OHIO

ORAL HEALTH SURVEILLANCE PLAN 2021-2025

OCTOBER 2020

Ohio Department of Health

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INTRODUCTION

The Purpose of Public Health Surveillance

The 1988 Institute of Medicine (IOM) report on the future of public health outlines three core functions for public health: assessment, policy development and assurance [IOM]. In that report (updated in 2003), the IOM recommended that every public health agency regularly and systematically collect, assemble, analyze, and disseminate information on community health status to carry out the assessment function. Public health agencies accomplish this task through public health surveillance -- the ongoing, systematic collection, analysis and interpretation of health data [Teutsch]. Surveillance is essential for planning, implementing, and evaluating public health practice and, ideally, is closely integrated with data dissemination to public health decision makers and other stakeholders [Hall]. The overarching purpose of public health surveillance is to provide ***actionable health information to guide public health policy and programs*** [Smith].

Framework for a State Oral Health Surveillance System

According to the Council of State and Territorial Epidemiologists (CSTE), a state oral health surveillance system (OHSS) should provide information necessary for public health decision making by routinely collecting data on oral health outcomes, access to care, risk factors and intervention strategies for the whole population, representative samples of the population, or priority subpopulations. In addition, a state OHSS should consider collecting information on the oral health workforce, infrastructure, financing, and policies impacting oral health outcomes. A state OHSS can access data from existing sources, supplemented by additional information, such as data from a Basic Screening Survey, to fill data gaps [Phipps].

Surveillance systems are not just data collection systems. They must include mechanisms to 1) communicate findings to those responsible for programmatic and policy decisions and to the public, and 2) assure data are used to inform and evaluate public health measures to prevent and control oral diseases and conditions. According to the Association of State and Territorial Dental Directors' *Best Practice Report on State Based Oral Health Surveillance Systems*, a state oral health surveillance system should (1) have an oral health surveillance plan, (2) define a clear purpose and objectives relating to the use of surveillance data for public health action, (3) include a core set of measures/indicators to serve as benchmarks for assessing progress in achieving good oral health, (4) analyze trends, (5) communicate surveillance data to decision makers and the public in a timely manner, and (6) strive to assure that surveillance data is used to improve the oral health of state residents [ASTDD].

Operational Definition for a State Oral Health Surveillance System

In 2013, CSTE developed an operational definition of an oral health surveillance system, which contained a core or foundational set of surveillance elements. A state is considered to have an oral health surveillance system if they have ***all of the following ten items*** [Phipps].

- A written oral health surveillance plan that was developed or updated within the previous five years.
- Oral health status data for a representative sample of third grade children, including prevalence of caries experience, untreated tooth decay, and dental sealants on permanent molars meeting criteria for inclusion in the National Oral Health Surveillance System (NOHSS). Data must have been collected within the previous five years.
- Permanent tooth loss data for adults obtained within the previous two years.
- Annual data on the incidence of and mortality from cancers of the oral cavity and pharynx.
- Annual data on the percent of Medicaid- and CHIP-enrolled children who had a dental visit within the past year.
- Data on the percent of children 1-17 years who had a dental visit within the past year, obtained every four years.
- Data on the percent of adults (≥18 years) and adults with diabetes who had a dental visit within the past year, obtained within the previous two years.
- Data on the fluoridation status of public water systems within the state, updated every two years.
- Annual data on state oral health programs and the environment in which they operate, including workforce and infrastructure indicators.
- Publicly available, actionable data to guide public health policy and programs disseminated in a timely manner. This may take the form of an oral disease burden document, publicly available reports, or a web-based interface providing information on the oral health of the state's population developed or updated within the previous five years.

THE OHIO ORAL HEALTH SURVEILLANCE SYSTEM

Purpose

The purpose of the Ohio Oral Health Surveillance System (OOHSS) is to provide a consistent source of updated reliable and valid information for use in developing, implementing, and evaluating programs to improve the oral health of Ohio's residents. Assessment is the key objective of Ohio's public health efforts to address the nature and extent of oral diseases and their risk factors by collecting, analyzing, interpreting, and disseminating oral health data. These activities provide a mechanism to routinely monitor state-specific oral health data and the impact of interventions within specific priority populations over time. Continual assessment and evaluation support development of oral health programs and policies, hence a surveillance system is a critical requirement for the oral health program.

Historical Perspective

The Oral Health Program (OHP), Ohio Department of Health (ODH) has a rich history in data collection and analysis to support its core public health functions of assessment, assurance and policy development. For example, in the mid-1980's, the OHP conducted a comprehensive needs assessment on the use of dental sealants in the state in order to develop a plan for increasing the number of children in the state with dental sealants. In 1988, the OHP conducted its first statewide open-mouth screening survey of students in elementary schools to measure the extent of untreated tooth decay, the prevalence of dental sealants and the need for dental care. During the years since, the OHP has conducted seven additional open-mouth screening surveys of school-aged children as well as surveys of specials populations (e.g., preschool-age children, migrant farmworkers and adults who are homeless.)

The OHP has served as a national leader in the development of needs assessment methods and tools for use by other state dental programs. In 1994, the OHP received funding from the Association of State and Territorial Dental Directors (ASTDD) to develop a comprehensive model for conducting state and local oral health needs assessments [ASTDD 7-Step Model]. The model included methodology for conducting open mouth oral health screening surveys, which served as the basis for the subsequent development in 1999 by the OHP and ASTDD of the Basic Screening Survey (BSS) methodology [Basic Screening Surveys]. The BSS methodology is considered the "gold standard" in conducting open mouth surveys by state dental programs, and has been employed by the OHP in its surveys.

Dissemination of results of OHP needs assessments has involved several approaches over the years, including publishing manuscripts in peer-reviewed journals, printing topic-specific reports for distribution to interested parties, and more recently, using the OHP website to share information.

The ASTDD defines public health surveillance as "the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health

action to reduce morbidity and mortality and to improve health" [The Basic Screening Survey]. Data disseminated by a public health surveillance system can be used for immediate public health action, program planning and evaluation, and formulating research hypotheses. The purpose of this document is to describe in detail the components of the OHP's surveillance efforts and lay out a timetable for surveillance activities during the next five years, keeping in mind this broad definition of surveillance.

Mission and Goals of the Oral Health Program

The mission of the OHP is to promote and improve the oral health of all Ohioans. The OHP has five approaches to support this mission:

- Support programs that prevent oral diseases, such as community water fluoridation and school-based sealant programs.
- Work to help Ohioans of all ages get the dental care they need.
- Monitor the oral health of Ohioans through collecting, analyzing and sharing oral health data.
- Help other health professionals, such as physicians and nurses, improve the oral health of their patients.
- Work to ensure that oral health is seen as an essential part of health.

Objectives of the Ohio Oral Health Surveillance System

The ability to make progress toward reaching OHP goals is heavily dependent on the availability of quality oral health data and its careful analysis. The objectives of the OOHSS are:

1. Estimate the extent and severity of oral disease and risk factors in Ohio.
2. Measure utilization of oral health services in Ohio.
3. Monitor utilization and effectiveness of community-based and school-based oral health prevention programs.
4. Identify populations at high risk of oral disease and the unmet needs of these populations.
5. Provide current, scientific and reliable data for the state.
6. Use oral health data to plan, implement, and evaluate the impact of Ohio's oral health programs and policies.
7. Provide information for decision making and public health resource allocations.
8. Evaluate Ohio's strengths and gaps in surveillance measurements and in surveillance of priority populations and identify opportunities to improve the OOHSS.

Oral Health Indicators

The indicators that form the framework of the OOHSS include the full set of indicators outlined in the Council of State and Territorial Epidemiologists operational definition of an oral health surveillance system [Phipps]. The OOHSS also includes a subset of oral health indicators approved by CSTE for inclusion in NOHSS. The CSTE-approved indicators are being used because CSTE is the organization responsible for defining and recommending which diseases and conditions should be reportable within

states and which should be voluntarily reported to the Centers for Disease Control and Prevention (CDC).

For a public health surveillance system to be effective and responsive, it must adapt to new health challenges and data sources. Consequently, the indicators included in the OOHSS may change during the 5-year time frame outlined by this plan. The indicators currently included in the OOHSS are outlined in Table 1. The OHP currently collects data on most of the recommended indicators listed in Table 1 (those in bold font). Two recommended indicators are not *currently* being collected: parent's self-report of child's oral health/oral health problems and topical fluoride programs. "Parent's self-report of child's oral health/oral health problems" is an indicator that can easily be added to the OOHSS; however, the OHP does not operate any topical fluoride programs as of June 2020 so this indicator will not be reported. Table 2 provides a list of these indicators with their data sources, and each is described in detail starting on page 8.

Table 1: Indicators Included in the Ohio Oral Health Surveillance System by Domain and Age Group

<table>
<tr><th>Domain</th><th>Preschool Children</th><th>School Children</th><th>Adults</th><th>Older Adults</th></tr>
<tr><td rowspan="2">Oral Health Outcomes</td><td rowspan="2"><u>Children served by Early Childhood Education Centers and Public Preschools</u>
Decay experience
Untreated tooth decay
Preventive and treatment services

<u>Head Start</u>
Dental home, untreated tooth decay, diagnostic, preventive and treatment services</td><td rowspan="2"><u>Third Grade</u>
Decay experience
Untreated tooth decay
Sealant prevalence</td><td><u>18-64 Years</u>
Any tooth loss</td><td><u>65+ Years</u>
6+ teeth lost
Complete tooth loss</td></tr>
<tr><td colspan="2"><u>All Ages</u>
Incidence of and mortality from cancers of the oral cavity and pharynx</td></tr>
<tr><td></td><td colspan="2"><u>1-17 Years*</u>
Parent's self-report of child's oral health, oral health problems</td><td colspan="2"></td></tr>
<tr><td>Access to Care</td><td colspan="2"><u>Medicaid/CHIP 0-20 years</u>
Dental visit</td><td colspan="2"><u>18+ Years</u>
Dental visit</td></tr>
<tr><td></td><td colspan="2"><u>1-17 Years*</u>
Dental visit & preventive dental visit</td><td colspan="2"><u>Adults 18+ Years with Diabetes</u>
Dental visit</td></tr>
<tr><td>Unmet Dental Needs</td><td colspan="2">0-18 years</td><td colspan="2">19+ years</td></tr>
<tr><td rowspan="3">Intervention Strategies</td><td></td><td>School-based or school-linked dental sealant programs</td><td colspan="2" rowspan="2"></td></tr>
<tr><td colspan="2">Topical fluoride programs</td></tr>
<tr><td colspan="3">Community water fluoridation</td></tr>
<tr><td>Workforce and Infrastructure</td><td colspan="4">Number of dental professionals
Number of safety net dental clinics
Dental Health Professional Shortage Areas</td></tr>
</table>

Blue cells: The core set of indicators recommended by CSTE for inclusion in a state OHSS
Green cells: Additional indicators that can be added by the state oral health program
* These indicators may be modified or deleted based on the redesign of the National Survey of Children's Health (NSCH)

Table 2: Data Sources for the Indicators Included in the Ohio Oral Health Surveillance System

Domain	Target Population	Indicator	Data Source
Oral Health Outcomes	Preschool-age	Caries experience	Ohio BSS
		Untreated tooth decay	Ohio BSS, Head Start PIR

	Head Start	Diagnostic, preventive and treatment services	Head Start PIR
	Third Grade	Caries experience	Ohio BSS
		Untreated tooth decay	Ohio BSS
		Sealant prevalence	Ohio BSS
	1-17 Years	Parent's self-report of child's oral health*	NSCH
		Oral health problem in last year*	NSCH
	18-64 Years	Any tooth loss	BRFSS
	65+ Years	6+ teeth lost	BRFSS
		Complete tooth loss	BRFSS
	All Ages	Incidence of and mortality from cancers of the oral cavity and pharynx	OCISS, ODH Vital Stats
Access to Care	Medicaid/CHIP	Dental visit	CMS-416
	1-17 Years	Dental visit*	NSCH
		Preventive dental visit*	NSCH
	18+ Years	Dental visit	BRFSS
	Adults with Diabetes	Dental visit	BRFSS
Unmet Dental Needs	All Ages	Unmet dental needs	OMAS
Intervention Strategies	All Ages	Community water fluoridation	WFRS
	School Children	School dental sealant programs	Ohio OHP
Workforce & Infrastructure	Dental Professionals	Number of dental professionals	OSDB
	Low-income Communities	Number of safety net dental clinics	Ohio OHP
		Dental Health Professional Shortage Areas	ODH Primary Care

* May be modified depending on the redesign of NSCH

Data Sources and Data Collection Timeline

Most of the indicators in the OOHSS are available from existing ongoing data sources. Indicators that require primary data collection are: (1) the prevalence of decay experience and untreated decay in preschool-aged and third-grade children; (2) the prevalence of dental sealants in third-grade children; (3) the number of school-based dental sealant programs; and (4) the number of safety-net dental programs.

Information on the oral health status of preschool-aged and third-grade schoolchildren are obtained using the ASTDD Basic Screening Survey (BSS) protocol. Ohio's *Make Your Smile Count!* BSS is the primary means by which the OHP monitors the oral health of Ohio's children. State-level data for third-grade schoolchildren are collected approximately every five years; county-level, every ten years. Data on the oral health status of preschool-aged children are collected every ten years. Typically, a stratified cluster sample of sites is drawn (early education centers and public preschool programs for the preschool survey and public elementary schools for the third-grade survey), where sites are chosen within each a prescribed geographic region or county by probability proportional to size sampling. During the most recent third-grade BSS conducted during the 2017-19 school years, more than 3,200 students at 65 schools were screened.

Existing data sources that will be used for the other indicators include the following:

- **CDC Behavioral Risk Factor Surveillance System (BRFSS): indicators include tooth loss (complete and 6+ teeth) and dental visit among adults, older adults, and adults with diabetes**

The BRFSS is a nationwide random-digit dial telephone survey sponsored by the CDC that tracks health practices, health conditions and risk behaviors of adults 18 years and older in the United States. The BRFSS monitors the behaviors associated with major causes of preventable morbidity and mortality in the adult population of Ohio, e.g., cardiovascular disease, cancer, diabetes, and injuries. The BRFSS is the only source of data available on the oral health status of Ohio adults. While the BRFSS is conducted annually, questions related to oral health are only asked every two years. Oral health questions were most recently asked in 2018, and relate to two indicators:

- Length of time since the last visit to a dental office.
- Permanent teeth removed because of tooth decay or gum disease.

These indicators are analyzed by age, race, ethnicity, income, health insurance and geographic region of the state. In 2019, the OHP was successful in adding an optional module on the use of the emergency department for oral health problems. Those data are currently being analyzed.

- **CMS-416: Annual Early Periodic Screening, Diagnosis and Treatment (EPSDT) Program Participation Report: indicator includes dental visits among children eligible for Medicaid or CHIP**

  The Early and Periodic Screening, Diagnostic and Treatment (EPSDT) benefit provides comprehensive and preventive health care services for children under age 21 who are enrolled in Medicaid. EPSDT is key to ensuring that children and adolescents receive appropriate preventive, dental, mental health, developmental, and specialty services. The CMS-416 form is used by the Centers for Medicare and Medicaid Services (CMS) to collect basic information on State Medicaid and CHIP programs to assess the effectiveness of EPSDT services. At a minimum, dental services include relief of pain and infections, restoration of teeth, and maintenance of dental health.

- **Ohio State Dental Board (OSDB): indicator includes number of dental professionals**

  The OHP accesses information about the oral health workforce in the state from the OSDB. This includes the number of licensed dentists, dental hygienists, dentist assistance radiographers, expanded function dental auxiliary, and those with an oral health access supervision.

- **ODH Office of Primary Care: indicator includes number and location of Dental Health Professional Shortage Areas (Dental HPSAs)**

  Dental HPSAs are designated by the Health Resources and Services Administration (HRSA) upon review of applications submitted by the ODH Office of Primary Care (OPC). Dental HPSAs are areas that have been designated by the federal government via an application process as having an inadequate number of dentists to serve the population, or having financial, geographic, cultural or language barriers to receiving care. An entire county may be designated as a HPSA; but in some cases, only certain neighborhoods or census tracts in a city or a facility

(such as a prison or community health center), are designated. The OPC provides information on a periodic basis to the OHP, which maintains a list and creates a map depicting the location of dental HPSAs in the state.

- **Ohio Cancer Incidence Surveillance System (OCISS): indicator includes incidence of cancers of the oral cavity and pharynx**
  The OCISS is the central cancer registry for the State of Ohio and is managed through a partnership between the ODH and The Ohio State University Comprehensive Cancer Center--James Cancer Center and Solove Research Institute. The OCISS collects and analyzes cancer incidence data for all Ohio residents. Each physician, dentist, hospital or person providing diagnostic or treatment services to patients with cancer is required to report each case of cancer to the Ohio Cancer Incidence Surveillance System (OCISS) at ODH. The most recent county-level oral and pharyngeal cancer incidence data are for the years 2012-2016.

- **Ohio Cancer Mortality Report: indicator includes cancer mortality data**
  Data are provided by the ODH Bureau of Vital Statistics. The Bureau of Vital Statistics receives certificates of death from local vital statistics offices and from other states when an Ohio resident dies outside of Ohio. Cancer death data in this report are categorized by the primary underlying cause of death.

- **National Survey of Children's Health (NSCH): indicator includes oral health, oral health problems, dental visit, and preventive dental visit among children 1-17 years (may be modified or deleted based on the redesign of NSCH)**
  The National Survey of Children's Health (NSCH) provides data on multiple, intersecting aspects of children's lives—including physical and mental health, access to quality health care, and the child's family, neighborhood, school and social context.

- **Uniform Data System (UDS): indicator includes number of federally qualified health centers (FQHCs) with dental clinics**
  Each year, health center grantees and look-alikes report on their performance using the measures defined in the Uniform Data System (UDS). The UDS is a standardized reporting system that provides consistent information about health centers and look-alikes.

- **OHP: indicator includes number of safety net dental programs in Ohio (safety net clinics and programs that may or may not be FQHCs)**
  Safety net dental clinics provide dental care to people on Medicaid, and offer sliding-fees, reduced fees or free care to patients who don't have dental insurance or can't afford to pay a private dentist. The dental "safety net" includes public dental clinics, dental care provided to schoolchildren, and mobile/portable dental care programs (e.g., mobile dental vans). These

programs provide basic dental care such as exams, X-rays, fillings, extractions, root canals and dentures. The OHP maintains a directory of the safety net dental programs in the state.

- **Water Fluoridation Reporting System (WFRS): indicator includes population served by fluoridated water systems**
  WFRS is a water fluoridation monitoring data system for state and tribal water fluoridation program managers and oral health program directors or managers. Data from WFRS are summarized in the biennial report of national and state fluoridation statistics.

- **Youth Risk Behavior Survey (YRBS)/Youth Tobacco Survey (YTS): indicator includes recency of last dental visit**
  The YRBS/OYTS are voluntary self-administered, school-based surveys conducted by the ODH in conjunction with the CDC. The surveys have been conducted in tandem since 2019. The YRBS gathers information from middle and high school students on six categories of health-related behaviors that contribute to the leading causes of death and disability among youth. This survey includes the following oral health-related question: "When was the last time you saw a dentist for a check-up, tooth cleaning or other dental work?" This is the only measure of oral health that the State of Ohio directly collects on pre-teens and adolescents.

  The OYTS collects information on tobacco use and risk factors among Ohio teens in grades 6 through 12. It measures tobacco use, exposure to secondhand smoke, exposure to pro- and anti-tobacco media messages, knowledge and beliefs about tobacco use and future intent to use tobacco products.

- **Ohio Pregnancy Assessment Survey (OPAS): indicator includes recency of last dental visit before/during pregnancy**
  The OPAS is a population-based survey designed to examine maternal behaviors and experiences before, during and after a woman's pregnancy, and during the early infancy of her child.

- **Ohio Medicaid Assessment Survey (OMAS): indicator includes unmet dental need**
  The OMAS is a population-based survey that measures health care access, health status, and health care use for Ohio's current and potential future Medicaid participants. It is not conducted on a regular basis; the most recent data is from 2019.

- **Head Start Program Information Report (PIR): indicator includes preventive and treatment services**
  The Head Start PIR provides data for each Ohio Head Start program (including Migrant programs and some Early Head Start data) on the number of children who have received preventive oral health services and the number who need and receive treatment services.

Table 3 presents the timeframe for collecting these oral health indicators. Timeframes for primary data collection of the oral health status of preschool-age and third-grade schoolchildren are somewhat variable as those efforts are dependent on budgetary and staffing fluctuations.

Table 3: Timeline for Collecting Oral Health Indicator Data

Data Source	2021	2022	2023	2024	2025
BSS – 3rd Grade		Begin planning for 2023-2025 BSS	X	X	
BSS – Preschool					Begin planning for 2026 BSS
Head Start PIR	Possibly N/A	X	X	X	**X**
BRFSS	X		X		X
CMS-416	X	X	X	X	X
OSDB	X	X	X	X	X
ODH Primary Care Dental HPSAs	X	X	X	X	X
OCISS			X	X	X
Office of Vital Statistics			X	X	X
NSCH*		X			
UDS	X	X	X	X	X
Safety Net Programs	X	X	X	X	X
WFRS	X		X		X
YRBS/OYTS	X		X		X
OPAS	X	X	X	X	X
OMAS	2019 is most recent available data				

* May be modified depending on the redesign of NSCH

Data Dissemination and Use

Surveillance results will be disseminated to interested programs and policy makers at the local, state and national level through presentations, published reports and briefs. Presentations, reports and briefs will be used to increase awareness about oral diseases and their risk factors, monitor trends and disparities, develop new interventions, and expand existing programs.

Reports will contain current oral health data and trend data as available. Reports will be distributed electronically to partners within the health department and across the state and shared with other state oral health programs as well as CDC and ASTDD. Reports will be available electronically on the state website and, as funds will allow, a limited number will be printed for distribution at meetings.

Venues for presentation of surveillance results may include but are not limited to Oral Health Ohio (Ohio's statewide oral health coalition), the Ohio Dental Association annual meeting, the Ohio Dental Hygienists' Association annual meeting, the ASTDD/AAPHD co-sponsored National Oral Health

Conference, the CSTE annual meeting, MCH annual meetings, and the annual meeting of the Ohio Association of Community Health Centers (Ohio's primary care association).

Privacy and Confidentiality

The OHP is required to follow the ODH Directive on Data Stewardship that defines the procedures that must be followed in the collection, viewing, storing, exchanging, aggregating, analyzing and use of data. The directive has particular relevance to the statewide BSS of preschool-age and third-grade students that the OHP conducts approximately every five years. The protocol for these surveys is submitted to the ODH Internal Review Board for approval. All persons who have access to the data either by conducting the screenings or reviewing and analyzing the data are required to sign an ODH Data Users Confidentiality Agreement that outlines their responsibilities in safeguarding access to, and sharing of, the personally-identifying data on each child being screened. (ODH collects the name, age, birthdate, gender, ethnicity and race of each child being screened.) These agreements are kept on file at the OHP.

Consent forms for the BSS dental screening are required for children to participate. These forms are returned to schools in sealed envelopes that school staff are instructed to leave sealed. OHP staff or an OHP designee unseal the envelopes and assign matching code numbers to both the top portion of the consent forms (containing the consent/personal information for each child) and the bottom portion (containing the questionnaire, demographic information and screening results.)

Data from the bottom portion of the consent form are scanned/entered into a database. No personal information is entered into the computer database (other than date of birth/age, race, ethnicity and gender.) The top and bottom portions of the consent forms for each school are stored separately at the OHP Central Office in locked file cabinets. The top portion of the consent form is disposed of after the survey is completed, in accordance with ODH policy. The bottom portion is disposed of after the completion of data verification and analysis. The data files are kept for an indefinite period.

All survey personnel comply with Ohio H.B. 648, which became law in 2009. This bill increases restrictions on access to confidential personal information. Staff are required to document the children screened and/or data accessed, as applicable. When analyzing data by demographics, cell sizes containing less than 10 individuals are not reported. Data are only analyzed in the aggregate, i.e., data from all surveyed elementary schools are analyzed together.

Evaluation

The purpose of evaluating the OOHSS is to ensure that the oral health indicators are being monitored effectively and efficiently and to increase the utility and productivity of the system. An annual evaluation will be performed to determine the system's usefulness in monitoring oral health trends over time, determining the effectiveness of interventions, and planning future programmatic and policy initiatives. The evaluation of the OOHSS will focus on providing recommendations for improving

the quality, efficiency, and usefulness of the system. The OOHSS will also be evaluated to determine the system's sustainability, the timeliness of analysis of surveillance data, dissemination and use of the reports by stakeholders, and the surveillance system's impact on policy and legislative actions.

Acknowledgements

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