial and ethnic disparities in the likelihood of receiving postpartum follow-up mental healthcare. For example, Haight et al. (2024) found in a sample of postpartum women from 7 states that among those reporting early PDS, women identifying as Asian, Native Hawaiian, Pacific Islander, Southwest Asian, Middle Eastern, or North African or Hispanic, were significantly less likely than White women to also report ever receiving a diagnosis or mental health care.[1]

In 2016, the federal Center for Medicare and Medicaid Services (CMS) attempted to improve screening rates by allowing providers to bill Medicaid for PPD screening under the child's Medicaid identification number when the screening is conducted in conjunction with the child's EPSDT benefits (CMS, 2016). Although Oregon, unlike some other states, does not require that providers screen for PPD during postpartum or well-child visits (Burkhard, 2024), it is one of the states that has adopted the CMS policy change (National Academy for State Health Policy, 2020). This policy has potential to reduce racial and ethnic race disparities in postpartum mental health care received in Oregon, but only if positive screening results lead to an appropriate diagnosis and appropriate mental health care.

[1] Black women with early PDS in the study were not significantly less likely than White women to receive a diagnosis but were significantly less likely to receive mental health care.

To explore the effects of Oregon's recent efforts in screening vulnerable populations, we will describe the fraction of postpartum women in Oregon who receive a PPD screening, diagnosis, and follow-up care by insurance type (Medicaid vs. commercial payer), race and ethnicity, prior mental health history if any, as well as other population characteristics. Then, we will use regression analysis to examine the effect of screening on maternal and infant health outcomes as well as on medical spending in the short and longer term. We anticipate that an increase in PPD screening rates might lead to better health outcomes for women (for example, fewer ER and UCC visits and fewer hospitalizations). We will also look at the effect of screening mothers on infants' health outcomes, including ER and UCC visits and hospitalizations, as well as receipt of preventive health services and the probability of being diagnosed with an infectious disease, injury, or other preventable condition. We will also consider private insurers' efforts related to screening women for PPD and other mental health conditions.

We will also explore Oregon's efforts to increase screening among children. Since January 1, 2016, health care providers in Oregon have been authorized to bill Medicaid for children's mental health services using a code that identifies family and environmental factors that potentially predispose the child to a mental health disorder even if the child does not meet all the criteria for a mental health diagnosis (Smith et al., 2018). Such factors include "family discord, high expressed emotional level within the family, inadequate family supports and/or resources, and inadequate or distorted communication within the family" (Smith et al., 2018). Additionally, separate codes for children with a recent history of abuse and neglect were revised to remove age restrictions (Smith et al., 2018). In our project, we will ask whether these policies aimed at supporting early diagnosis and intervention for childhood mental health conditions resulted in improved health outcomes (which can be measured, for example, as fewer ER and UCC visits and fewer hospitalizations) and lower longer-term medical spending for children (short-term medical spending may increase due to increased utilization of healthcare). We will also consider the effect of removing age restrictions on reimbursements for screenings, which would be expected to increase the provision of services to older children. We anticipate that, since Black children are identified as victims of maltreatment at higher rates than other children, these changes may be especially impactful for them, and so this project might help to determine whether early diagnosis and intervention is a promising policy for reducing racial disparities.

Another theme we may explore in this project is the effects of 2013 changes in diagnostic criteria for childhood mental health conditions. Mental health disorders are diagnosed using the Diagnostic and Statistical Manual of Mental Disorders (DSM). The fifth revision of the DSM in 2013 substantially altered the diagnostic criteria for several disorders in a way that may have led to increases in their measured prevalence. Some of these changes may have had differential effects on minority and low-income children. For example, in the DSM-IV, a person could only be diagnosed with attention deficit hyperactivity disorder (ADHD) if their symptoms started by the age of 7. The DSM-V shifted the cutoff to 12 years. Because poor and minority children tend to be referred for treatment at later ages, it is possible that more of them received ADHD diagnoses because of this shift in the age threshold. Vande Voort et al., (2014) used a nationally representative sample of US youth aged 12 to 15 from the National Health and Nutrition Examination Survey (NHANES) and estimated that extending the age of onset criterion from 7 to 12 years raised ADHD prevalence from 7.38% (DSM-IV) to 10.84% (DSM-V). Severity and comorbidity patterns did not significantly differ between youth with early versus later age of onset, but those with later onset were more likely to come from lower-income and ethnic minority

backgrounds. Other changes in the DSM affected diagnoses of conditions including autism (now called autism spectrum disorder), depression, and anxiety, with unknown effects on disparities in disparities in diagnosis and treatment.

In this project, we may examine the impacts of these changes and draw out the implications for changes in the propensity to be diagnosed on treatment and longer-term health outcomes. For example, we will examine the outcomes of children around the age cut-offs before and after the policy shift and might ask if higher propensity for being diagnosed with ADHD and receiving treatment due to the policy change led to fewer hospitalizations, ER and UCC visits, and whether it lowered medical spending in the longer term. Since minority children are especially more likely to be diagnosed at later ages, we anticipate that this policy is likely to have had a disproportionate effect on minority children, but only if receiving a diagnosis is strongly associated with receiving follow-up care. Since receiving a diagnosis might not lead to follow-up care, especially for minority and low-income children, there is a possibility that the policy change in diagnosis has been ineffective.

A third theme we will explore concerns Oregonian women's access to reproductive health services and the interplay with mental health. In 2017, bill HB 3391, also known as the Reproductive Health Equity Act, obligated most private insurance health plans offered in Oregon to fully cover abortion procedures with no copay or deductible (with some minor exceptions). Additionally, Oregon's Medicaid program, the Oregon Health Plan (OHP), had been covering abortions prior to this policy change (Guttmacher Institute, 2024; Harvey et al., 2021). In Oregon, abortion is not restricted based on gestational duration, and qualified health care professionals, not solely physicians, can provide abortions (Guttmacher Institute, 2024).

We will ask whether the 2017 legislation increased the number/rate/ratio of abortions, changed the distribution of characteristics of women who got abortion, the settings in which they got abortion, the timing of abortion, or the type of abortion procedure. We will also examine the effects on complications of abortion[2] on medical spending, and on the physical and mental health of women undergoing abortion and those delivering. It is possible that reducing financial barriers allowed Oregonian women seeking abortion services to undergo the procedure earlier in the pregnancy, reducing the risks of complications and costs (Harvey et al., 2021). Alternatively, the increased financial coverage of abortion might have encouraged some women with more advanced pregnancies to consider abortion. If this policy change reduced the average gestational age at abortion, it might have had a disproportionate impact on Black women because Black women have the highest abortion rate and ratio (CDC, 2023), are less likely to have abortion at ≤9 weeks' gestation (CDC, 2023), and have a higher rate of some pregnancy-related complications such as ectopic pregnancies, the top fifth cause of maternal death (Cineas, 2022). Additionally, we will ask how the supply and characteristics of health providers offering abortion services changed after the policy shift.

[2] Two types of complications are of interest - post-abortion complications associated with, for example, more invasive procedures, and pregnancy-related complications such as ectopic pregnancies that are resolved with abortion. Having abortion early in the pregnancy is likely to both reduce the first type of complications due to the use of less invasive abortion procedures and to prevent further complications that might result from not addressing pregnancy-related complications such as ectopic pregnancy in a timely manner.

References

AbortionFinder. (2024). https://www.abortionfinder.org/abortion-guides-by-state/abortion-in-oregon/providers

American Academy of Pediatrics [AAP]. (2021). Declaration of a National Emergency in Child and Adolescent Mental Health. https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/

Bauman BL, Ko JY, Cox S, et al. (2020). Vital Signs: Postpartum Depressive Symptoms and Provider Discussions about Perinatal Depression - United States, 2018. Morbidity and Mortality Weekly Report 69:575–581. DOI: http://dx.doi.org/10.15585/mmwr.mm6919a2.

Burkhard, J. (2024). A Comprehensive Look at State Maternal Mental Health Screening and Reimbursement Legislation. Policy Center for Maternal Mental Health. https://www.2020mom.org/blog/2024/23/a-comprehensive-look-at-state-maternal-mental-health-screening-and-reimbursement-legislation

Centers for Medicare & Medicaid Services [CMS]. (2016). CMCS Informational Bulletin. Subject: Maternal Depression Screening and Treatment: A Critical Role for Medicaid in the Care of Mothers and Children. https://www.medicaid.gov/sites/default/files/Federal-Policy-Guidance/Downloads/cib051116.pdf

Centers for Disease Control and Prevention [CDC]. (2023). Abortion Surveillance — United States, 2021. MMWR Surveill Summ 2023;72(No. SS-9):1–29. DOI: http://dx.doi.org/10.15585/mmwr.ss7209a1

Cineas, F. (2022). Black women will suffer the most without Roe. Vox. https://www.vox.com/2022/6/29/23187002/black-women-abortion-access-roe

Docherty A, Najjar R, Combs S, Woolley R, Stoyles S. Postpartum depression screening in the first year: A cross-sectional provider analysis in Oregon. J Am Assoc Nurse Pract. 2020 Apr; 32(4):308-315. doi: 10.1097/JXX.0000000000000250. PMID: 31373961.

Gintner, G. G., & Mooney, P. (2015). Attention to ADHD: DSM-5 Changes, Practice Guideline Updates and Implications for Schools. *Beyond Behavior*, *24*(2), 20-29. https://doi.org/10.1177/107429561502400204

Guttmacher Institute. (2024). https://states.guttmacher.org/policies/oregon/abortion-policies

Haight, S.C., Daw, J.R., Martin, C.L., Sheffield-Abdullah, K., Verbiest, S., Pence, B.W., & Maselko, J. (2024). Postpartum Depressive Symptoms, Diagnosis, and Care in 7 US Jurisdictions. Health Affairs 43(4): Perinatal Mental Health and Well-being. https://doi.org/10.1377/hlthaff.2023.01434

Harvey, S.M., Gibbs, S.E., & Oakley, L.P. (2021). Association of Medicaid Expansion With Access to Abortion Services for Women With Low Incomes in Oregon. Women's Health Issues 31-2 (2021) 107–113. https://www.sciencedirect.com/science/article/abs/pii/S1049386720301067

Hoffmann JA, Alegría M, Alvarez K, Anosike A, Shah PP, Simon KM, Lee LK. Disparities in Pediatric Mental and Behavioral Health Conditions. Pediatrics. 2022 Oct 1;150(4):e2022058227. doi: 10.1542/peds.2022-058227.

Love, H.E., Schlitt, J., Soleimanpour, S., Panchal, N., & Behr, C. (2019). Twenty Years Of School-Based Health Care Growth And Expansion. Health Affairs 38(5). https://doi.org/10.1377/hlthaff.2018.05472

KFF. (2024). The Availability and Use of Medication Abortion. https://www.kff.org/womens-health-policy/fact-sheet/the-availability-and-use-of-medication-abortion/

Kozhimannil KB, Trinacty CM, Busch AB, Huskamp HA, Adams AS. (2011). Racial and ethnic disparities in postpartum depression care among low-income women. Psychiatr Serv. 62(6):619-25. doi: 10.1176/ps.62.6.pss6206_0619.

National Academy for State Health Policy. (2020). NASHP Finds More States Are Screening for Maternal Depression during Well-Child Visits. https://nashp.org/nashp-finds-more-states-are-screening-for-maternal-depression-during-well-child-visits/

Oregon Health Authority [OHA]. (2024). Vital Statistics. https://www.oregon.gov/oha/ph/birthdeathcertificates/vitalstatistics/pages/induced-abortion-data.aspx

Oregon Health Authority [OHA]. (n.d.). Paying for abortion. https://www.oregon.gov/oha/ph/healthypeoplefamilies/abortionaccess/pages/payment.aspx

Planned Parenthood. (2022). How much does an abortion cost? https://www.plannedparenthood.org/blog/how-much-does-an-abortion-cost

Polanczyk G, Caspi A, Houts R, Kollins SH, Rohde LA, Moffitt TE. (2010). Implications of extending the ADHD age-of-onset criterion to age 12: results from a prospectively studied birth cohort. J Am Acad Child Adolesc Psychiatry. 2010 Mar; 49(3):210-6. PMID: 20410710.

Rokicki, S. (2024). Perinatal Depression Associated With Increased Pediatric Emergency Department Use And Charges In The First Year Of Life. Health Affairs 43(4): Perinatal Mental Health and Well-being. https://doi.org/10.1377/hlthaff.2023.01443

Sanders, S., Thomas, R., Glasziou, P. et al. (2019). A review of changes to the attention deficit/hyperactivity disorder age of onset criterion using the checklist for modifying disease definitions. BMC Psychiatry 19, 357. https://doi.org/10.1186/s12888-019-2337-7

Smith, S., Granja, M. R., Nguyen, U. S., & Rajani, K. (2018). How States Use Medicaid to Cover Key Infant and Early Childhood Mental Health Services: Results of a 50-state survey (2018 update). National Center for Children in Poverty [NCCP]. https://www.nccp.org/wp-content/uploads/2018/11/text_1211.pdf

Vande Voort JL, He JP, Jameson ND, Merikangas KR. (2014). Impact of the DSM-5 attention-deficit/hyperactivity disorder age-of-onset criterion in the US adolescent population. J Am Acad Child Adolesc Psychiatry 53(7):736-44. doi: 10.1016/j.jaac.2014.03.005. Epub 2014 Apr 23. PMID: 24954823.

Research Integrity & Assurance
Princeton University
Institutional Review Board
619 Alexander Road, Suite 102
Princeton, NJ 08540-6000

MEMORANDUM

To:	Janet Marion Currie
From:	Institutional Review Board
Re:	IRB# 17064
Title:	An Examination of Select Policies with Potential to Reduce Disparities in Children's and Women's Health in Oregon

05-Aug-2024

Dear Professor Currie,

On 30-Jul-2024, the IRB determined that the proposed activity is not human subjects research. Consequently, Princeton IRB approval is not applicable. You are welcome to pursue the activity, obtaining any applicable administrative or departmental (non-IRB) approvals.

If you have IRB questions, please contact the IRB Office at (609) 258-0865 or irb@princeton.edu. If you have eRIA or other technical questions, please contact eria-irb@princeton.edu. In addition, our most frequently used resources are listed in the footer.

Thank you,

Daniel Notterman
Chair, Institutional Review Board

Please answer each of the following questions:	
What is your study population? For example: people with an inpatient hospitalization, diabetes, pregnant substance use disorder, cancer etc	Children of school age
How is your study population defined? For example: by diagnosis, procedure and/or national drug codes, APAC grouper type, clinical categories (CCSR), BETOS, DRG, MDC etc.	The study population is defined by age
What are your specific independent variables, predictor variables?	Access to a school-based health center (this can be defined in several ways, such as yes or no, or the number of years one had access, or the age at which one first got access, etc.); access to specific health services through a school-based health center (for example, some school based health centers might offer psychotherapy with a licensed clinician on site while others will only do a referral for psychotherapy to an out-of-school provider)
What are your specific covariate variables?	Health status (morbidity) prior to gaining access to school-based services; a history of mental health treatment; a history of hospitalizations overall and mental health related hospitalizations specifically; demographic charcateristics such as race, ethnicity, parent immigrant status

Please answer each of the following questions:	
What are your specific dependent variables? Note that 'health outcome(s)' is not a specific dependent variable.	The outcome variables include: at least one Emergency Department or Urgent Care Center Visit; the number of Emergency Department and Urgent Care Center visits; at least one hospitalization for any reason; at least one mental health related hospitalization; the number of immunization and other preventive care services received; the number of mental health evaluations received; the number of psychotherapy sessions attended; at least one referral to out-of-school specialist; any mental health treatment received through either psychotherapy or prescription drugs.
Do you want claims and eligibility data for selected age groups only?	Specify age range:
	from 0 to 22

Do you want to limit claims and eligibility data by sex/gender?	Include all
	x

Please indicate the year(s) of data requested	2011 - 2024
	x

Do you want people who are not Oregon residents and their claims included?	No
People with Medicaid coverage or Medicare Part A and Part B are Oregon residents	x

Do you want people with pharmacy coverage, but no medical coverage included?	Yes
	x

Do you want people with dental coverage, but no medical coverage included?	No
	x

Do you want orphan claims included? (claims, but no eligibility or coverage reported)	No
	x

Please answer each of the following questions:	
Do you want denied claims included? (No reason is provided for denied medical or pharmacy claims. Claims can be denied then paid)	No x
What payer types do you want?	Commercial and Medicaid x
One payer reported the claim status for all of their claims as fee-for-service for some years when most claims were encounter or managed care claims.	Change to encounter x
Do you want APAC to correct payer reported errors for product codes, claim status, orphan status, COB status for member month and claims data?	Yes x
What medical claim types do you want?	All x
Do you want to limit medical claims data to selected diagnoses, procedure or other codes?	No x
Do you want substance use disorder claims (SUD)? SUD claims were not available for request prior to APAC release 14. SUD requests require detailed information about purpose, hypotheses and analyses, information about data access, security, data destruction and data linking to any other source and detailed justification for requested data elements. Date use and release of information are restricted. Requires additional Data Use Agreement	No x
Do you want APAC to calculate payer paid, member paid and total paid by claim and or claim line?	Yes-by claim line x
Do you want medical Coordination of Benefit (COB) claims?	Yes, when both the primary and secondary payer claims are linked x

Please answer each of the following questions:

Do you want pharmacy claims?	Yes
	x

Do you want pharmacy claims for people with pharmacy coverage, but no medical coverage?	Yes
	x

Do you want APAC to calculate payer paid, member paid and total paid by claim for pharmacy claims?	Yes
	x

Do you want dental claims?	No
	x

Do you want dental claims for people with dental coverage, but no medical coverage?	No
	x
Do you want APAC to calculate payer paid, member paid and total paid by claim line for dental claims?	No dental data

Do you want monthly eligibility data (insured/covered by year, by month, by payer)?	Yes
	x

Are you requesting identifiable data?	Zip code, quarter/year of birth
	x

Do you want provider data (rendering, prescribing, billing, pharmacy, hospital, ambulatory surgery center)?	Yes
	x

Please answer each of the following questions:	
Do you want APAC data linked to Oregon Center for Health Statitistics (CHS) Death Certificate data and/or Birth Certificate data? Please include a list of the birth and or death data variables that you plan to request from birth and/or death certificate data. You will need approval from both CHS and APAC. Submit request to APAC first. After APAC approval submit request to CHS and provide APAC approval notice. https://www.oregon.gov/oha/PH/BIRTHDEATHCERTIFICATES/VITALSTATISTICS/Pages/Data-Use-Requests.aspx	Yes x The list of variables we are planning to request from birth certificate data is attached to this application.

Is your requested APAC data going to be linked by the APAC Team or data requester to any other data source?	Yes, linked by APAC x

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
The data elements highlighted in blue are provided in every data request	uid	A unique identifier that links to the row as submitted in the MC Intake File Layout. Used for linking tables/views	
	release_id	A value associated with the data release	
	mc059_service_start_dt	Date services for patient started	
	dw_claim_id	A unique medical claim identifier	
	mc005_line_no	Line number for the claim that begins with 1 and is incremented by 1 for each additional service line of a claim	
	uniquepersonID	A unique identifier for a person across payers and time	
	dw_member_id	A payer & plan specific unique identifier for a person. A person can have multiple member IDs for a single payer because they can have multiple plans. DW_member_IDs are not unique identifiers for a person across payers and years	
	mc038_claim_status_cd	Claim status. P (Paid), D (Denied), C - (MCO/CCO encounter) E (other)	
	mc038a_cob_status	Coordination of benefit claim. Indicates secondary payer for a claim	
	orphan_fl	Identifies orphan claim with no corresponding eligibility for the date of service. 1 (Yes), 0 (No)	
	mc003_insurance_product_type_cd	A code that indicates an insurance coverage type. Data element required for linking claims to member months	
	Suppressed_Fl	1 (denied claim line), 0 (other than denied)	

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
	RemovedReversal_FI	1 (claims not included before release 13 because the charge, paid amount, and allowed amounts are zero or zero when summed across claim lines and after the removal of denied claim lines, 0 (otherwise)	
yes	COB	Links primary and secondary payer claims based on uniquepersonID, date, charged amount, procedure code and provider and identifies the primary payer claim, secondary payer claim and COBonly claim when there is no linked primary claim	Needed to correctly determine total cost of services received and fractions of the cost attributable to different payers
yes	Claim_LOB	Payer line of business: 1 (Medicare), 2 (Medicaid), 3 (commercial, 0 (no line of business reported)	Needed to determine payer type (to determine, for example, whether preventive services received in school-based settings lead to cost-savings for Medicaid or private payers or both)
yes	self_insured_fl	Self Insured flag	Needed to identify children with no insurance as those children might be particularly likely to benefit from school-based services
yes	mc001_payer_type	Payer reported payer type codes:(C) Carrier, (D) Medicaid, (G) Other government agency, (P) Pharmacy benefits manager, (T) Third-party administrator, (U) Unlicensed entity	Needed to determine payer type (to determine, for example, whether preventive services received in school-based settings lead to cost-savings for Medicaid or private payers or both)

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc018_admit_dt	Admission date	Needed to determine whether access to school-based services leads to fewer hospital admissions or reduces the likelihood of any hospitalization. Also needed to determine health status when, for example, diagnosis codes might be missing or incomplete or too broad, as longer hospital stays might indicate more severe medical conditions
yes	mc205_admit_diagnosis_cd	Admitting diagnosis. ICD-10 diagnosis code for dates of service beginning 10/01/2015, ICD-9 diagnosis code for dates of service before 10/01/2015	Needed to distinguish between types of hopsitalizations, for example, between mental health related and other hopsitalizations
yes	mc070_discharge_dt	Discharge date-required for inpatient hospitalization	Needed to determine health status when, for example, diagnosis codes might be missing or incomplete or too broad, as longer hospital stays might indicate more severe medical conditions
yes	LOS	Length of stay of inpatient admission measured in days. Discharge Date - Admit Date. <1 is rounded to 1. Negative values set to NULL	Needed to determine health status when, for example, diagnosis codes might be missing or incomplete or too broad, as longer hospital stays might indicate more severe medical conditions

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc037_place_of_service_cd	Industry standard place of service code	Needed to identify school-based claims
yes	mc041_principal_diagnosis_cd	Principal Diagnosis code	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc042_other_diagnosis_2	Additional Diagnosis 2	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc043_other_diagnosis_3	Additional Diagnosis 3	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc044_other_diagnosis_4	Additional Diagnosis 4	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc045_other_diagnosis_5	Additional Diagnosis 5	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc046_other_diagnosis_6	Additional Diagnosis 6	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc047_other_diagnosis_7	Additional Diagnosis 7	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc048_other_diagnosis_8	Additional Diagnosis 8	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc049_other_diagnosis_9	Additional Diagnosis 9	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc050_other_diagnosis_10	Additional Diagnosis 10	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc051_other_diagnosis_11	Additional Diagnosis 11	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc052_other_diagnosis_12	Additional Diagnosis 12	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc053_other_diagnosis_13	Additional Diagnosis 13	Needed to determine health status prior to the individual getting access to school-based health services, or whether access to school-based services leads to a higher diagnosis rate for certain conditions, especially mental health conditions
yes	mc201_icd_version_cd	Identifies ICD9 or ICD10 version	Needed to correctly process diagnosis codes
yes	mc055_procedure_cd	Current Procedural Terminology (CPT) code or Healthcare Common Procedure Coding System (HCPCS)	Needed to identify what services were received by a student in school-based settings and outside of school-based settings to study whether the receipt of those services improved student health or lowered their medical spending
yes	mc056_procedure_modifier_1_cd	CPT or HCPCS modifier	Needed to determine whether the service was provided under student's IEP or EPSDT benefit
yes	mc057_procedure_modifier_2_cd	CPT or HCPCS modifier	Needed to determine whether the service was provided under student's IEP or EPSDT benefit
yes	mc057a_procedure_modifier_3_cd	CPT or HCPCS modifier	Needed to determine whether the service was provided under student's IEP or EPSDT benefit
yes	mc057b_procedure_modifier_4_cd	CPT or HCPCS modifier	Needed to determine whether the service was provided under student's IEP or EPSDT benefit

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	claim_type	Vendor generated claim ltype. Identifies claim lines as inpatient facility claim (1), outpatient facility claim (2) and professional claim (3) based on bill type, revenue code and place of service. Null means claim line type could not be determined.	Needed to determine place of service (for example, some of our outcome variables include an indicator for any hospitalization (any inpatient claims), ED visits, etc.
yes	APACgrouper	Groups all lines of a claim in prioritized order as inpatient, emergency department, outpatient, professional, pharmacy and other based on type of bill, revenue and place of service codes	Needed to determine place of service (for example, some of our outcome variables include an indicator for any hospitalization (any inpatient claims), ED visits, etc.
yes	final_mdc	a code identifying the final Major Diagnostic Category (MDC)	Needed to determine health status, for example, to control for health status prior to the student getting access to school-based services
yes	final_drg	a code indentifying the final Diagnosis Related Group	Needed to determine health status, for example, to control for health status prior to the student getting access to school-based services
yes	mc058_icd_primary_procedure_cd	The main inpatient procedure code	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc058a_icd_procedure_2	Inpatient procedure ICD-10 code 2	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058b_icd_procedure_3	Inpatient procedure ICD-10 code 3	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058c_icd_procedure_4	Inpatient procedure ICD-10 code 4	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058d_icd_procedure_5	Inpatient procedure ICD-10 code 5	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058e_icd_procedure_6	Inpatient procedure ICD-10 code 6	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc058f_icd_procedure_7	Inpatient procedure ICD-10 code 7	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058g_icd_procedure_8	Inpatient procedure ICD-10 code 8	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058h_icd_procedure_9	Inpatient procedure ICD-10 code 9	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058j_icd_procedure_10	Inpatient procedure ICD-10 code 10	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058k_icd_procedure_11	Inpatient procedure ICD-10 code 11	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	mc058l_icd_procedure_12	Inpatient procedure ICD-10 code 12	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	mc058m_icd_procedure_13	Inpatient procedure ICD-10 code 13	Needed to distinguish between types of hospitalizations, for example, between mental health related and other hospitalizations, when diagnosis codes are missing
yes	drg description	Final DRG description	Needed to determine health status prior to the individual getting access to school-based health services
yes	mdc description	Final MDC description	Needed to determine health status prior to the individual getting access to school-based health services
yes	MS DRG MDC cross walk Description	Crosswalk DRG to MDC	Needed to determine health status prior to the individual getting access to school-based health services
yes	member paid amount claim line	Deduplicated member paid amount at claim line (sum of copayment, coinsurance and deductible or patient paid amt--whichever is larger)	Needed to determine whether preventive care received in school based settings leads to cost-savings in the longer term

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	Payer paid amount claim line	Deduplicated payment made by payer	Needed to determine whether preventive care received in school based settings leads to cost-savings in the longer term
yes	Total paid amount line	Sum of member paid amount and payer paid amount at claim line	Needed to determine whether preventive care received in school based settings leads to cost-savings in the longer term
yes	mc063_paid_amt	Payment made by payer	Needed to determine whether preventive care received in school based settings leads to cost-savings in the longer term
yes	dw_rendering_provider_id	A unique identifier associated with a unique rendering provider across plans, payers and years.	Needed to link together all claims submitted by each school based health center to determine what serices the center provides
yes	dw_billing_provider_id	A unique identifier associated with a unique billing provider across plans, payers andyears.Can be linked to dw_provider_ID in provider data	Needed to link together all claims submitted by each school based health center to determine what serices the center provides
yes	MCAID_Claim_Type	Medicaid claim type: I=inpatient, M=professional, B=professional crossover, C=outpatient crossover, A=inpatient crossover, O=outpatient, L=long term care, Q = compound pharmacy, D=dental	Needed to determine place of service (for example, some of our outcome variables include an indicator for any hospitalization (any inpatient claims), ED visits, etc.

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
The data elements highlighted in blue are provided in every data request	uid	A unique identifier that links to the row as submitted in the PC Intake File Layout. Used for linking tables/views	
	release_id	A value associated with the data release	
	dw_claim_id	A unique medical claim identifier	
	pc032_prescription_fill_dt	Prescription fill date	
	dw_member_id	A payer & plan specific unique identifier for a person. A person can have multiple member IDs for a single payer because they can have multiple plans. DW_member_IDs are not unique identifiers for a person across payers and years	
	uniquepersonID	A unique identifier for a person across payers and time	
	pc025_claim_status_cd	Claim status. P (Paid), D (Denied), C - (MCO/CCO encounter) E (other)	
	pc003_insurance_product_type_cd	A code that indicates an insurance coverage type	
	orphan_fl	Identifies orphan claim with no corresponding eligibility for the date of service. 1 (Yes), 0 (No)	
	Suppressed_Fl	1 (denied claim line), 0 (other than denied)	
	RemovedReversal_Fl	1 (claims not included before release 13 because the charge, paid amount, and allowed amounts are zero or zero when summed across claim lines and after the removal of denied claim lines, 0 (otherwise)	

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	pc025_claim_status_cd	Claim status. P - Paid,C - CCO encounter, E - other	Needed to determine the cost of care to study whether access to school-based services leads to cost savings for Medicaid and other payers
yes	COB	Links claims based on uniquepersonID, date, pc_026_drug_cd, charged amount, and provider and identifies an event that could be either primary or secondary COB claim	Needed to correctly determine cost of care received
yes	pc001_payer_type	Payer reported payer type codes:(C) Carrier, (D) Medicaid, (G) Other government agency, (P) Pharmacy benefits manager, (T) Third-party administrator, (U) Unlicensed entity	Needed to determine payer type (to determine, for example, whether preventive services received in school-based settings lead to cost-savings for Medicaid or private payers or both)
yes	Claim_LOB	Payer line of business: 1 (Medicare), 2 (Medicaid), 3 (commercial, 0 (no line of business reported)	Needed to determine payer type (to determine, for example, whether preventive services received in school-based settings lead to cost-savings for Medicaid or private payers or both)
yes	self_insured_fl	Self Insured flag	Needed to identify children with no insurance as those children might be particularly likely to benefit from school-based services

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	pc048_prescribing_physician_npi	Identifier for the provider who prescribed the medication as assigned by the reporting entity. Can be linked to national provider ID in provider data	Needed to determine whether school based centers prescribe certain medications on site
yes	pc026_drug_cd	National Drug Code (NDC)	Needed to determine drug types, for example, whether a drug is a mental health drug, to determine whether a student had a mental health treatment history prior to gaining access to school-based services, or whether access to school-based services resulted in a new drug prescription
yes	pc028a_alt_refill_no	Alternate refill number	Needed to determine whether something is a new prescription or a refill, to determine whether school-based centers prescribe new medications on site
yes	pc034_days_supply_qty	Number of days that the drug will last if taken at the prescribed dose	Needed to determine whether a child with a prescribed medication is more likely to refill their medications on time if they have access to school-based services
yes	pc028_calc_refill_no	Processor's count of times prescription refilled	Needed to determine whether a child with a prescribed medication is more likely to refill their medications on time if they have access to school-based services

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	pc039_dispensing_fee_amt	Dispensing fee paid 0 if amt=0, blank if missing	Needed to determine cost of care to study whether access to school-based services leads to cost savings for Medicaid and other payers
yes	member paid amount claim	Deduplicated member paid amount for claim (sum of copayment, coinsurance and deductible or patient paid amt--whichever is larger)	Needed to determine cost of care to study whether access to school-based services leads to cost savings for Medicaid and other payers
yes	Payer paid amount claim	Deduplicated payment made by payer	Needed to determine cost of care to study whether access to school-based services leads to cost savings for Medicaid and other payers
yes	Total paid amount claim	Sum of member paid amount and payer paid amount for claim	Needed to determine cost of care to study whether access to school-based services leads to cost savings for Medicaid and other payers

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
The data elements highlighted in blue are provided in every data request	uid	A unique identifier that links to the row as submitted in the MM Intake File Layout. Used for linking tables/views	
	release_id	A value associated with the data release	
	year_Eligibility	Year of eligibility	
	month_Eligibility	Month of eligibility	
	dw_member_id	A unique identifier associated with a single plan and payer and assigned to all eligibility and claims records associated with a given individual for that plan/payer. An individual can have multiple member ids for a payer because they can have multiple plans.	
	uniquepersonID	A unique identifier for a person across payers and time	
	me003_insurance_product_type_cd	A code that indicates an insurance coverage type	
	me018_medical_coverage_flag	Medical Coverage Flag not required when ME001=E	
	me019_prescription_drug_coverage_flag	Prescription Drug coverage flag	
	me207_dental_coverage_flag	Flag indicates dental coverage for the month	
	member_state	People with Medicaid coverage and people with Medicare coverage reported by the Centers for Medicare & Medicaid Services are Oregon residents regardless of reported address	

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	Month_Start	Date of Eligibility set to the first of the month	Needed to determine when children became eligible for Medicaid-reimbursable school-based services, whether there was a gap in coverage that could affect the amount of care received, etc.
yes	Me005a_plan_term_dt	Plan termination date	Needed to determine when children became eligible for Medicaid-reimbursable school-based services, whether there was a gap in coverage that could affect the amount of care received, etc.
yes	LOB	Payer line of business: 1 (Medicare), 2 (Medicaid), 3 (commercial, 0 (no line of business reported)	Needed to determine payer type (to determine, for example, whether preventive services received in school-based settings lead to cost-savings for Medicaid or private payers or both)
yes	RXnomedicalMM	Pharmacy coverage and no medical coverage during same year, month	Needed to determine when children became eligible for Medicaid-reimbursable school-based services, whether there was a gap in coverage that could affect the amount of care received, etc.

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	DentalnomedicalMM	Dental coverage and no medical coverage during same year, month	Needed to determine when children became eligible for Medicaid-reimbursable school-based services, whether there was a gap in coverage that could affect the amount of care received, etc.
yes	me009a_pebb_flag	Public Employees Benefit Board covered members Oregon includes out-of-state residents	Needed to determine when children became eligible for Medicaid-reimbursable school-based services, whether there was a gap in coverage that could affect the amount of care received, etc.
yes	me009b_oebb_flag	Oregon Educators Benefit Board covered members Oregon includes out-of-state residents	Needed to determine when children became eligible for Medicaid-reimbursable school-based services, whether there was a gap in coverage that could affect the amount of care received, etc.
yes	me013_member_gender_cd	Member Gender:M (male), F (female), and U (unknown)	Needed to study whether certain demographic groups of students were more likely to benefit from school-based services
yes	me009d_omip_flag	Flag indicates Oregon Medical Insurance Pool (OMIP) coverage for the month	Needed to determine eligibility for ceratin services, and whether certain demographic groups of children were more likely to benefit from school-based services

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	me009e_hkc_flag	Flag indicates Healthy Kids Connect Plan for the month	Needed to determine eligibility for ceratin services, and whether certain demographic groups of children were more likely to benefit from school-based services
yes	me203_metal_tier	Health benefit plan metal tier for qualified health plans (QHPs) and catastrophic plans as defined in the ACA:0 (Not a QHP or catastrophic plan), 1 (catastrophic), 2 (bronze), 3 (silver), 4 (gold), 5 (platinum)	Needed to determine eligibility for ceratin services, and whether certain demographic groups of children were more likely to benefit from school-based services
yes	me205_high_deductible_health_flag	High Deductible Health Plan Flag	Needed to determine eligibility for ceratin services, and whether certain demographic groups of children were more likely to benefit from school-based services
Data elements that are frequently denied			
yes	me014_member_dob	Member date of birth	Only quarter of birth is needed to determine eligiblity for services
yes	me017_member_zip	Zip code-from the date of eligibility	5-digit zip codes of residence are needed to link individuals to school districts and local socio-economic and demographic covariates at the 5-digit zip code level. Data from zip codes with small populations (for example, less than 5,000 people) will be aggregated to the 3-digit zip code level.

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
Provided in every data request	release_id	A value associated with the data release	
yes	dw_provider_id	A unique identifier associated with a unique provider across plans and payers	Needed to link all school-based claims to a school-based center
yes	provider_entity	Provider entitiy-1) Individual or 2) organization	Multiple individuals might be submitting claims on behalf of an organization such as a school-based center; this varibale will help us identify such cases quickly and combine them at the facility level.
yes	license_1	Provider state license code number 1	Needed to determine whether children in each school-based center have access to licensed clinicians (if this variable has a non-missing value then it indicates that the provider has a license)
yes	license_state_1	State where provider license number 1 was granted	Needed to determine whether children in each school-based center have access to licensed clinicians (if this variable has a non-missing value then it indicates that the provider has a license)
yes	Provider_Org_Nm	Name of provider's organization	Needed to identify school-based claims that might have a missing place of service code

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	primary_zip	Provider location zip (attending, billing, pharmacy)	Needed to identify school-based centers so that each center can be linked with information on the number of years the facility was open
yes	Credential_Text_1	Provider NPI credential 1	Needed to determine whether clinicians providing services at school-based centers have credentials similar to those of clinicians who provide care in other settings
yes	Credential_Text_2	Provider NPI credential 2	Needed to determine whether clinicians providing services at school-based centers have credentials similar to those of clinicians who provide care in other settings
yes	Credential_Text_3	Provider NPI credential 3	Needed to determine whether clinicians providing services at school-based centers have credentials similar to those of clinicians who provide care in other settings
yes	Taxonomy_Cd_1	NUCC provider taxonomy for the billing provider; NPI if not reported	This variable is used in addition to the place of service code to identify school-based claims
yes	Taxonomy_Cd_2	NUCC provider taxonomy for the billing provider; NPI if not reported	This variable is used in addition to the place of service code to identify school-based claims

Field Requested	Data Element	Description	Justification (Please provide reason needed and minimum necessary for project)
yes	Taxonomy_Cd_3	NUCC provider taxonomy for the billing provider; NPI if not reported	This variable is used in addition to the place of service code to identify school-based claims
yes	Taxonomy_Cd_4	NUCC provider taxonomy for the billing provider; NPI if not reported	This variable is used in addition to the place of service code to identify school-based claims
yes	Taxonomy_Cd_5	NUCC provider taxonomy for the billing provider; NPI if not reported	This variable is used in addition to the place of service code to identify school-based claims
yes	Taxonomy_grouping	Code that indicates provider specialty or taxonomy 1	This variable is used in addition to the place of service code to identify school-based claims
yes	Taxonomy_classification	Taxonomy classification	This variable is used in addition to the place of service code to identify school-based claims
yes	Taxonomy_specialization	Taxonomy specialization	This variable is used in addition to the place of service code to identify school-based claims
yes	Addr_ZIP	ZIP Code of provider - may include non-US codes	Needed because billing provider 5-digit zip code might be the zip code for the school district headquarters and not necessarily for where the school-based health center is located
yes	county name	Name of county	Needed to confirm that we identified the correct number of school-based centers, by county

To be requested	BIRTH FILE LAYOUT (2008-present)				
yes	1	bdobyear	A4	Year of birth	4-digit year
yes	7	bdobmonth	A2	Month of birth	01-12; 99=Unknown
yes	11	bbweight	A4	Birthweight (in grams)	0000-9998; 9999=unknown
yes	12	bmom_marn	A1	Mother married (at conception, birth, or any time in between)?	Y=Yes N=No O=ORDP U=Unknown
yes	14	bmomagenum	A2	Mother's age	10-60, 99=Unknown
yes	15	bmomeduc	A1	Mother's education	1=8th grade or less 2=9th-12th grade (no diploma) 3=High school graduate/GED 4=Some college (no degree) 5=Associate degree 6=Bachelor's degree 7=Master's degree 8=Doctorate or professional degree 9=Unknown
yes	23	bmomethnicmex	A1	Mother's Hispanic origin: Mexican	H=Yes; N=No; U=Unknown
yes	24	bmomethnicpr	A1	Mother's Hispanic origin: Puerto Rican	H=Yes; N=No; U=Unknown
yes	25	bmomethniccuban	A1	Mother's Hispanic origin: Cuban	H=Yes; N=No; U=Unknown
yes	26	bmomethnicoth	A1	Mother's Hispanic origin: Other	H=Yes; N=No; U=Unknown
yes	27	bmomracewh	A1	Mother's race: White	Y=Yes; N=No; U=Unknown
yes	28	bmomracebl	A1	Mother's race: Black	Y=Yes; N=No; U=Unknown
yes	29	bmomraceaian	A1	Mother's race: American Indian or Alaska Native	Y=Yes; N=No; U=Unknown
yes	30	bmomraceasianind	A1	Mother's race: Asian Indian	Y=Yes; N=No; U=Unknown
yes	31	bmomracech	A1	Mother's race: Chinese	Y=Yes; N=No; U=Unknown
yes	32	bmomracefi	A1	Mother's race: Filipino	Y=Yes; N=No; U=Unknown
yes	33	bmomracejp	A1	Mother's race: Japanese	Y=Yes; N=No; U=Unknown
yes	34	bmomracekor	A1	Mother's race: Korean	Y=Yes; N=No; U=Unknown
yes	35	bmomracevt	A1	Mother's race: Vietnamese	Y=Yes; N=No; U=Unknown
yes	36	bmomraceoasian	A1	Mother's race: Other Asian	Y=Yes; N=No; U=Unknown
yes	37	bmomracenh	A1	Mother's race: Native Hawaiian	Y=Yes; N=No; U=Unknown
yes	38	bmomracegu	A1	Mother's race: Guamanian or Chamorro	Y=Yes; N=No; U=Unknown
yes	39	bmomracesm	A1	Mother's race: Samoan	Y=Yes; N=No; U=Unknown
yes	40	bmomraceopi	A1	Mother's race: Other Pacific Islander	Y=Yes; N=No; U=Unknown
yes	41	bmomraceospf	A1	Mother's race: Other	Y=Yes; N=No; U=Unknown

To be requested	BIRTH FILE LAYOUT (2008-present)				
yes	42	bmomhispoc	A3	Mother's Hispanic origin code	See Appendix D (https://www.cdc.gov/nchs/data/dvs/appendix_d_accessible_hispanic_origin_code_list_update_2011.pdf)
yes	43	bmomhispos	A3	Mother's Other Hispanic literal code	See Appendix D
yes	52	bmomracebrg	A3	Mother's race: Bridged code	Use for trend with older years single choice 01 White 11 Nat Hawaiian 02 Black 12 Guam 03 Amer. Indian 13 Samoan 04 Asian Indian 14 Other Pac.Is. 05 Chinese 15 Other 06 Filipino Bridged multiple: 07 Japanese 21 White 08 Korean 22 Black 09 Vietnamese 23 Am Ind 10 Other Asian 24 Asian / PI
yes	53	bdadagenum	A2	Father's age	08-98; 99=Unknown
yes	54	bdadeduc	A1	Father's education	1=8th grade or less 2=9th-12th grade (no diploma) 3=High school graduate/GED 4=Some college (no degree) 5=Associate degree 6=Bachelor's degree 7=Master's degree 8=Doctorate or professional degree 9=Unknown
yes	55	bdadethnicmex	A1	Father's Hispanic origin: Mexican	H=Yes; N=No; U=Unknown
yes	56	bdadethnicpr	A1	Father's Hispanic origin: Puerto Rican	H=Yes; N=No; U=Unknown
yes	57	bdadethniccuban	A1	Father's Hispanic origin: Cuban	H=Yes; N=No; U=Unknown
yes	58	bdadethnicoth	A1	Father's Hispanic origin: Other	H=Yes; N=No; U=Unknown
yes	59	bdadracewh	A1	Father's race: White	Y=Yes; N=No; U=Unknown
yes	60	bdadracebl	A1	Father's race: Black	Y=Yes; N=No; U=Unknown
yes	61	bdadraceaian	A1	Father's race: American Indian or Alaska Native	Y=Yes; N=No; U=Unknown
yes	62	bdadraceasianind	A1	Father's race: Asian Indian	Y=Yes; N=No; U=Unknown
yes	63	bdadracech	A1	Father's race: Chinese	Y=Yes; N=No; U=Unknown
yes	64	bdadracefi	A1	Father's race: Filipino	Y=Yes; N=No; U=Unknown
yes	65	bdadracejp	A1	Father's race: Japanese	Y=Yes; N=No; U=Unknown
yes	66	bdadracekor	A1	Father's race: Korean	Y=Yes; N=No; U=Unknown

To be requested	BIRTH FILE LAYOUT (2008-present)				
yes	67	bdadracevt	A1	Father's race: Vietnamese	Y=Yes; N=No; U=Unknown
yes	68	bdadraceoasian	A1	Father's race: Other Asian	Y=Yes; N=No; U=Unknown
yes	69	bdadracenh	A1	Father's race: Native Hawaiian	Y=Yes; N=No; U=Unknown
yes	70	bdadracegu	A1	Father's race: Guamanian or Chamorro	Y=Yes; N=No; U=Unknown
yes	71	bdadracesm	A1	Father's race: Samoan	Y=Yes; N=No; U=Unknown
yes	72	bdadraceopi	A1	Father's race: Other Pacific Islander	Y=Yes; N=No; U=Unknown
yes	73	bdadraceospf	A1	Father's race: Other	Y=Yes; N=No; U=Unknown
yes	74	bdadhispoc	A3	Father's Hispanic origin code	See Appendix D (https://www.cdc.gov/nchs/data/dvs/appendix_d_accessible_hispanic_origin_code_list_update_2011.pdf)
yes	75	bdadhispos	A3	Father's Other Hispanic literal code	See Appendix D
yes	84	bdadracebrg	A3	Father's race: Bridged code	Use for trend with older years single choice 01 White 11 Nat Hawaiian 02 Black 12 Guam 03 Amer. Indian 13 Samoan 04 Asian Indian 14 Other Pac.Is. 05 Chinese 15 Other 06 Filipino Bridged multiple: 07 Japanese 21 White 08 Korean 22 Black 09 Vietnamese 23 Am Ind 10 Other Asian 24 Asian / PI
yes	85	bwic	A1	Did mother get WIC food for herself?	Y=Yes; N=No; U=Unknown
yes	106	bpaydel	A1	Principal source of payment for this delivery	1=Medicaid/OHP 2=Private insurance 3=Self pay 4=Indian Health Service 5=CHAMPUS/Tricare 6=Other government 8=Other 9=Unknown
yes	112	bdofpyr	A4	Year of first prenatal care visit	4-digit year 8888=No prenatal care 9999=Unknown prenatal care
yes	113	bdofpmo	A2	Month of first prenatal care visit	01-12; 88=None; 99=Unknown
yes	121	bnumvisits	A2	Number of prenatal visits	00-98, 99=Unknown
yes	122	border	A2	Birth order	00-98, 99=Unknown

To be requested	BIRTH FILE LAYOUT (2008-present)				
yes	145	brf_noa	A1	Risk factors: No risk factors	Y=Yes; N=No
yes	192	bplur	A2	Plurality	1-16; 99=Unknown 1=Singleton 2=Twin 3=Triplet etc.
yes	194	bliveb	A2	Number born alive in this pregnancy	1-16, 99=Unknown Blank=Singleton
yes	196	bcnb_aven1	A1	Conditions of newborn: Assisted ventilation	Y=Yes; N=No
yes	197	bcnb_aven6	A1	Conditions of newborn: Assisted ventilation (6+ hrs)	Y=Yes; N=No
yes	198	bcnb_nicu	A1	Conditions of newborn: Admission to NICU	Y=Yes; N=No
yes	199	bcnb_surf	A1	Conditions of newborn: Surfactant therapy	Y=Yes; N=No
yes	200	bcnb_anti	A1	Conditions of newborn: Antibiotics	Y=Yes; N=No
yes	201	bcnb_seiz	A1	Conditions of newborn: Seizure	Y=Yes; N=No
yes	203	bcnb_noa54	A1	Conditions of newborn: None	Y=Yes; N=No
yes	204	bca_anen	A1	Congenital anomalies: Anencephaly	Y=Yes; N=No
yes	205	bca_mnsb	A1	Congenital anomalies: Spina bifida	Y=Yes; N=No
yes	206	bca_cchd	A1	Congenital anomalies: Heart disease	Y=Yes; N=No
yes	207	bca_cdh	A1	Congenital anomalies: Hernia	Y=Yes; N=No
yes	208	bca_omph	A1	Congenital anomalies: Omphalocele	Y=Yes; N=No
yes	209	bca_gast	A1	Congenital anomalies: Gastroschisis	Y=Yes; N=No
yes	210	bca_limb	A1	Congenital anomalies: Limb reduction defect	Y=Yes; N=No
yes	211	bca_cl	A1	Congenital anomalies: Cleft lip	Y=Yes; N=No
yes	212	bca_p	A1	Congenital anomalies: Cleft palate alone	Y=Yes; N=No
yes	213	bca_downunk	A1	Congenital anomalies: Down syndrome, karyotype unknown	Y=Yes; N=No
yes	214	bca_downc	A1	Congenital anomalies: Down syndrome, karyotype confirmed	Y=Yes; N=No
yes	215	bca_downp	A1	Congenital anomalies: Down syndrome, karyotype pending	Y=Yes; N=No
yes	216	bca_cdic	A1	Congenital anomalies: Chromosomal disorder, karyotype confirmed	Y=Yes; N=No
yes	217	bca_cdip	A1	Congenital anomalies: Chromosomal disorder, karyotype pending	Y=Yes; N=No
yes	218	bca_cdiunk	A1	Congenital anomalies: Chromosomal disorder, karyotype unknown	Y=Yes; N=No
yes	219	bca_hypo	A1	Congenital anomalies: Hypospadias	Y=Yes; N=No

To be requested	BIRTH FILE LAYOUT (2008-present)				
yes	220	bca_noa55	A1	Congenital anomalies: None of the above	Y=Yes; N=No
yes	335	bmomHomeLang1	A50	Mother's REALD: Language used at home 1	Text
yes	336	bmomHomeLang2	A50	Mother's REALD: Language used at home 2	Text
yes	337	bmomSpokLang1	A50	Mother's REALD: Preferred spoken language 1	Text
yes	338	bmomWritLang1	A50	Mother's REALD: Preferred written language 1	Text
yes	339	bmomENG	F2.0	Mother's REALD: How well do you speak English?	1 = Not at all 2 = Not well 3 = Well 4 = Very well 95 = Not asked (skip logic) 96 = Did not answer 98 = Don't want to answer 99 = Don't know
yes	414	bdadHomeLang1	A50	Father's REALD: Language used at home 1	Text
yes	415	bdadHomeLang2	A50	Father's REALD: Language used at home 2	Text
yes	416	bdadSpokLang1	A50	Father's REALD: Preferred spoken language 1	Text
yes	417	bdadWritLang1	A50	Father's REALD: Preferred written language 1	Text
yes	418	bdadENG	F2.0	Father's REALD: How well do you speak English?	1 = Not at all 2 = Not well 3 = Well 4 = Very well 95 = Not asked (skip logic) 96 = Did not answer 98 = Don't want to answer 99 = Don't know

New or Amended APAC Data Request Review (custom or OHA Business Associate)

Staff Reviewer: Oliver

DRTS Number: 6398

Date review completed: 12/1/2025

	Yes	No	N/A	Need more information
Is this a new APAC request?	X			
New Request (skip to next section if amendment):				
1.1 Project staff contact information provided	X			
1.2 Project technical staff information provided	X			
2.1 Project summary provided with adequate detail to identify a specific unambiguous project	X			Impact of SBHCs on disparities in healthcare access and utilization
2.2 Research questions provided with adequate detail	X			Application attachment provides excellent detail
2.3 Described planned products and reports derived from requested data	X			Journal publications
2.4 Project begin and end date provided	X			Begin and end date will need to be revised
2.5 Acknowledgement that APAC data cannot be reused beyond the DUA	X			
2.5 Acknowledgement that data cannot be shared beyond the DUA	X			
3.1ab Data request purpose box checked & description	X			Research
3.2 Checked box for level of data identifiers	X			Limited
3.3 IRB application, approval memo, end date	X			IRB application, protocol, and approval memo received
4.1 Completed data elements workbook	X			
4.2 Adequately described how the data elements requested are the minimum necessary	X			Requester sent a spreadsheet with details on ~75 variables and flags that they will construct. Requested data elements align with this
5.1 Plan provided to prevent re-identification	X			Cell suppression, aggregation, and only presenting summary data and regression coefficients
5.2ab Plan to link APAC data to other data source	X			Vital stats
5.2c Requests OHA to link APAC to other data	X			Princeton's school data (SES and demographics), AHRQ SoDH data, other SES and demographic data sets
5.2d Detailed data linking plan provided			X	APAC will provide vital stats crosswalk and link other data sets internally

5.3 Provided adequate description of data management, security and data destruction plan	**X**			We have worked with other Princeton researchers and their data security is well documented.
Passes Minimum Necessary Review	**X**			Data elements are well justified. Requester sent a spreadsheet describing in great detail how new fields will be calculated with the requested data elements.
Recommend management approval	**X**			