



November 2023

INDIAN HEALTH SERVICE

Many Federal
Facilities Are in Fair
or Poor Condition
and Better Data Are
Needed on Medical
Equipment

Why GAO Did This Study

IHS provides health care services directly to American Indian and Alaska Native populations at federally operated medical facilities. Well-functioning facilities and equipment are necessary for the provision of high quality and accessible services.

GAO was asked to review IHS's facilities and equipment and how they affect the provision of health care. This report reviews the state of IHS's federally operated medical facilities and equipment. It also describes IHS efforts to mitigate negative effects on patient care. GAO interviewed IHS officials from headquarters, three geographic areas, and 14 federally operated facilities, conducting site visits to 13 of these facilities. GAO also reviewed agency documents, including relevant policies, and IHS data on its facilities and equipment for the selected areas and facilities.

What GAO Recommends

GAO is making three recommendations to IHS, including that IHS should: assess the extent of medical equipment data problems across IHS areas and implement a plan to correct any problems; and regularly monitor adherence to IHS medical equipment inventory management policy requirements. IHS concurred with all three recommendations.

View [GAO-24-105723](#). For more information, contact Michelle B. Rosenberg at (202) 512-7114 or RosenbergM@gao.gov.

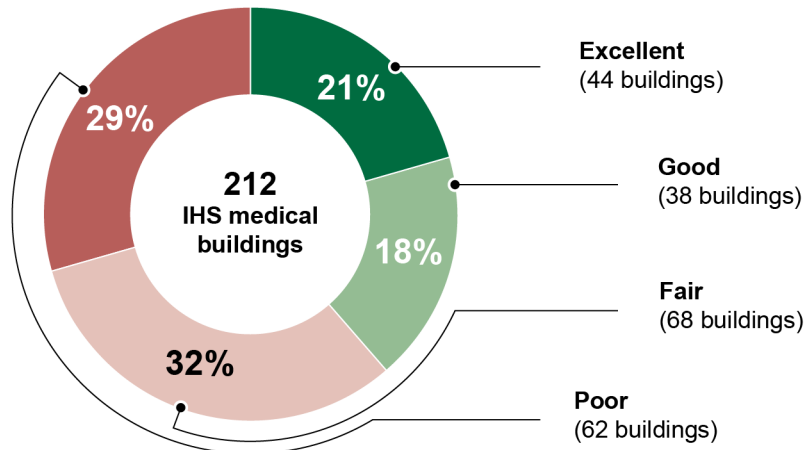
INDIAN HEALTH SERVICE

Many Federal Facilities Are in Fair or Poor Condition and Better Data Are Needed on Medical Equipment

What GAO Found

Indian Health Service (IHS) data show that the buildings that comprise its federally operated medical facilities range in age from 1 to 171 years, with a median age of 39 years. Of the 212 buildings that IHS has rated, about 61 percent are in fair or poor condition, compared to the goal of having 90 percent in good or excellent condition. According to IHS officials, older facilities may have insufficient space for modern health care delivery needs and outdated infrastructure that can fail and lead to facility closures. IHS officials also reported that funding constraints and other challenges, such as maintaining adequate staffing levels, limit their ability to repair and improve their medical facilities.

Condition of Indian Health Service Federally Operated Medical Buildings



Source: GAO analysis of Indian Health Service data. | GAO-24-105723

The state of medical equipment at IHS federally operated facilities cannot be determined because IHS does not have complete or reliable data. Although IHS policy requires its facilities to maintain medical equipment inventories in a designated system, GAO's review of data for three selected IHS areas found that not all facilities were doing so. Further, when equipment was recorded, the data, such as the installation date, were not always accurate. IHS leadership was not aware of these problems until GAO's review and does not know the extent to which similar problems may exist in the other seven IHS areas with federally operated facilities. Without complete or reliable medical equipment data, IHS cannot appropriately plan and budget for its equipment needs, putting its ability to deliver high quality health care at risk.

IHS officials reported using a number of strategies to help mitigate negative effects aging facilities and equipment may have on patient care, including transferring patients to other facilities. Despite these efforts, officials described ways their aging facilities and equipment can negatively affect patient care. For example, overcrowded waiting areas or facility deficiencies like uneven walkways can increase the risk of patient infections or injuries. Also, officials noted that broken medical equipment or having to refer patients to other facilities could lead to delays in care—potentially exacerbating patients' medical conditions.

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Abbreviations

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| CT | computed tomography |
| HHS | Department of Health and Human Services |
| IHS | Indian Health Service |

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November 8, 2023

The Honorable Cathy McMorris Rodgers
Chair
The Honorable Frank Pallone, Jr.
Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable Markwayne Mullin
United States Senate

The Honorable Raul Ruiz, M.D.
House of Representatives

The Indian Health Service (IHS), an agency within the Department of Health and Human Services (HHS), is responsible for providing health care for over 2.8 million American Indians and Alaska Natives who are members or descendants of federally recognized Tribes. IHS provides health care services to American Indians and Alaska Natives either directly through a system of federally operated facilities, or indirectly through facilities that are operated by Tribes or others.¹ IHS's federally operated medical facilities include hospitals and health centers as well as a range of other types of medical facilities, such as dental clinics and behavioral health facilities. IHS also provides some health care services remotely via telehealth.

IHS oversees its facilities through a decentralized system of 12 area offices. According to IHS, among other things, the headquarters office is responsible for ensuring the delivery of quality comprehensive health

¹In addition to federally operated facilities, some federally recognized Tribes choose to operate their own health care facilities and receive IHS funding. When services are unavailable at federally operated or tribally operated facilities, IHS may pay for services provided through private providers through its Purchased/Referred Care program. IHS also provides funding to nonprofit, urban Indian organizations through the Urban Indian Health program to provide health care services to American Indian and Alaska Native people living in urban areas. See 25 U.S.C. § 1653. We focused our review solely on IHS's federally operated medical facilities. We did not include facilities operated by Tribes or tribal organizations. Thus, unless otherwise noted, any mention of facilities refers to IHS's federally operated facilities.

services, and the area offices are responsible for monitoring facility operations.

Well-functioning facilities and medical equipment are necessary for the provision of high quality and accessible services. However, a 2016 HHS Office of Inspector General report found that more than half of IHS federally operated hospital administrators said that old or inadequate physical environments challenged their ability to provide quality care and maintain compliance with the Medicare hospital Conditions of Participation.² The report also cited threats to patient care and safety, such as operating room sewage leaks, inappropriate airflow and pressure in sterile rooms, and challenges in finding parts for aging equipment. Further, in 2021 an IHS official testified that medical equipment, which has an average useful life of 6 to 8 years, generally is used at least twice that long in its facilities.³

In 2016, we reported that IHS facility staff told us that aging infrastructure and equipment in federally operated facilities were obstacles to ensuring that patients have access to timely primary care.⁴ For example, we reported that IHS facility staff described working in outdated facilities with insufficient space to accommodate additional providers and with outdated medical equipment, such as analog mammography machines. We also reported in 2022 that physical infrastructure challenges—such as aging buildings, outdated design, and insufficient space—complicated IHS’s ability to provide routine health care and treat patients with COVID-19

²Department of Health and Human Services, Office of Inspector General, *Indian Health Service Hospitals: Longstanding Challenges Warrant Focused Attention to Support Quality Care*, OEI-06-14-00011 (Washington, D.C.: October 2016). Medicare Conditions of Participation are a set of minimum quality and safety standards that include maintaining a physical environment that avoids transmission of infections and communicable diseases. The Centers for Medicare & Medicaid Services and accreditation organizations such as The Joint Commission monitor IHS’s federally operated hospitals’ compliance with the Conditions of Participation through periodic onsite surveys. Surveyors observe how hospitals provided care to patients, and assess whether that care met the needs of the patients and was in compliance with all requirements. To indicate noncompliance, surveyors cite hospitals with deficiencies that hospitals must correct in a timely manner to continue participating in Medicare.

³See Randy Grinnell, Deputy Director for Management Operations, Indian Health Service, *Examining Federal Facilities in Indian Country*, testimony before the House Natural Resources Committee Subcommittee for the Indigenous Peoples of the United States, June 17, 2021.

⁴GAO, *Indian Health Service: Actions Needed to Improve Oversight of Patient Wait Times*, [GAO-16-333](#) (Washington, D.C.: Mar. 29, 2016).

during the pandemic.⁵ In February 2017, we added federal management of programs that serve Indian Tribes and their citizens to our High Risk List because inadequate oversight hindered IHS's ability to ensure that Indian communities have timely access to quality health care, among other reasons.⁶

You asked that we review issues related to IHS's aging facilities and equipment, and their effect on IHS's ability to provide quality health care to patients. In this report we:

1. describe the state of IHS's federally operated medical facilities and associated challenges,
2. examine the state of medical equipment at IHS federally operated facilities, and
3. describe IHS efforts to mitigate the negative effects aging facilities and equipment may have on patient care.

For all three objectives, we conducted interviews with officials at IHS headquarters and a non-generalizable sample of area offices and service units.⁷ Specifically, we interviewed officials from three of the 12 IHS area offices, and seven IHS service units, covering 14 facilities.⁸ We also

⁵GAO, *Indian Health Service: Relief Funding and Agency Response to COVID-19 Pandemic*, [GAO-22-104360](#) (Washington, D.C.: Mar. 31, 2022).

⁶See the most recent update about the status of this list at: GAO, *High-Risk Series: Efforts Made to Achieve Progress Need to Be Maintained and Expanded to Fully Address All Areas*, [GAO-23-106203](#) (Washington, D.C.: Apr. 20, 2023). The High Risk List is our list of federal programs and operations that are vulnerable to fraud, waste, abuse, and mismanagement, or need transformation.

⁷IHS is divided into 12 geographic areas. The 12 IHS areas are Alaska, Albuquerque, Bemidji, Billings, California, Great Plains, Nashville, Navajo, Oklahoma City, Phoenix, Portland, and Tucson. These areas are further subdivided into administrative entities called service units. Service units may contain one or more facility.

⁸We interviewed officials from the following three area offices and seven federally operated service units (in parentheses): Billings (Crow, Northern Cheyenne, and Wind River service units), Great Plains, (Pine Ridge and Rosebud service units), and Navajo (Gallup and Crownpoint service units). The 14 facilities discussed in these interviews were as follows (service units in parentheses): Crow/Northern Cheyenne Hospital, Pryor Health Center, and Lodge Grass Health Clinic (Crow service unit); Northern Cheyenne Health Center (Northern Cheyenne service unit); Fort Washakie Health Center (Wind River service unit); Pine Ridge Hospital, Kyle Health Center, and Wanblee Health Center (Pine Ridge service unit); Rosebud Hospital (Rosebud service unit); Gallup Indian Medical Center and Tohatchi Health Care Center (Gallup service unit); Crownpoint Comprehensive Health Care Facility, Pueblo Pintado Health Station, and Thoreau Health Station and Dental Clinic (Crownpoint service unit).

conducted in-person site visits at 13 of these facilities to observe the state of the selected facilities and their medical equipment.⁹ These areas and facilities were selected to obtain variation by geographic region, user population size, and the facilities' ages and conditions, among other considerations. We obtained officials' perspectives about topics such as the state of IHS facilities and equipment, challenges maintaining facilities and replacing medical equipment, the patient care effects of aging facilities and equipment, and strategies used by IHS to mitigate negative patient care effects. To obtain additional perspectives, we also contacted eight Tribes located near our selected areas and facilities. Officials from two of those Tribes agreed to talk with us.

To describe the state of IHS's federally operated medical facilities and associated challenges, we reviewed related IHS documentation, including portions of its Office of Environmental Health and Engineering Technical Handbook specific to the Facilities Condition Assessment Program.¹⁰ We also reviewed fiscal year 2021 and 2022 data—the most recent data available at the time of our review—from IHS's Facilities Engineering Deficiency System, a part of its Health Facilities Data System.¹¹ We focused our review on data related to IHS's federally operated medical buildings, including data on the buildings' age, condition, replacement costs, and repair backlog amounts.

We assessed the reliability of the agency's data by (1) reviewing related documentation, (2) comparing the data provided to other federally operated facility lists, and (3) interviewing agency officials knowledgeable about the data. We determined that the data were sufficiently reliable for the purpose of describing the age and estimated repair backlog amounts for IHS's federally operated medical buildings. We determined that building description labels (e.g., hospital, health center, health station)

⁹We did not visit the Fort Washakie Health Center in person, and instead conducted interviews with Wind River service unit officials via teleconference.

¹⁰Indian Health Service, *Technical Handbook for Environmental Health and Engineering, Volume VI – Facilities Engineering*, Part 73 – Facilities Condition Assessment Program.

¹¹The data system contains data on all IHS federally owned and operated buildings, including buildings such as housing facilities or facilities that are housing adjacent, such as residential garages, group homes, and residential storage units. Whenever possible, we excluded these buildings from our analyses. For the purposes of this report, the term "medical buildings" includes those buildings that federally operated medical facilities are comprised of, such as hospitals and outpatient clinic buildings where patients receive care, and the supporting buildings such as storage units for medical supplies, administrative support buildings, and maintenance shops that serve an indirect support role for IHS patient care.

were not reliable for determining the type of health care facility operating from that building, and thus we were not able to analyze the data by type of facility. We also determined that not all of the data were reliable for the purpose of describing medical buildings' conditions. After discussing the data with IHS, we decided to remove buildings with unreliable data from our analysis of facility conditions. Instances where some IHS federally operated medical buildings have been removed from our analysis are noted in our report.

To examine the state of medical equipment at IHS federally operated facilities, we reviewed medical equipment inventory data for our three selected areas and 14 selected facilities. We assessed the reliability of the medical equipment data by (1) reviewing related documentation; (2) performing manual testing to assess for missing data, outliers, and obvious errors; and (3) interviewing agency officials knowledgeable about the data. The results of our testing and interviews showed that the selected inventory data were incomplete and that data elements key to our review contained high percentages of missing or invalid data. Therefore, we determined that the data were not sufficiently reliable for the purposes of describing the state of IHS medical equipment. We discuss issues related to the reliability of the data in our report. Additionally, we examined the extent to which the selected areas and service units were following certain IHS medical equipment inventory management policy requirements, such as tracking equipment in IHS's computerized inventory management system and holding area biomedical equipment governance committee meetings. We also examined whether service units were following relevant medical equipment accreditation requirements of The Joint Commission.¹² We assessed IHS's oversight of its medical equipment inventory to determine whether its actions were consistent with the goals and objectives outlined in the agency's Fiscal Year 2019-2023 Strategic Plan.¹³ We also compared IHS's actions to

¹²Nearly all of IHS's federally operated hospitals and about 30 percent of its ambulatory care service units are accredited by The Joint Commission, according to IHS officials. The Joint Commission accreditation standards specific to medical equipment include a requirement that all medical equipment must be included in the facility's written inventory.

¹³Indian Health Service, *Indian Health Service Strategic Plan Fiscal Year (FY) 2019-2023* (Rockville, Md.: July 9, 2019).

federal standards for internal control related to using quality information and monitoring.¹⁴

To describe IHS efforts to mitigate the negative effects aging facilities and equipment may have on patient care, we reviewed IHS policy documents related to facilities and medical equipment. We also reviewed and analyzed information provided to us by IHS headquarters, area, and service unit officials in interviews or in writing to identify themes related to mitigation strategies that IHS uses, as well as negative patient care effects resulting from aging facilities and equipment or IHS's mitigation strategies. We also reviewed the results of surveys conducted by The Joint Commission between 2019 and 2022 of our selected service units to identify any survey findings related to aging facilities and medical equipment that posed a patient care risk. Finally, we reviewed reports from the IHS Safety Tracking and Response system for our selected areas to identify any patient safety incidents, including adverse events, related to aging facilities and medical equipment.¹⁵ However, we concluded that there were limited reported incidents for our selected areas specifically related to aging facilities and equipment. Therefore, the reports were of limited usefulness for the purposes of our review.

We conducted this performance audit from January 2022 through November 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our finding and conclusions based on our audit objectives.

Background

IHS's mission is to raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives to the highest level. IHS headquarters is responsible for setting the agency's national health care policy, ensuring the delivery of quality comprehensive health services,

¹⁴GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014). Internal control is a process effected by an entity's oversight body, management, and other personnel that provides reasonable assurance that the objectives of an entity will be achieved.

¹⁵The IHS Safety Tracking and Response system, a web-based safety and adverse event tracking system, was implemented in 2020. We have reported previously on IHS's use of the IHS Safety Tracking and Response system to monitor adverse events—events that could have caused or did cause harm, damage, or loss to patients. See GAO, *Indian Health Service: Actions Needed to Improve Use of Data on Adverse Events*, [GAO-23-105722](#) (Washington, D.C.: July 10, 2023).

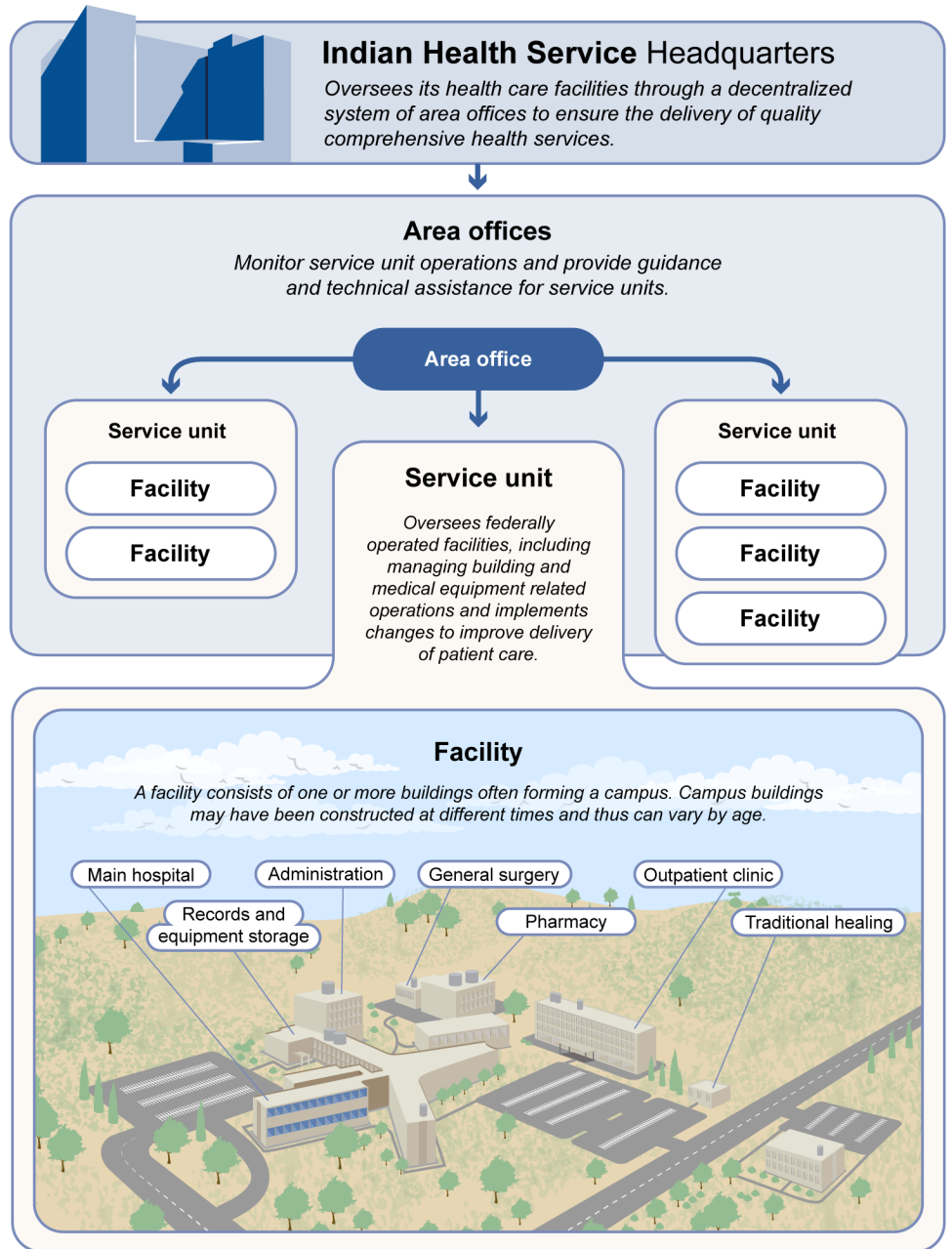
and advocating for the health needs and concerns of American Indian and Alaska Native people. IHS oversees its provision of health care services through a decentralized system of 12 area offices, which are led by area directors and located in 12 geographic areas.

IHS area offices are responsible for monitoring federally operated facilities' operations and finances, and providing guidance and technical assistance. These area offices are further subdivided into administrative entities called service units, which may consist of one or more federally operated facilities. According to IHS, as of June 2023, there were 62 service units, 21 hospitals, and 52 health centers federally operated by IHS.¹⁶ Federally operated facilities offer a range of care, including primary care, emergency care, and some ancillary services, such as pharmacy, laboratory, and X-ray.¹⁷ Each facility consists of one or more buildings, often forming a campus of associated buildings such as a main hospital building, outpatient clinics, and storage and administrative office buildings. See figure 1 for an overview of the IHS's system of areas, service units, facilities, and a depiction of a medical facility campus with a number of associated buildings.

¹⁶Federally operated facilities are located in 10 of IHS's 12 areas. The Alaska and Tucson areas do not have any federally operated facilities.

¹⁷IHS's federally operated hospitals and health centers offer a range of care and are open at least 40 hours a week. The majority of hospitals have emergency departments, and some provide surgical services and specialty care, such as ophthalmology and orthopedics. Health centers generally provide outpatient services and provide primary and preventive care. Other federally operated facilities include health stations and school health clinics, which provide primary care services and are open less than 40 hours per week.

Figure 1: Overview of IHS Headquarters, Area Offices, Service Units, and Facilities



Source: GAO analysis of Indian Health Service documentation; GAO (illustrations). | GAO-24-105723

Facility Condition, Maintenance, and Repair

Condition Index Calculation

Calculating a building condition index rating is a federally recognized method to assess and compare the relative condition of a group of buildings. The Indian Health Service (IHS) derives its condition index ratings from “repair needs” and “replacement value” data that it reports annually to the Federal Real Property Profile Management System, a database of U.S. real property maintained by the General Services Administration.

- Repair needs are defined as the nonrecurring costs to ensure that a constructed building or structure is restored to a condition substantially equivalent to the originally intended and designed capacity, efficiency, or capability.
- Replacement value is defined as the cost to design and construct, or acquire, an asset to replace an existing asset of the same functionality and size, and in the same location using current costs, building codes, and standards.
- The condition index equals $1 - (\$ \text{ Repair Needs} / \$ \text{ Replacement Value}) \times 100$ percent.
- When the repair needs exceed the replacement value, the resulting condition index is a negative value.

General Services Administration guidance categorizes the condition index into the following ranges:

- 95 to 100 percent = excellent condition;
- 90 to 94.99 percent = good condition;
- 70 to 89.99 percent = fair condition; and
- 69 percent or less = poor condition.

Source: GAO analysis of IHS and General Services Administration information. | GAO-24-105723

IHS uses two primary types of assessments to evaluate the condition of federally operated facilities: annual general inspections and facility condition surveys.¹⁸ These inspections and surveys identify needed maintenance, repairs, and upgrades, and the results of these assessments, including identified deficiencies, corrective actions, and estimated costs, are recorded in IHS’s Facilities Engineering Deficiency System. IHS defines a deficiency as an existing item, component, structure, system, or equipment that is in poor physical condition or that is out of compliance with minimum applicable mandatory standards. Additionally, a deficiency can reflect that a required item, component, structure, system, or equipment does not exist and must be installed to meet current mandatory standards. Deficiencies include items that must be corrected to meet statutory or regulatory provisions, and recognized engineering and management standards. Examples of deficiencies recorded in the Facilities Engineering Deficiency System include needed

¹⁸Annual inspections are typically handled by a facility manager with assistance from area office staff. As part of the inspections, staff identify needed maintenance, repairs, and corrective actions, and revise cost estimates. Facility condition assessments are in-depth evaluations of the physical condition of IHS property, including buildings, utilities, and grounds. According to IHS documentation, these assessments are to be conducted a minimum of once every 5 years and the area offices may determine how to conduct them. For example, an area office may hire a contractor to do the assessments or establish a local team of IHS area office engineers and facility managers. IHS officials said that they may also identify needed maintenance through other surveys and reviews of IHS facilities, such as accreditation surveys.

backup generator repairs, fire code related updates, and parking lots in need of repaving.¹⁹

IHS uses data from its Facilities Engineering Deficiency System to generate a list of the agency's "Backlog of Essential Maintenance Alteration and Repair." This list includes deficiencies as well as their associated corrective actions that are needed to maintain federally operated facilities in good operating condition but have been deferred because of a lack of staffing or funds. The backlog excludes deficiencies resulting from a lack of space.²⁰

A building's backlog of maintenance and repair costs and the building's replacement value are used to calculate a general measure of the building's condition, known as the "condition index." The condition index is reported on a scale of 0 to 100 percent. The higher the condition index, the better the condition the building is in. The HHS goal is a minimum condition index of 90 or greater for all buildings.

IHS Medical Equipment

IHS defines medical equipment as any movable durable device, machine, or apparatus used for treatment or diagnosis of disease. Examples include beds, laboratory equipment, patient monitoring equipment, X-ray systems, and surgical devices. IHS medical equipment policy requires that service units maintain an updated medical equipment inventory in the agency's standardized computerized equipment inventory management system. The equipment inventory must include inspection and testing reports, warranty and repair records, preventive maintenance records, and ongoing schedules for future preventive maintenance activities.

IHS began using a new standardized computerized equipment inventory management system, Nuvolo, in 2020.²¹ Nuvolo has a number of data fields that IHS officials can complete for each piece of equipment. IHS determined which data fields are mandatory and which are optional. See figure 2 for an illustration of Nuvolo system data fields. Nuvolo has

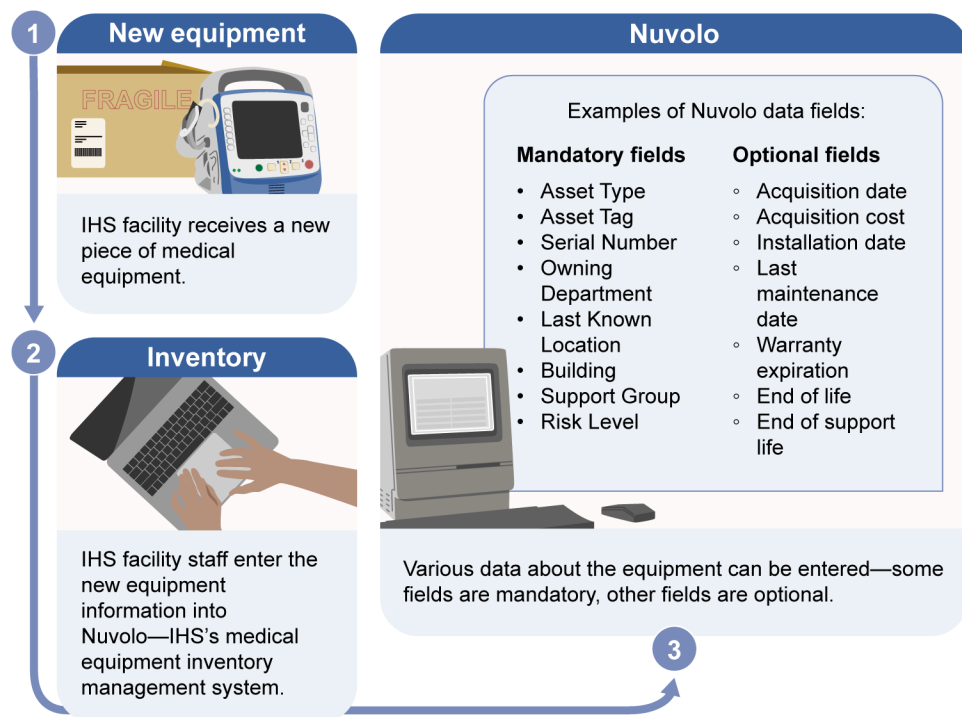
¹⁹Deficiencies costing less than \$1,000 to correct are not entered into the Facilities Engineering Deficiency System but are documented at the service unit level for correction through local projects.

²⁰Specifically, the list does not include deficiencies related to a need to acquire additional space, such as an expansion in the delivery of health care services, or the conversion of existing building space from one functional use to another (e.g., converting space to be used for health care services).

²¹In addition to being used for management of medical equipment, Nuvolo is also used for managing work orders for physical devices maintained by facilities engineering staff.

various reporting capabilities, with the ability to generate reports that can show the maintenance history for each piece of medical equipment, or reports of medical equipment by various data fields (if completed), such as equipment that is past its end of life date.

Figure 2: Indian Health Service’s (IHS) Process for Entering New Medical Equipment into Its Nuvolo Medical Equipment Inventory Management System



Source: GAO analysis of Indian Health Service documentation; GAO (illustrations). | GAO-24-105723

IHS Funding for Facilities and Medical Equipment

IHS uses funding received through its regular annual appropriations, as well as from other funding sources to fund its facility and equipment needs.

Annual appropriations. Like most federal agencies, IHS receives appropriations through the regular annual appropriations process, which it uses to fund federally operated and tribally operated facilities throughout

the country.²² Funding is distributed to federally and tribally operated facilities through the area offices. The funding from the Indian Health Facilities appropriation is allocated by facility activities, such as:

- Maintenance and improvement—funding for maintenance, repair, and improvement of health care facilities. For example, IHS uses these funds for routine maintenance, as well as larger projects to reduce its maintenance and repair backlog.²³
- Health care facilities construction—funding for the construction of new and replacement health care facilities. By statute, IHS maintains a health care facility priority system and allocates facility construction funds based on its IHS-wide list of priorities for constructing new facilities, which, according to IHS, dates back to 1993.²⁴ Amendments to the Indian Health Care Improvement Act regarding IHS’s health care facility priority system protected the priority of certain projects established under the construction priority system in effect on March 23, 2010. Under this authority, IHS has determined it needs to complete the Health Care Facilities Construction Priority list effective as of March 23, 2010, before spending appropriated funding on any new or replacement facilities.²⁵

²²In addition, the Consolidated Appropriations Act, 2023 provided IHS with advance appropriations in its Indian Health Facilities appropriation account to become available in fiscal year 2024 and remain available until expended. An advance appropriation is budget authority that becomes available one or more fiscal years after the fiscal year for which the appropriation providing it is enacted. The Indian Health Facilities appropriation account is available for construction, repair, maintenance, demolition, improvements, and equipment of health facilities, among other things, however the act explicitly prohibited the advance appropriations from being used for Health Care Facilities Construction or Sanitation Facilities Construction. Pub. L. No. 117-328, 136 Stat 4459, 4811 (2022).

²³Maintenance and improvement funds are also used for environmental compliance projects and demolition of vacant IHS buildings.

²⁴See 25 U.S.C. § 1631(c)(1)(A).

²⁵See 25 U.S.C. § 1631(c)(1)(D). As of April 2023, the nine remaining medical facility projects on the 1993 list, including those partially funded, were expected to cost about \$6.2 billion. The remaining projects are: Phoenix Indian Medical Center, Arizona; Whiteriver Hospital, Arizona; Gallup Indian Medical Center, New Mexico; Alamo Navajo, New Mexico; Pueblo Pintado, New Mexico; Albuquerque West and Albuquerque Central, New Mexico; Bodaway Gap, Arizona; and Sells, Arizona, according to IHS officials.

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- Equipment funds—funding for maintenance, upgrades, replacement, and the purchase of new medical equipment systems.²⁶

Other funding sources. In addition to its regular annual appropriations, IHS can access other sources of funding to maintain and repair facilities and to maintain and purchase medical equipment. Those sources include:

- Third-Party Collections. IHS is authorized to collect and retain reimbursements, referred to as third-party collections, from Medicaid, Medicare, the Department of Veterans Affairs, and private insurance for services provided at IHS facilities. We have reported previously that the resources available to both federally operated and tribally operated facilities had grown in recent years, and that facilities were increasingly relying on third-party collections to maintain their facilities' operations and expand services.²⁷
- Nonrecurring Expenses Fund. HHS has authority to transfer unobligated balances of expired discretionary funds into the Nonrecurring Expenses Fund.²⁸ Pursuant to the Consolidated Appropriations Act, 2008, HHS is authorized to use the amounts in the Fund for capital acquisitions necessary for HHS's operation, including facilities infrastructure and information technology infrastructure.²⁹ IHS

²⁶The other facility activities that are funded by the Indian Health Facilities appropriation are for sanitation facilities construction, and facilities and environmental health support.

²⁷See GAO, *Indian Health Service: Information on Third-Party Collections and Processes to Procure Supplies and Services*, [GAO-22-104742](#) (Washington, D.C.: March 10, 2022) and GAO, *Indian Health Service: Facilities Reported Expanding Services Following Increases in Health Insurance Coverage and Collections*, [GAO-19-612](#) (Washington, D.C.: Sept. 3, 2019).

²⁸An agency incurs an obligation when there is a definite commitment that created a legal liability of the government for goods and services ordered or received, or a legal duty on the part of the United States that could mature into a legal liability by virtue of actions on the part of the other party beyond the control of the United States. Unobligated balances are the portion of obligational authority—authority in federal law to enter into financial obligations that result in outlays of federal government funds, such as appropriations—that has not yet been obligated. The sum of the obligated and unobligated balances is the unexpended balance.

For an appropriation account that is available for a fixed period of time, the obligational authority expires after the appropriation's time period of availability ends. Discretionary appropriation refers to budgetary resources that are provided in appropriation acts, other than those that fund mandatory programs. As such, amounts transferred into the Nonrecurring Expenses Fund would be discretionary monies that were not obligated for any legal liability before their period of availability expired.

²⁹See Pub. L. No. 110-161, Div. G, tit. II, § 223, 121 Stat. 1844, 2188 (2007), classified at 42 U.S.C. § 3514a.

officials said that Nonrecurring Expenses Fund resources have allowed IHS to address parts of its Health Care Facilities Construction Priority List backlog, modernize IHS's aging health IT systems, and replace over-age medical equipment. IHS headquarters solicits ideas for Nonrecurring Expenses Fund projects from area offices and implements a ranking process to distribute the funds, according to IHS officials.

Many IHS Medical Buildings Are in Fair or Poor Condition, Presenting Challenges for Health Care Delivery

The Median Age of IHS Medical Buildings Is 39 Years, and Their Maintenance and Repair Backlog Is Growing

Our review of IHS data shows that IHS medical buildings are aging, many have a condition index rating lower than HHS's goal, and the costs associated with the agency's maintenance and repair backlog are growing.

Medical Building Age and Condition

IHS federally operated medical buildings are about 4 decades old on average, and generally in fair or poor condition. Specifically, as of September 2022, the median age of the 363 federally operated medical buildings, including hospitals and health centers, was 39 years old. They ranged in age from 1 year to 171 years old.³⁰ As a point of comparison, in 2022, the Department of Veterans Affairs, which also operates a network of health care facilities, reported its hospitals had a median age of nearly 60 years compared to U.S. private sector hospitals, which have a median

³⁰As described previously, IHS medical facilities may be comprised of multiple structures with varying supportive roles for the medical campus as a whole. The age of the buildings that make up an IHS medical facility may vary. The building that is 171 years old is an administrative building at the Fort Yuma Indian Hospital in the Phoenix area, according to IHS data.

age of 8.5 years.³¹ See table 1 for a summary of the number of medical buildings and their average and median age by IHS area.

Table 1: Number and Age of Indian Health Service (IHS) Federally Operated Medical Buildings, by Area as of September 2022

| IHS area | Number of medical buildings | Average age (years) | Median age (years) |
|--------------|-----------------------------|---------------------|--------------------|
| Albuquerque | 41 | 49 | 48 |
| Bemidji | 16 | 42 | 28 |
| Billings | 40 | 49 | 44 |
| California | 7 | 5 | 3 |
| Great Plains | 64 | 35 | 30 |
| Nashville | 6 | 25 | 12 |
| Navajo | 80 | 46 | 48 |
| Oklahoma | 16 | 32 | 30 |
| Phoenix | 73 | 38 | 31 |
| Portland | 20 | 43 | 39 |
| Total | 363 | 41 | 39 |

Source: GAO analysis of IHS data. | GAO-24-105723

Notes: This table includes data for the 10 of IHS’s 12 areas that had federally operated facilities as of September 2022. There were no federally operated medical facilities in the Alaska and Tucson areas. For the purposes of our report, IHS’s federally operated medical facilities include buildings such as hospitals and health centers where patients receive health care services, as well as the supporting buildings including storage units for medical supplies, administrative support buildings, and maintenance shops that serve an indirect support role for IHS patient care. It does not include housing facilities or facilities that are housing adjacent, including residential garages, group homes, and residential storage units.

Of the nine medical facilities remaining on IHS’s 1993 priority list of facilities to be replaced, three are federally operated hospitals: the Whiteriver Hospital and the Phoenix Indian Medical Center in the Phoenix area, and the Gallup Indian Medical Center in the Navajo area. These facilities are 44, 53, and 62 years old respectively. There are two older federally operated hospitals—the Bemidji area Cass Lake Hospital and the Billings area Blackfeet Community Hospital (both 86 years old). As mentioned above, these hospitals cannot be prioritized for replacement

³¹Department of Veterans Affairs, *VA Recommendations to the Asset and Infrastructure Review Commission, Volume I, Introduction, Approach and Methodology, and Outcomes*, (March 2022).

until all 1993 priority facilities have been replaced, according to IHS.³² While waiting for facilities on the list to be replaced, service unit officials may continue to pursue modifications to their existing facility. For example, Gallup service unit officials said they are pursuing an emergency department expansion project at the current facility to help keep up with the current demand. See figure 3 for additional information about the Gallup Indian Medical Center.

³²According to IHS, the 1993 priority list was developed in collaboration with Tribal representatives, and projects were ranked based on the population served, the condition of health care facilities, remoteness, and barriers to care. IHS officials said all projects remaining on the 1993 priority list have some funding and are in various stages of planning, design, or construction. However, they said the cost to complete these projects has and will continue to increase over time, delaying their completion. IHS headquarters officials told us in March 2022 that at the current appropriation level of approximately \$250 million for medical facilities construction, it would take approximately 10 years to fully fund and replace the remaining facilities on the priority list.

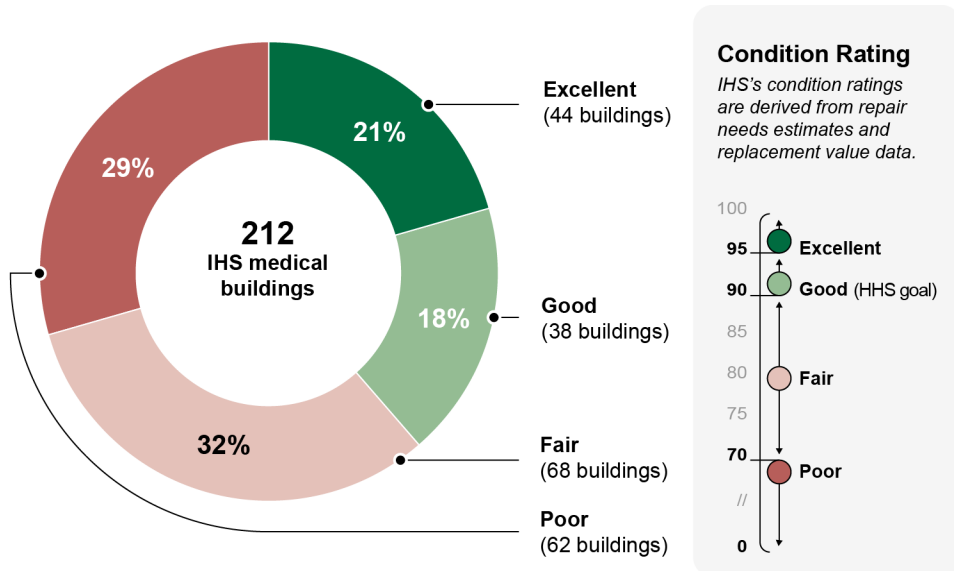
Figure 3: Overview of the Gallup Indian Medical Center



Source: GAO analysis of Indian Health Service (IHS) information; IHS, GAO (photos). | GAO-24-105723

In addition to building age, IHS tracks its medical facilities' condition index to assess and compare its buildings. Of the 363 federally operated medical buildings, 212 buildings have a condition index rating.³³ Our analysis of IHS data show that about 61 percent of these federally operated medical buildings (130 out of 212) have a condition index rating of "fair" or "poor." Approximately 39 percent (82) of the buildings meet the HHS goal of having a condition index rating of 90 or higher. See figure 4.

Figure 4: Condition of Indian Health Service (IHS) Federally Operated Medical Buildings as of September 2022



Source: GAO analysis of IHS data. | GAO-24-105723

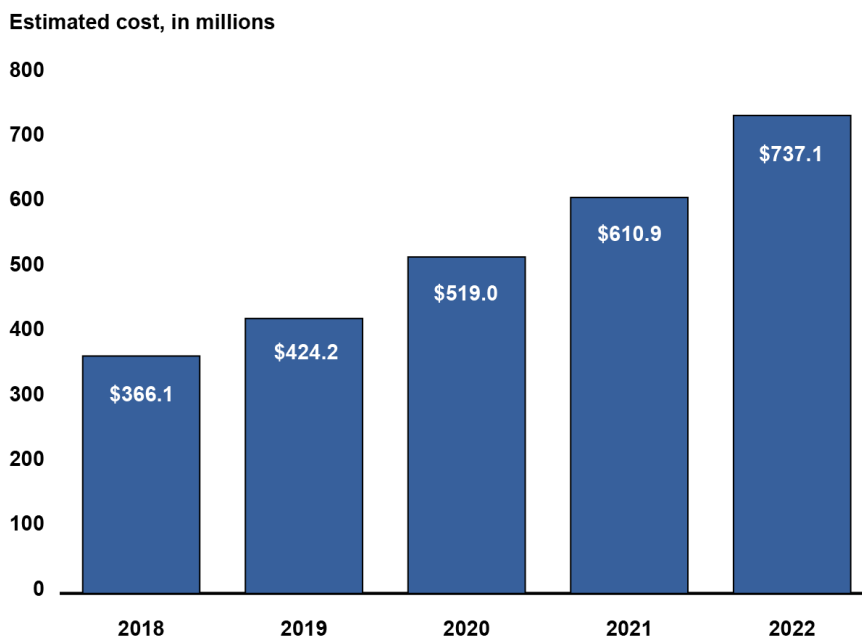
Notes: This figure shows the condition of the 212 IHS federally operated medical buildings with a condition index rating; IHS has a total of 363 federally operated medical buildings. The Department of Health and Human Services, of which IHS is a part, has a minimum condition index goal of 90 or greater for all its buildings. For the purposes of our report, IHS's federally operated medical facilities include buildings such as hospitals and health centers where patients receive health care services, as well as the supporting buildings including storage units for medical supplies, administrative support buildings, and maintenance shops that serve an indirect support role for IHS patient care. It does not include housing facilities or facilities that are housing adjacent, including residential garages, group homes, and residential storage units.

³³For the remaining 151 federally operated medical buildings, the IHS data did not include an estimate of the buildings' deferred repair needs, which is needed to calculate a condition index rating. Therefore, in consultation with IHS we determined that it would be appropriate to exclude these buildings from our analysis of building condition.

IHS Medical Facilities' Maintenance and Repair Backlog

As IHS's buildings increase in age, the estimated cost of their maintenance and repair backlog continues to grow. Specifically, from fiscal years 2018 to 2022, IHS's estimates of its backlog of deferred maintenance and repairs at its federally operated facilities—including both medical buildings and other buildings—more than doubled from \$366 million to \$737 million.³⁴ See figure 5. IHS headquarters officials told us a number of factors have contributed to the growing backlog, including inflation and aging infrastructure. IHS officials also said that these backlog estimates may be understated due to the delays in conducting facility condition assessments during the COVID-19 pandemic.

Figure 5: Indian Health Service Estimated Maintenance and Repair Backlog Costs for Federally Operated Facilities, for Fiscal Years 2018 to 2022



Source: GAO analysis of Indian Health Service data. | GAO-24-105723

Notes: Estimates reflect all federally operated buildings, including medical facility buildings and some housing and area offices for which repair backlog data has been recorded. Indian Health Service

³⁴Annual totals reflect all federally operated facilities, including repair estimates for medical facilities as well as housing and area offices for which repair backlog data has been recorded.

IHS headquarters officials said that in 2018 the Indian Health Facilities appropriation increased, which helped IHS address its existing maintenance and repair backlog. Further, they said this funding increase led to facilities updating and adding projects to their backlog for maintenance and repair.

officials said backlog estimates may be understated due to the delays in conducting facility condition assessments during the COVID-19 pandemic.

Insufficient Building Space and Outdated Facility Infrastructure Present Challenges for Delivering Health Care

According to IHS officials at all levels of the agency, older medical facilities may have insufficient space and outdated infrastructure that create challenges to IHS's ability to deliver health care services. For example:

Insufficient space. IHS headquarters, area, and service unit officials said available medical facility space does not effectively meet the current needs of their patient populations. According to an IHS facility needs assessment, its facilities are substantially undersized for the needs of its patient population, which restricts the services that can be provided.³⁵ Billings area officials said that area facilities are small, undersized, not up to par with modern medical standards, and could use improvements for health care flow and delivery.

In addition, officials from facilities from all three of our selected IHS areas told us they do not have sufficient space to effectively implement IHS's preferred model of care. IHS headquarters officials explained that IHS's model of care has changed over time and facility layout, design, and sufficient space are important to meet modern health care delivery needs. Specifically, having sufficient space to provide health care services is important to accommodate IHS's objective to implement a "patient centered" model of collaborative health care to promote high quality patient care and enhance patient experience, according to IHS documentation. For example, Great Plains area officials said under the modern patient centered model that they strive to implement, providers participate in a multi-disciplinary collaborative team to provide a patient's care. However, officials told us their existing facilities do not have the space to co-locate provider care teams to allow for efficient collaboration among providers of different disciplines.

Insufficient space also affects how a medical facility integrates modern technology needed to operate. For example, Rosebud service unit officials noted that facilities were not designed with suitable information technology spaces, and technology equipment is often stored in small, poorly ventilated closets that often get too hot for optimal function. At the Lodge Grass Health Clinic in the Billings area, we observed that space

³⁵Indian Health Service, *The 2016 Indian Health Service and Tribal Health Care Facilities' Needs Assessment Report to Congress*, (2016).

limitations had led to having a hot water heater located in the same room as electrical and information technology equipment, which has been noted as a building code violation in IHS documentation. See figure 6. Also, the water heater is approaching the end of its life—if it were to leak, it could potentially take out the health center’s electrical and information technology systems, which could lead to facility closures and affect patients’ access to timely care.

Figure 6: Hazardously Located Facility Equipment at the Indian Health Service Lodge Grass Health Clinic Due to Lack of Space



Water heater placed adjacent to electrical and technology equipment due to a lack of space.

Source: GAO. | GAO-24-105723

Outdated facility infrastructure. Outdated facility infrastructure, such as heating and cooling, plumbing, electric grid, and other building systems, can present challenges with the provision of patient care. For example,

IHS officials told us that modern medical equipment may have high electrical requirements that cannot be handled by outdated facility infrastructure. Also, an IHS official testified about difficulties retrofitting older hospitals with modern technology such as wireless equipment needed for delivering modern health care.³⁶ Additionally, the failure of a building's heating and cooling system, or sewer system, could detrimentally affect indoor conditions and may lead to a facility closure. For example, service unit staff in the Great Plains area told us that sometimes they are unable to effectively maintain the temperature of their hospital due to an insufficient heating and cooling system, which has resulted in having to close for several days. Similarly, a Billings area health center had to temporarily shut down when a sewer pipe broke and dumped sewage in the pharmacy area of the building, according to facility officials.

In addition, damaged or deteriorating structural components of buildings, such as roofs, flooring, doors, and counters, present challenges that affect patient care, according to IHS officials. For example, officials from medical facilities in all three of our selected IHS areas reported various infection control challenges that stem from their inability to appropriately clean and disinfect outdated surfaces such as damaged cabinets and countertops. Additionally, as we toured a health center in the Billings area, officials pointed out new X-ray equipment that could not be used until damaged flooring was repaired.³⁷ Figure 7 shows rusted and chipped cabinetry and missing flooring tiles at three of our selected facilities that present infection control or other patient care challenges.

³⁶See Randy Grinnell, Deputy Director for Management Operations, Indian Health Service, *Examining Federal Facilities in Indian Country*, testimony before the House Natural Resources Committee Subcommittee for the Indigenous Peoples of the United States, June 17, 2021.

³⁷IHS officials told us in August 2023 that the flooring was repaired in December 2022, following our October 2022 visit.

Figure 7: Examples of Deteriorating Building Components: Rusted Cabinet, Damaged Countertop, and Missing Flooring from Selected Site Visits



The base of cabinets showing peeled off paint and rust at a trauma room at an emergency department, Rosebud Hospital, South Dakota.



A hand-washing station within the urgent care space at the Northern Cheyenne Health Center, with broken laminate and exposed particle board.



Missing floor tiles at an X-ray room at Lodge Grass Health Clinic, Montana. New flooring was needed before new equipment could be used. Officials reported that this flooring was later repaired in December 2022 following our visit.

Source: GAO. | GAO-24-105723

IHS Officials Describe Challenges Maintaining or Improving Their Facilities

In addition to facing challenges delivering health care in outdated buildings, officials from IHS headquarters and from our selected areas and service units reported additional challenges in maintaining, repairing, and improving their medical facilities. Such challenges include funding constraints and increasing costs that limit the ability to complete facility repairs, as well as procurement, supply chain, and hiring challenges that limit the ability to obtain materials and personnel needed for maintenance and repairs.

Funding constraints. According to an IHS engineering program guide, funding limitations result in the reduction of or delay in maintaining facilities and the increase of future repair needs.³⁸ Moreover, some IHS area and service unit officials told us maintenance and improvement funding constraints hinder their ability to reduce their facilities' growing maintenance and repair backlog. According to IHS data, the total funding allocated for maintenance and improvement in fiscal year 2022 for both federally and tribally operated facilities was about \$170 million, while the backlog repair estimate for its federally operated facilities alone was over \$737 million. Some area officials said they have to prioritize making needed maintenance and repairs of some facilities while delaying others due to funding constraints. For example, Billings area officials told us that in fiscal year 2022 the Crow/Northern Cheyenne hospital did not receive any maintenance and improvement project funds because they need to prioritize the repair of the fire alarm system at the Blackfeet Community Hospital.³⁹

To manage these funding constraints, officials from each of our selected areas said they rely on other funding sources when available. For example, Pine Ridge service unit officials said overall they are underfunded, and they rely heavily on accreditation funding and the Nonrecurring Expenses Fund to help address their maintenance and

³⁸Indian Health Service, Office of Environmental Health and Engineering, *Healthcare Facilities Engineering Program Guide*, (2020).

³⁹IHS officials told us in August 2023 that while the Crow/Northern Cheyenne Hospital did not receive any maintenance and improvement project funds, the hospital did receive funding for helipad renovation from another funding source.

repair backlog.⁴⁰ They noted that without this additional funding, major improvement projects could not be addressed. Navajo area officials also said Nonrecurring Expenses Fund funding has been extremely helpful to fund necessary projects that otherwise would not happen in the Navajo area. These officials said they used \$3.5 million received from the Nonrecurring Expenses Fund to upgrade the antiquated fire alarm systems at the Gallup service unit. The cost for that project exceeded the total amount of routine maintenance funding allocated to the Gallup service unit in 2022—\$1.5 million.

The amount of money IHS receives from HHS's Nonrecurring Expenses Fund varies from year to year. IHS headquarters officials said they have implemented a prioritization process for this funding because they always have more projects than the amount available. IHS headquarters officials also told us additional funding for new facility construction would help reduce their backlog of maintenance and repair because when IHS replaces an older obsolete hospital or other medical facility all deficiencies associated with the old facility are removed from the backlog.

Growing costs. Some area office and service unit officials told us they have experienced increases in construction materials and project costs in recent years, which, when combined with funding constraints, has made addressing facility deficiencies challenging. For example, Wind River service unit officials said over time, as they plan and implement their work in phases on their clinic expansion project, materials costs are increasing, and they are unsure to what extent the \$4 million they have for the project will cover its final, total costs. Further, as costs increase, service unit officials reported having to prioritize more emergent facility repairs, delaying other needed repairs. In the meantime, the repair costs of the delayed projects may increase between the initial estimate and the final cost. For example, Crow service unit officials said that when they submitted a project request for a fire alarm system replacement, the cost

⁴⁰Accreditation funding is an appropriation earmark designating a portion of IHS's lump-sum appropriation for costs related to, or resulting from, accreditation emergencies. The funding is used to assist IHS' federally operated facilities to restore operations in emergency circumstances when the facilities are deemed, or at risk of being, out of compliance and notified to stop operations by the Centers for Medicare & Medicaid Services. IHS allocates the funding to help restore or maintain compliance in the event of temporary closure of such facility or one or more of its departments; and compensate for third-party collection shortfalls resulting from being out of compliance. As noted earlier, HHS has authority to transfer unobligated balances of expired discretionary funds from fiscal year 2008 and subsequent years into the Nonrecurring Expenses Fund to be used for capital acquisitions necessary for the Department's operation, including facilities infrastructure and information technology infrastructure.

estimate was approximately \$200,000, but following project delays, the final project cost rose to \$350,000. The officials said without supplemental funding they would not be able to implement certain projects as costs increase.

IHS procurement and contracting challenges. Procuring contract services for facilities projects and replacement facility equipment in a timely and efficient manner is challenging, leading to project delays and increased costs, according to some IHS officials. For example, Rosebud service unit officials said that the bids they get on requests for proposals are normally valid for 30 days, but the paperwork takes longer, so prices increase by the time they have the purchasing authority. Some IHS officials also noted that the timing of when they receive maintenance and improvement funding, affected by operating under continuing resolutions, creates contracting and procurement challenges—particularly given annual procurement cutoff dates.⁴¹ For example, Wind River service unit officials said they can only fund contracts for as long as the continuing resolution is in place but once funding ends, projects are delayed.

Further, IHS officials from multiple levels of the agency also said they have challenges hiring staff with sufficient contracting knowledge. For example, IHS headquarters officials said there is a lack of trained personnel who have the appropriate procurement and acquisition experience needed at the service units and some area offices. Navajo area officials also noted that their acquisition department is understaffed and lacks the needed experience—resulting in challenges getting contracts awarded in a timely manner. IHS’s 2023 Agency Work Plan has an operational goal listed to “Improve the acquisition planning process.” Headquarters officials told us that IHS’s Division of Acquisition Policy is

⁴¹Continuing resolutions provide temporary funding to allow agencies or programs to continue to obligate funds at a particular rate—such as the rate of operations for the previous fiscal year—for a specific period of time, which may range from a single day to an entire fiscal year. We have previously reported that operating under continuing resolutions creates contracting related challenges for IHS. See GAO, *Indian Health Service: Considerations Related to Providing Advance Appropriation Authority*, [GAO-18-652](#) (Washington, D.C.: Sept. 13, 2018). However, the procurement challenges described by IHS officials may be lessened in the future, as the Consolidated Appropriations Act, 2023 provided IHS with advance appropriations in its Indian Health Facilities appropriation account to become available in fiscal year 2024 and remain available until expended. The Indian Health Facilities appropriation account is available for construction, repair, maintenance, demolition, improvements, and equipment of health facilities, among other things, however the act explicitly prohibited the advance appropriations from being used for Health Care Facilities Construction or Sanitation Facilities Construction.

taking steps to address this goal and has completed listening sessions with most area offices. They noted that the division has created four subgroups to address various topics and recommendations from these listening sessions.

Supply chain challenges. Some service unit officials described various supply chain challenges in obtaining construction materials and supplies, which delays projects to address identified facility deficiencies. For example, Crow service unit officials in the Billings area said they have experienced supply chain delays during the COVID-19 pandemic, leading project costs to nearly double in one instance. In another example, Rosebud service unit officials said finding building materials locally is a challenge, and they may have to pay a premium to acquire materials in part due to their remote location. In addition, they said that challenges obtaining building materials for a pharmacy project is delaying its completion.

Limited facilities staff. Maintaining adequate facility staff levels, as well as recruiting and retaining the needed facility staff (e.g., facility engineers) to repair and maintain facilities has been a challenge communicated by IHS officials in all three of our selected IHS areas. According to IHS, maintaining staff who are trained to inspect, operate, and maintain a building, including its electrical system, emergency generators, and heating, ventilating, and air-conditioning systems is imperative as failure of these systems directly affects the safety of patients.⁴² However, Rosebud service unit staff, for example, said they have less than half of the necessary maintenance staff—resulting in staff having to focus on only the most urgent projects, and an inability to be proactive to avoid crises. Great Plains area office officials said they have challenges identifying and hiring staff that have the unique construction skills needed to maintain and repair federally operated facilities in their region of the country, and sometimes potential candidates they interview lose interest because of the remote location. A Billings area official also noted that a facilities engineer vacancy at the Wind River service unit has resulted in that service unit’s inability to identify maintenance needs and repair them quickly.

⁴²Indian Health Service, *Healthcare Facilities Engineering Program Guide*.

The State of Medical Equipment Cannot Be Determined Because IHS Does Not Have Complete or Reliable Data

Medical Equipment Data for Selected IHS Areas Are Incomplete and Unreliable; Headquarters Was Unaware of Data Problems

Our review of data from Nuvolo, IHS's medical equipment inventory management system, for our three selected areas and selected facilities found that these data were not complete or reliable for determining the state of IHS medical equipment in its federally operated facilities. We also found that IHS Headquarters officials, and in one case area office officials, were not aware of the problems we identified, indicating weaknesses in IHS monitoring of its areas and federally operated service units. Our findings also raise questions about the extent to which IHS data are complete and reliable for other areas and facilities.

Incomplete and Unreliable Data

IHS policy requires that service units use Nuvolo to maintain their medical equipment inventories, and The Joint Commission requires facilities it accredits to list all medical equipment in their inventories.⁴³ However, we found that the medical equipment data in our selected areas was not complete. Specifically, we found that not all equipment was entered into Nuvolo, and when equipment was entered, relevant fields were often left blank.

- **Unrecorded equipment in Nuvolo.** Not all service units in our selected areas were using Nuvolo to maintain their medical equipment inventories. Specifically, as of the time of our interviews, two Billings area facilities were using a different system, and officials at two additional Billings area facilities said that they were not actively using Nuvolo for tracking their medical equipment inventories.⁴⁴ In addition to these four Billings facilities that had incomplete inventories because

⁴³See Indian Health Service, *Indian Health Manual*, Part 5, Chapter 14 (revised September 23, 2015), and Indian Health Service, *Medical Equipment*, Special General Memorandum to Area Directors, No. 2016-02 (Rockville, MD: June 2, 2016).

⁴⁴These latter two facilities did have Nuvolo equipment inventories that were provided to us. However, because service unit officials told us that they were not actively using Nuvolo, these data were likely simply transferred from the prior IHS medical equipment inventory management system. IHS officials told us that as of August 2023, all Billings service units were using Nuvolo for their medical equipment inventories.

they were not actively using Nuvolo to track their medical equipment, we found that Navajo area facilities were not entering all equipment into Nuvolo. Specifically, Navajo area officials estimated that only about two-thirds of area equipment was listed in Nuvolo. Officials said they prioritize entering equipment that requires preventive maintenance. Similarly, when we spoke to staff at a service unit within the Navajo area, they confirmed that their medical equipment inventory data was not complete.

- **Blank fields.** Among the selected facilities in our review that were using Nuvolo, many had data fields that were left blank—particularly those data fields that would allow IHS to determine the age of its equipment and whether it is past its useful life. For example, completeness of the Nuvolo field for a piece of medical equipment’s “end of life” date varied among our selected areas and facilities using Nuvolo. The percent of medical equipment entries without an end of life date ranged from 2 percent at the Rosebud Hospital in the Great Plains area to 53 percent at Gallup Indian Medical Center in the Navajo area. IHS headquarters officials said that in lieu of an “end of life” date, they could use data from Nuvolo’s “acquisition date” field to determine equipment age and evaluate whether equipment is past its average useful life. However, we found that among our selected facilities, this data field and another comparable field (installation date) were similarly incomplete. (See table 2.) One reason these data fields are incomplete is that IHS has not made completion of these data fields mandatory when medical equipment is entered into Nuvolo. However, not maintaining such information is inconsistent with IHS policy, which states that service units’ medical equipment inventories shall include useful life timeframes.⁴⁵

⁴⁵Indian Health Service, *Medical Equipment*.

Table 2: Completeness of Selected Indian Health Service (IHS) Facilities' Medical Equipment Data Related to Determining Equipment Age and Useful Life

| IHS area | Facility | Number of medical equipment assets listed | Percentage of equipment without an end of life date | Percentage of equipment without an acquisition date | Percentage of equipment without an installation date |
|--------------|---|---|---|---|--|
| Billings | Crow/ Northern Cheyenne Hospital | 1,531 | 38 | 42 | 30 |
| | Lodge Grass Health Center | 199 | 36 | 38 | 27 |
| | Pryor Health Center | 187 | 35 | 34 | 25 |
| Great Plains | Pine Ridge Hospital | 2,409 | 8 | 31 | 8 |
| | Kyle Health Center | 307 | 10 | 78 | 8 |
| | Wanblee Health Center | 192 | 7 | 74 | 6 |
| | Rosebud Hospital | 1,030 | 2 | 90 | 1 |
| Navajo | Gallup Indian Medical Center | 4,590 | 53 | 53 | 49 |
| | Tohatchi Health Center | 397 | 29 | 26 | 27 |
| | Crownpoint Comprehensive Health Care Facility | 1,283 | 56 | 56 | 56 |

Source: GAO analysis of IHS data. | GAO-24-105723

Notes: Data are as of a point in time, which varies by area; IHS provided the data between September and December 2022. Data for four of our selected IHS facilities are not included in the table above because officials from the service units overseeing those facilities told us that they were not actively using IHS's medical equipment inventory system or that some data was recorded in another service unit facility's inventory. Some medical equipment asset records are missing multiple data fields (e.g., missing both an end of life and acquisition date). Additionally, while the data in this table indicates the percent of equipment records that do not include an acquisition or installation date, it does not address issues related to date errors.

In addition to problems with completeness of the medical equipment data, we also found problems with the reliability of the data that was recorded. In particular, we observed medical equipment data errors or anomalies, such as records with acquisition and installation dates of January 1, 1900, in the Navajo area, as well as numerous equipment records with the same installation date of December 31, 1999, in the Billings area. For example, nearly 25 percent of the medical equipment records—381 of 1,531 total assets—for the Crow/ Northern Cheyenne Hospital had the same December 31, 1999, installation date listed.

As noted above, a key reason that IHS's medical equipment data are incomplete, and thus cannot be used to determine the state of medical equipment, is that IHS has not made data fields related to equipment's acquisition or installation date, or useful life, mandatory in its computerized equipment inventory management system. In addition, IHS headquarters, area, and service unit officials we spoke to attributed the

problems with the completeness and reliability of medical equipment inventory data to other causes, including:

- **Nuvolo transition.** Billings and Navajo service unit officials we spoke with attributed the data errors we found to glitches in the transition to Nuvolo from the prior inventory management system. They noted that these errors would have to be fixed manually. Further, IHS headquarters officials noted that the timing of the transition to Nuvolo—during the COVID-19 pandemic—made its implementation more challenging and was a factor in the data problems we identified. They said that these kind of information technology transitions are always challenging, noting that it can be difficult to get everyone on board with the change. However, the pandemic created additional challenges as it limited their ability to conduct in-person training and limited area staff's ability to travel to service units to assist with medical equipment responsibilities.
- **Lack of staff.** Lack of staff—biomedical engineers or technicians in particular—to record and update medical equipment inventory information was also cited by some area and service unit officials as contributing to data problems.⁴⁶ For example, Crownpoint service unit officials told us they went 2 years without any biomedical staff, and as of January 2023, only one of three biomedical engineer positions were filled. Relatedly, in one of our selected areas, there was apparent confusion between service unit and area staff regarding who was responsible for keeping track of medical equipment inventory data in the absence of service unit biomedical staff. In addition, Navajo area officials said that staffing levels have been the same for 30 years, but medical equipment requirements and associated workloads have increased. IHS headquarters officials agreed that the areas are understaffed and they need to hire more equipment engineers or technicians.
- **Competing priorities.** Officials from IHS headquarters and two service units also mentioned that competing priorities, such as repairing equipment and performing preventive maintenance, affect staff's ability to keep Nuvolo data complete. For example, IHS headquarters officials said facility staff have high workloads and other

⁴⁶IHS biomedical staff perform tasks such as preventive maintenance, calibration, and repairs of medical equipment, including complex medical and dental X-ray systems, diagnostic laboratory analyzers, and other patient related systems. They are also responsible for maintaining the medical equipment inventory including inspection and testing reports; warranty and repair records; preventive maintenance records; and ongoing schedules for future preventive maintenance activities.

competing priorities like preventive maintenance and repairs, such that data entry is a low priority. They also noted that replacing equipment every year requires time and people resources to clean old data and enter new medical equipment data.

As IHS notes in its equipment policy, medical equipment is a vital component in the delivery of quality health care, and proactive medical equipment planning and management in accordance with accreditation standards creates a strong foundation for the delivery of high quality health care. IHS headquarters officials told us that they use the existing Nuvolo data for planning and budgeting purposes. However, given what we found, IHS officials are relying on inaccurate and incomplete information for equipment planning or analysis purposes, such as replacement planning and budget forecasting. Thus, by not maintaining complete or reliable medical equipment data to be used for equipment planning and management purposes, IHS puts its ability to deliver high quality health care at risk. Further, without making at least one of the Nuvolo data fields related to equipment age mandatory, IHS continues to run the risk of not following its own policy that medical equipment inventories shall include useful life timeframes. It also risks continuing to rely on incomplete data for its equipment planning and budgeting purposes.

After learning about our findings, IHS headquarters officials acknowledged that they have some challenges with their medical equipment records, and said they were taking steps to address them in response to our findings. In April 2023, IHS headquarters sent an email asking each area office with federally operated facilities to develop a plan of action and milestones for IHS sites not currently using Nuvolo. Officials also noted that they have funded a new full-time national coordinator position to oversee the national effort to implement Nuvolo, and said they were in the hiring process for that position as of September 2023. They said that while no time frames had been established for areas to complete the above steps, the new Nuvolo national coordinator would be responsible for reviewing area action plans and milestones.

While these actions are a good first step, they will not address all of the data problems we identified. For example, IHS's described actions do not address the issue of the completeness and reliability of data related to medical equipment age and end of life. Additionally, while IHS headquarters has asked areas to develop actions plans for sites not using Nuvolo, this does not address the facilities, such as those in the Navajo area, which were using Nuvolo but not entering all equipment. Further,

our review was limited to three selected areas and 14 facilities. As such, the full extent of IHS's data problems are unknown. Without a broader assessment of the extent of data completeness and reliability problems across IHS, it will be difficult for areas to know which facilities need to take actions and the new national coordinator to determine whether area action plans are sufficient to address the problems. Once IHS knows the extent of the problems nationwide, it could benefit from developing a plan that addresses the causes of the problems and ensures that areas and service units have the guidance and resources necessary to correct the identified deficiencies.

Lack of Knowledge of Equipment Policy Adherence

IHS headquarters officials, and officials in one of our selected areas were not aware of the issues with adherence to medical equipment policy prior to our review. For example, Billings area officials were not aware that two of their service units were not actively using Nuvolo until they participated in some of our site visit interviews. Similarly, IHS headquarters officials were not aware that these service units were not using Nuvolo because they told us in May 2022 that they believed two small facilities in California were the only facilities that had not changed over to the Nuvolo system. Additionally, IHS headquarters officials were not aware that at least one area did not have a biomedical equipment governance committee, as required by policy.⁴⁷ According to IHS policy, area biomedical equipment governance committees have responsibilities including developing biomedical systems acquisition plans and recommending specific criteria for the planning, acquisition, testing, and certification of biomedical systems.⁴⁸

Headquarters officials said that they conduct activities intended to monitor adherence to policy, such as requiring each area's biomedical equipment governance committee to report information about their meetings to headquarters, requiring areas complete medical equipment management

⁴⁷The area that told us it did not have an area biomedical equipment governance committee, Billings, was also the area with multiple facilities that were not using Nuvolo for medical equipment inventory management at the time of our site visits. Headquarters officials suggested that the COVID-19 pandemic may have contributed to areas lack of compliance with policy, saying that a lot of normal activities like committee meetings were disrupted during the pandemic, and said some areas may not have been aware that they were supposed to have a biomedical equipment committee.

⁴⁸Indian Health Service, *Indian Health Manual*.

plans, and conducting occasional area site visits.⁴⁹ However, headquarters officials said that the last time they verified that all areas had biomedical equipment committees was around 2017. In addition, headquarters officials said that they do not typically review the medical equipment committee reports that areas are required to submit, which may be why they did not know that one area did not have a biomedical equipment governance committee. IHS headquarters officials said that issues such as new staff, lack of staff, and the postponement of in-person area reviews during the pandemic had all contributed to headquarters not identifying the compliance issues with medical equipment policy.

The fact that IHS did not detect the medical equipment data quality issues or know about the lack of a biomedical equipment committee in at least one area indicates that its current monitoring activities are not effective. IHS's lack of effective monitoring is inconsistent with its Strategic Plan and its objective to "Secure and effectively manage the assets and resources", and its related strategy to "strengthen management and operations through effective oversight."⁵⁰ It is also inconsistent with federal standards for internal control that call for management to use quality information to achieve their objectives and operate monitoring activities and evaluate any issues.⁵¹

In response to us informing them about the lack of a biomedical equipment governance committee in one area, IHS headquarters sent an email to area offices in April 2023 asking them to re-establish bi-annual biomedical equipment governance committee meetings and submit the minutes to headquarters. However, unless headquarters officials begin regularly reviewing these minutes and verifying that all areas are submitting them, IHS will not have assurances that areas are adhering to IHS policy. Further, IHS headquarters officials said that they will aim to visit two area offices per year to evaluate their medical equipment

⁴⁹According to IHS policy, area biomedical equipment governance committees are required to meet semiannually. A meeting report is to be provided to headquarters within 30 days that documents the decisions of the committee. The report should include the planned equipment purchases or repairs, completion dates, any urgent end of useful life equipment issues not addressed, and a copy of the equipment inventory. Based on the two examples provided by IHS, the contents of area medical equipment management plans can vary but contain area procedures for things such as incoming medical equipment testing and preventive maintenance.

⁵⁰Indian Health Service, Indian Health Service Strategic Plan Fiscal Year (FY) 2019-2023 (Rockville, Md.: July 9, 2019).

⁵¹[GAO-14-704G](#).

program. However, such oversight is not likely to identify problems like those we identified during our review in a timely manner. In contrast, regularly reviewing and analyzing medical equipment data could help headquarters officials more promptly identify data problems when they arise.

Without effective monitoring, IHS headquarters does not have reasonable assurance that area and service unit officials are carrying out their medical equipment inventory management responsibilities. These responsibilities include maintaining their medical equipment inventories in the agency's standardized computerized inventory management system, as required by policy. As in this case, the absence of regular monitoring by IHS headquarters has led to the inability to identify and correct problems with adherence to IHS policy in a timely manner. As noted earlier, the lack of complete or reliable medical equipment data to be used for equipment planning and management purposes, puts IHS's ability to deliver high quality health care at risk. Furthermore, noncompliance with The Joint Commission requirements, depending on the scope and severity of noncompliance, can put a facility's accreditation at risk, potentially disrupting patient care and the facility's ability to continue participating in Medicare.

IHS Reported Recent Improvements in the State of Medical Equipment, but Maintenance and Replacement Challenges Remain

Although we could not use IHS data to determine the state of medical equipment at its federally operated facilities, officials from IHS headquarters and some of our selected areas and service units told us that substantial influxes of money in recent years have allowed for the replacement of a great deal of medical equipment, but replacement and maintenance challenges remain. In particular, HHS's Nonrecurring Expenses Fund, as discussed previously, and COVID-19 relief funding were cited as key resources for replacing medical equipment.⁵² For example, IHS headquarters officials reported receiving \$70 million from HHS's Nonrecurring Expenses Fund from 2017 through 2018 to purchase medical equipment.⁵³ In addition, IHS headquarters allocated \$23 million from American Rescue Plan Act of 2021 funding for COVID-19 related equipment needs. Some area and service unit officials also mentioned using money from the Nonrecurring Expenses Fund and COVID-19 relief

⁵²IHS headquarters officials said that federally operated facilities and Tribal health programs used COVID-19 relief funding for services, supplies, and building systems to respond to COVID-19, citing to the Coronavirus Response and Relief Supplemental Appropriations Act, 2021 and the American Rescue Plan Act of 2021.

⁵³IHS officials said that the agency has not received any additional Nonrecurring Expenses Fund money for medical equipment replacement since 2018.

funds for medical equipment replacement. For example, Billings area officials told us that the majority of the area's medical equipment had been replaced since 2017 as a result of an influx of funding from these sources.

Despite this influx of funds, officials from all of our selected service units also reported having remaining medical equipment replacement needs. Among our selected Great Plains area facilities—the area we reviewed with the most complete and reliable Nuvolo data—about 27 percent of medical equipment was past its listed end of life date.⁵⁴ In addition, staff from five of our selected service units mentioned having optometry equipment that was old and in need of replacement. Officials from the Northern Cheyenne Health Center noted that medical equipment adequacy varied by department, with their urgent care department having more updated equipment—some of which they were able to replace during the COVID-19 pandemic. In contrast, they said all of the medical equipment in their optometry department is obsolete. See figure 8 for pictures of old optometry equipment observed at two of our site visit facilities.

⁵⁴About 93 percent of medical equipment in our selected Great Plains area facilities' Nuvolo inventories had an end of life date listed. Of those 3,671 assets, 28 percent were past their listed end of life date.

Figure 8: Old Optometry Equipment at Two Indian Health Service Facilities in Need of Replacement



Source: GAO. | GAO-24-105723

IHS officials from headquarters and our selected areas and service units described various challenges that limit their ability to replace and maintain medical equipment, including ongoing funding constraints, and other challenges like filling staffing vacancies.

Funding constraints. Officials from all three of our selected areas said that the regular annual appropriations they receive for medical equipment are insufficient for their needs. In addition, Great Plains and Navajo area officials expressed concerns about how they would replace equipment in the future. Great Plains officials said that without another funding influx, they will likely be in a position similar to where they have been in the past—trying to manage their medical equipment on a budget that only addresses about 20 percent of their needs. Similarly, Navajo area officials estimated that they would need about \$4 million annually to stay ahead of replacement needs, but they received about \$1.85 million for their federally operated facilities in fiscal year 2022. See table 3 for the medical

equipment funding allocated from appropriations in fiscal year 2022 to IHS areas for their federally operated facilities.

Table 3: Medical Equipment Funding Allocated to Federally Operated Indian Health Service (IHS) Facilities, by Area, Fiscal Year 2022

| IHS area | Equipment funding allocation |
|---------------|------------------------------|
| Albuquerque | \$754,225 |
| Bemidji | \$425,520 |
| Billings | \$700,880 |
| California | \$50,210 |
| Great Plains | \$1,206,403 |
| Nashville | \$43,068 |
| Navajo | \$1,853,992 |
| Oklahoma City | \$922,484 |
| Phoenix | \$1,301,915 |
| Portland | \$317,400 |
| Total | \$7,576,097 |

Source: GAO summary of IHS data. | GAO-24-105723

Notes: This table includes data for the 10 IHS areas with federally operated facilities. There are no federally operated medical facilities in the remaining two IHS areas—Alaska and Tucson.

Some service unit officials we spoke with noted that while recent funding influxes have resulted in them being in a better position with regard to medical equipment than they have been in the past, they also had concerns about how they would replace this equipment in the future when it reaches its end of life. For example, as we toured the Crow/Northern Cheyenne Hospital, an official pointed out a computed tomography (CT) scanner that had recently been purchased using money received from HHS’s Nonrecurring Expenses Fund, but that would need to be replaced again in about 5 years (see fig. 9). Some CT scanners previously purchased by IHS have cost more than \$500,000, while the total amount of medical equipment funding the Crow/Northern Cheyenne Hospital was allocated in fiscal year 2022 was under \$119,000.

Figure 9: Recently Purchased Medical Equipment at the Indian Health Service Crow/Northern Cheyenne Hospital



Computed tomography (CT) scanner.

Source: GAO. | GAO-24-105723

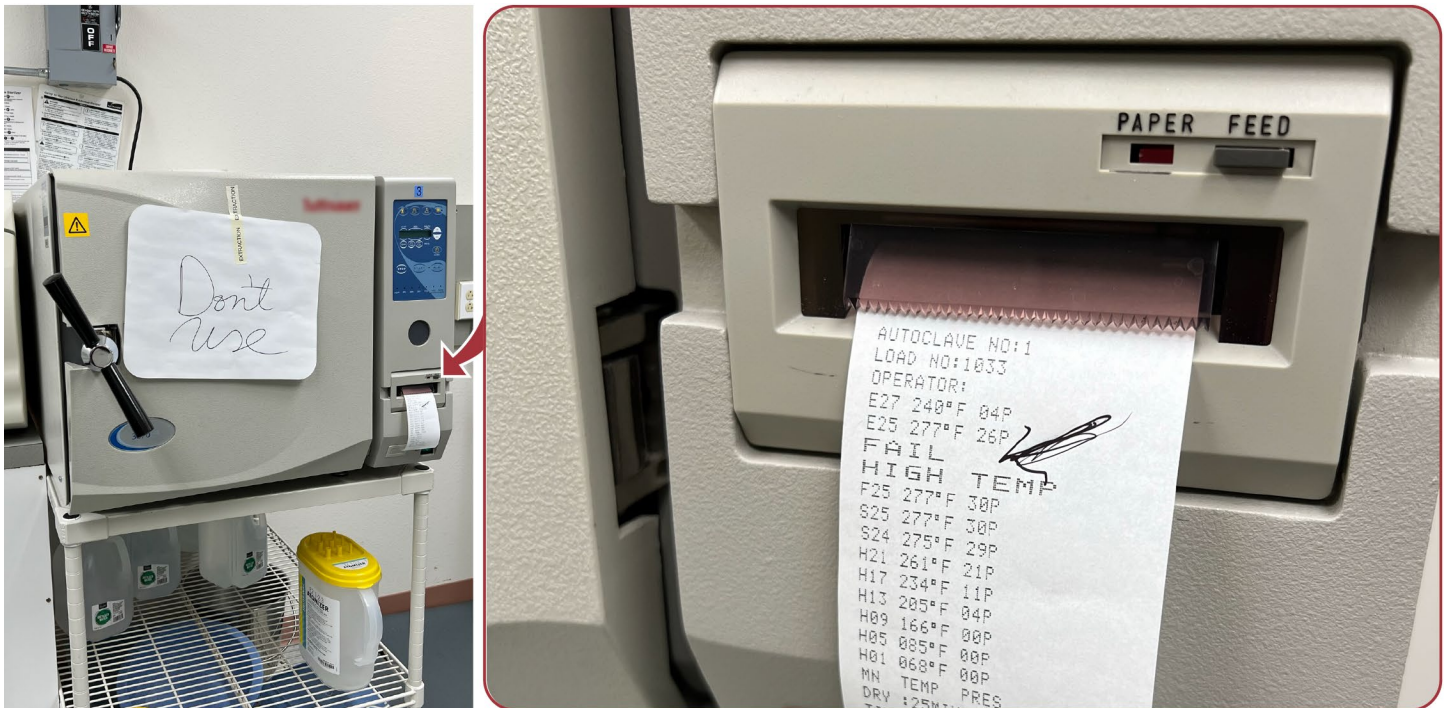
IHS's medical equipment policy states that third-party collections should also be used as a source of funding for medical equipment maintenance and replacement; however, IHS officials from our selected areas explained that there are competing demands for these funds. For example, across Great Plains facilities, area officials said, they sustain about half of their operating costs, such as salaries, with third-party collections, reducing their ability to use these funds for medical equipment or facility improvements. Similarly, while Navajo area facilities do use third-party collections to support their medical equipment needs, area officials said doing so takes away from funding for staffing and expanding health programs. Additionally, Billings area officials noted differences in the amount of third-party collections among states in their area and said that facilities in states like Wyoming that have not expanded Medicaid

eligibility have less third-party collections funding to use for such purposes.⁵⁵

Other challenges. In addition to funding challenges, IHS headquarters, area, and service unit officials described other challenges related to replacing or repairing aging medical equipment. Many of these challenges are similar to those reported for addressing aging facilities, such as challenges related to procurement, supply chain delays for medical equipment, and filling staffing vacancies such as biomedical engineers. For example, IHS headquarters officials said that due to shortages of business and acquisition staff, service units often have to rely on medical personnel to fulfill acquisition-related responsibilities. However, they said these staff may be too busy with their medical duties or they may not have the necessary experience to perform these acquisition-related tasks. Additionally, a Great Plains area official noted that both of the service units we selected in the area had vacancies for biomedical engineers. As such, they did not have the capacity locally to repair equipment. In addition, because one of the service units is in a remote area, there are no vendors nearby who can service their equipment. According to the official, this had led to situations in which vendors come from very far away only to find out that they brought the wrong part. They then have to go back for the correct part, which delays the equipment repair. See figure 10 for photos of a piece of dental equipment awaiting a vendor repair at one of our site visit facilities.

⁵⁵Beginning in 2014, the Patient Protection and Affordable Care Act provided states with the option to expand Medicaid eligibility to certain adults with incomes below a threshold; required the establishment of health insurance exchanges; and provided certain American Indians and Alaska Natives with cost sharing exemptions for private health insurance plans purchased on the health insurance exchanges. Pub. L. No. 111-148, 124 Stat. 119 (2010), as amended by the Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, 124 Stat. 1029 (2010). In September 2019, we reported that the resources available to both federally operated and tribally operated facilities had grown in recent years, and that facilities were increasingly relying on third-party collections to maintain their facilities' operations and expand services. See GAO, *Indian Health Service: Facilities Reported Expanding Services Following Increases in Health Insurance Coverage and Collections*, GAO-19-612 (Washington, D.C.: Sept. 3, 2019). According to KFF, as of July 2023, there were 10 states that had not adopted Medicaid expansion—Alabama, Florida, Georgia, Kansas, Mississippi, Tennessee, Texas, South Carolina, Wisconsin, and Wyoming. One more state, North Carolina, has adopted but not implemented Medicaid expansion. See KFF, "Status of State Medicaid Expansion Decisions: Interactive Map," (Jul. 27, 2023), accessed August 17, 2023, <https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/>.

Figure 10: Broken Dental Sterilization Equipment Awaiting Vendor Repair at the Indian Health Service Northern Cheyenne Health Center



Dental sterilization equipment.

"FAIL HIGH TEMP" - Diagnostic report

Source: GAO. | GAO-24-105723

Another medical equipment related challenge mentioned by IHS headquarters and some area and service unit officials relates to the interface between medical equipment and IHS's technology, electrical, and heating and cooling infrastructure. For example, Navajo area officials noted a problem with their existing technology and electrical infrastructure's ability to support certain medical equipment. The officials explained that they need additional imaging equipment and ultrasound machines in the area, but they are limited by bandwidth for image transfers. Similarly, Great Plains area officials said they have challenges using cloud-based devices due to shortcomings with their technology infrastructure. In another example, Rosebud service unit officials told us that there are limited places in the hospital where they are able to plug in electrical equipment, and that they experience power outages and surges at their facility, which negatively affect medical equipment. Sensitive medical equipment may reset, taking hours to reboot—which in turn, delays patient care.

Additionally, when facility infrastructure is not adequate for a new piece of medical equipment, the equipment can break down faster, leading to repairs that cannot be covered within a service agreement, according to Gallup service unit officials. For example, the officials described that their electric sterilizer for medical instruments is in a location that has both temperature and humidity issues that cause wear and tear on the sterilizer. As a result, the sterilizer had been out of service for 2 months at the time we spoke to them. Officials noted that they received a quote of \$25,000 for upgrades to the sterilizer, but this would only temporarily maintain the equipment. In the meantime, they were using an older backup sterilizer. However, the officials noted if the backup sterilizer needed replacement parts it would be a challenge, since the sterilizer is so old.

Despite IHS Mitigation Efforts Such as Transferring Patients, Aging Facilities and Equipment Negatively Affect Care

Efforts to Mitigate Effects of Aging Facilities and Equipment Include Transferring Patients to Other Facilities

To help minimize harmful effects on patients, IHS policies call for prioritizing items that pose a risk to safety when addressing facility deficiencies or medical equipment replacement. For example, IHS policy states that in determining which service unit projects to fund, area offices are generally to give the highest weight and priority to projects related to life safety, general safety, and accessibility compliance.⁵⁶ Consistent with IHS policy, Billings area officials explained that they prioritize the repair or replacement of life safety related facility deficiencies first to avoid harm to patients, or any deficiencies that would risk them losing their accreditation. They also noted that while vital medical equipment like defibrillators and electrocardiogram devices had been replaced, lower

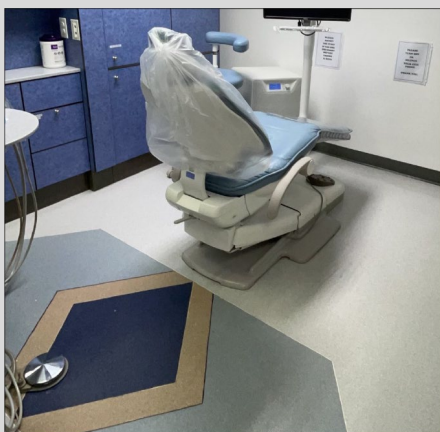
⁵⁶Indian Health Service, *Technical Handbook for Environmental Health and Engineering, Volume VI – Facilities Engineering*, Part 70 – Administration and Management. According to this IHS handbook, life safety deficiencies are deficiencies in building construction that must be corrected to be in compliance with codes such as the National Fire Code. General safety deficiencies result from a lack of compliance with federal, state, or local safety laws and regulations; or established health care industry and occupational safety standards and practices.

priority items like heat lamps and exam lights would be replaced when deemed required or when they become a priority.

IHS officials from headquarters and our selected areas and service units identified strategies they use to mitigate negative patient care effects when facility deficiencies or broken equipment cannot be simply or quickly addressed. We found that these mitigation strategies generally fell into four categories: (1) patient referrals or transfers, (2) facility or equipment work-arounds, (3) acquisition of ancillary buildings, and (4) other strategies, such as providing services via telehealth.

MacGyver Award

During a tour of the Indian Health Service (IHS) Wanblee Health Center in the Great Plains Area, officials pointed out floor designs throughout the building. These designs were facility maintenance staff's solution to cover up patched holes in the deteriorating flooring. An IHS official said that she presented the maintenance staff with a "MacGyver award" to recognize their inventive solutions like this to remedy deficiencies and beautify the facility.



Source: GAO. | GAO-24-105723

Patient referrals or transfers. IHS officials described transferring, diverting, or referring patients to other facilities for care when issues like facility closures or medical equipment failures disrupt their ability to provide care locally. For example, officials from the Pine Ridge service unit shared that, during the winter of 2021, water pipes in their inpatient unit froze and burst—which caused flooding and resulted in a closure of the inpatient unit for about two weeks. As a result, Pine Ridge officials stated they had to relocate 17 patients who were in the unit at that time. Some patients went to nearby hospitals, and other patients were relocated to other parts of the Pine Ridge hospital such as the emergency department. Officials said that while this event affected patient comfort levels, there were no clinical effects or adverse events. In addition, Navajo area officials shared that in 2022 one of their hospitals stopped admitting patients due to a boiler failure. Hospital staff also had to transfer patients to another facility for about 4 days and sent stable patients home.

Facility or equipment work-arounds. IHS officials described ways they use various types of work-arounds to mitigate negative effects of aging facilities and equipment on patient care, such as modifying facility infrastructure. For example, Gallup service unit officials said that in order to help prevent infection during the COVID-19 pandemic, they replaced curtains that separated emergency department bays with plastic sheeting to reduce airflow between the bays. Over the course of the pandemic, the sheeting wore out, and staff had to repair them with duct tape. Other examples of facility work-arounds observed during our site visits included things such as portable air conditioning units and other air venting units added to help with temperature control and air flow in their facilities. See figure 11 below for photos of some of these work-arounds.

Figure 11: Photos of Facility Work-arounds Used in Navajo Area Indian Health Service Facilities



Work-arounds developed by IHS facilities staff in the Navajo area to address issues such as air flow and temperature control.

Source: GAO. | GAO-24-105723

In an example of an equipment related work-around, officials at the Northern Cheyenne Health Center noted that the label machine—which prints patient identification bracelets as well as labels for medication—has been broken. As a result, they said they have been handling tasks manually, such as by hand-writing patient identification bracelets.

Acquisition of ancillary buildings. Some area and service unit officials described acquiring ancillary buildings, such as mobile or modular units, to address space constraints within the main facility, or to house medical equipment that could not be supported within the existing facility infrastructure. For example, Great Plains area officials said that it is common to see clinical programs, such as dental, optometry, and physical therapy in ancillary buildings because the space in their aging facilities is constrained. They also use ancillary buildings for administrative purposes. Similarly, during our tour of the Gallup Indian Medical Center campus, service unit officials pointed out numerous ancillary buildings that they added to house particular departments and equipment due to space or systems constraints within the facility. See figure 12 below for photos of some of these buildings.

Figure 12: Photos of Ancillary Buildings on the Gallup Indian Medical Center Campus



External modular units housing the mammogram machine, bone density scanner, and other departments.



Pediatrics immunization clinic building.



General surgery walk-in clinic building.

Source: GAO. | GAO-24-105723

Other mitigation strategies. Some IHS officials also mentioned other strategies they have used to mitigate negative patient care effects, including outsourcing certain clinical services such as drug compounding and utilizing community-based services like mobile mammograms.⁵⁷ For example, officials from the Crow service unit explained that their facility does not have space to provide mammography services. As a result, they have had a community-based mobile mammography unit come to the area to provide services once a month. See figure 13.

⁵⁷Drug compounding is the process of combining, mixing, or altering ingredients to create a drug tailored to the needs of an individual patient. Compounding is typically used to prepare medications that are not commercially available, such as medication for a patient who is allergic to an ingredient in a mass-produced pharmaceutical product.

Figure 13: Example of Community-based Mobile Mammogram Service Utilized by an Indian Health Service (IHS) Service Unit



Community-based mobile mammography van on site at the IHS Lodge Grass Health Clinic, Montana.

Source: GAO. | GAO-24-105723

In addition, officials from two IHS service units told us that they use telehealth services as a mitigation strategy to address limited space issues. While these officials noted using telehealth to address limitations in facility space, officials from some of our selected areas and service units noted that telehealth is more frequently used to expand the availability of services, such as for specialties for which recruitment is challenging or patient volume is low, than to mitigate the effects of aging facilities or equipment. For example, officials from the Crow Service Unit said they began using telehealth in 2020 both due to challenges with sufficient space and finding specialists who would work in the area full time. They said that their use of telehealth has resulted in improved care such as patients being able to access endocrinologists in three weeks instead of three months.

Despite Mitigation Efforts, Aging Facilities and Equipment Negatively Affected Care, Including by Creating Safety Risks

Despite IHS's mitigation efforts, officials we spoke with from IHS headquarters, the selected areas and service units, and tribes described both direct and indirect ways in which patient care has been negatively affected by aging facilities and equipment—or sometimes as the result of IHS's mitigation strategies themselves. We found that direct negative effects generally fell into the following five categories: (1) patient health or safety risks, (2) limitations on the provision of quality care, (3) patient care delays or deferrals, (4) accessibility limitations, and (5) negative patient experience or satisfaction.

Physical Environment Related Patient Care Risks Identified in Indian Health Service (IHS) Surveys by The Joint Commission

The Joint Commission, an accrediting body, conducts surveys to determine facility compliance with accreditation standards, including standards related to the physical environment in which care is provided. Findings of noncompliance with standards identified during these surveys are risk rated according to the likelihood the finding could cause harm to patients, staff, or visitors. These findings are referred to as requirements for improvement.

Six of our seven selected IHS service units were surveyed by The Joint Commission between 2019 and 2022. The surveys identified nine moderate risk and one high risk finding related to "Environment of care" or "Life Safety" requirements. Moderate risk findings included things such as countertops posing infection control risks. The one high risk finding related to the lack of an eyewash station near a corrosive liquid used in the hospital kitchen. Facilities have 60 days to submit corrective action for requirements for improvement. Officials from two IHS areas noted that they work with service units to ensure that Joint Commission findings are addressed.

Source: GAO summary of The Joint Commission IHS survey findings. | GAO-24-105723

Patient health or safety risks. These include risks for infection or injury resulting from facility or medical equipment deficiencies, such as overcrowded waiting areas or broken equipment. Multiple IHS officials we spoke with described infection control or public safety risks related to facility or equipment deficiencies at their facilities. For example:

- Pine Ridge service unit officials said that limited space and crowded conditions in the pediatric department made it difficult for them to treat children during COVID-19. Their inability to separate sick and healthy patients was reported as the top reason patients chose not to come in for care.
- Officials from the Northern Cheyenne Health Center shared that, at the time of our visit, they did not have a functioning electronic pill counter in the pharmacy and had to count pills manually. This increases the risk for committing errors, and increases the potential of a patient safety event.
- Officials from the Crownpoint service unit described that parts of the foundation of their facility are sinking due to the geologic makeup of the land. This sinking foundation created a gap between the emergency department entrance and the outdoors. The officials shared that, as of the time of our interview, at least one patient had fallen and gotten hurt because of this gap by the emergency department entry area. At the time of our visit, a ramp, cones, and caution signs were in place as a temporary work-around, but correcting this foundational issue will take some time, according to officials (see fig. 14).

Figure 14: Photo of a Fall Hazard at the Emergency Department Entrance of a Navajo Area Indian Health Service (IHS) Facility



"Caution: Uneven walkway. Fall Hazard." - Sign posted at the entrance to the emergency department at the IHS Crownpoint Comprehensive Health Care Facility.

Source: GAO. | GAO-24-105723

Limitations on the provision of quality care. Such limitations result from facility or medical equipment issues that prevent health care providers from delivering the highest quality health care to patients, such as care based on best practices and the latest scientific knowledge. For example:

- Officials from the Northern Cheyenne Health Center shared that their optometry department's obsolete medical equipment hinders the optometry staff's ability to provide high quality care to patients. For example, officials said they cannot transfer patient images electronically from equipment to their computers, or to other specialists. In addition, they said that sometimes the old equipment malfunctions and produces inconclusive test results. Because of this, they explained, patients have to be seen again for tests to be re-administered, which is inconvenient and leads to patient dissatisfaction.
- Officials from the Wind River service unit described that lack of space limits the number of providers they can bring in and services they are able to provide at the clinic. Specifically, the officials said they would like to provide bridges and crowns at their dental clinic, but right now they have no space for this service.

-
- Poor layout and lack of partitioned private spaces in the Fort Belknap emergency department makes it more challenging to provide care for patients with suicidal ideation, according to Billings area officials. Until they can improve the space, the officials said, the staff have to follow numerous checklists to accommodate people safely and minimize the risk of harm.

Patient care delays or deferrals. Patient care disruptions can result from the inability to provide care at a patient's local facility due to issues such as power outages, sewer leaks, or broken medical equipment. While referring and transferring patients is a mitigation strategy IHS uses, some service unit and tribal officials said that it can also lead to delayed care, and in some cases patients may opt not to receive care at another facility. For example:

- Officials from the Gallup service unit explained that they used to have a robust endoscopy and colonoscopy program, but it was shut down in 2017 by The Joint Commission due to temperature and humidity standards their aging heating and cooling system could not meet. They noted that as a result, they must refer patients to other facilities for these screenings, which delays care—and some patients may opt not to be screened when they are referred out. Officials said that because patients are not screened at Gallup, the providers see advanced stages of cancer that potentially could have been detected and treated earlier if not for the inadequate facility infrastructure.
- Officials from the Northern Cheyenne Health Center explained that they have a panoramic dental X-ray machine that malfunctions and disrupts staff's ability to provide care, including preventive care. They noted that if it takes a long time for a patient to be seen due to malfunctioning equipment, then other patients may leave and not be seen. In addition, if patients do not come back for care, it can lead to more severe dental problems.

Accessibility limitations. These effects include some facilities' inability to meet patient accessibility needs, such as those of patients using wheelchairs, due to facility or medical equipment deficiencies. For example, Pine Ridge service unit officials said that it is difficult to fit wheelchairs in bathrooms of their inpatient rooms, and Crow service unit officials said that some of their doors are not wide enough to accommodate wheelchairs.

Negative patient experience or satisfaction. Patient trust or perceptions of the quality of care provided can decline as a result of facility or medical equipment deficiencies. For example, Gallup service

unit officials shared that things like visible duct tape affect patients' perceptions of the quality of their care. Specifically, they explained that the plastic sheeting—held together with duct tape—in the emergency department in order to help prevent infection does not present positively to patients, even if the care provided is very good. This has led to complaints by patients or their families. Similarly, Navajo area officials said that older facilities like the Gallup Indian Medical Center are less aesthetically pleasing, which has a negative effect on patients' perceptions and confidence about the level of care they receive. They also noted that telling a patient that appointments are not available because of a sewer leak does not inspire confidence.

In addition to direct negative effects on patient care, IHS officials described other indirect ways patients can be affected by aging facilities and equipment, or by mitigation strategies such as transferring and referring patients. Specifically, some service unit and tribal officials described financial and other hardships for patients associated with transfers and referrals to distant locations, including transportation and accommodation costs. For example, an official from one Tribe shared challenges associated with a citizen being transferred to another city for health care services. The citizen, who did not speak English well, needed a family member to translate and transport her home from this other location. The official noted that there was nowhere for the family member to stay while services were provided because of the COVID-19 pandemic, and the cost of gas was very expensive. The official said these types of issues create hardships for families that might deter them from seeking needed care. IHS Navajo area officials also noted that transfers require more time and add risk of injury to the patient due to the need for transport and more movement to a different location.

In addition to financial hardships and safety risks for patients, referrals and transfers due to equipment or facility failures may be paid for with Purchased/Referred Care program funds, which can limit the availability of such funds for other patients or services.⁵⁸ For example, officials from

⁵⁸If federally operated or tribally operated facilities are unable to provide needed care, they may contract for health services from private providers through the Purchased/Referred Care program. The IHS Purchased/Referred Care program is funded through the annual appropriations process and administered at the local level by individual programs that are often affiliated with local facilities. Purchased/Referred Care program funding is limited and has traditionally been reserved for the most critical cases. IHS has established five medical priority levels. Funds permitting, federally administered Purchased/Referred Care programs first pay for all of the highest priority services, and then some or all of the lower priority services.

the Rosebud service unit told us that their facility has a flat roof, which has resulted in water leaking into their laboratory and on their CT machine. This has caused outages of the CT machine. When this occurs, the service unit has to spend its limited Purchased/Referred Care program funds to pay for patients referred to other facilities for CT scans while the machine is out of service. This means that those limited funds would no longer be available for other patients, such as for services that are not traditionally offered within the service unit.

Finally, IHS officials also described that aging facilities and equipment can have negative effects on employee satisfaction and recruitment and retention—which ultimately affect patient care. For example, IHS headquarters officials noted that new facilities and modern equipment are recognized as an important tool in recruiting and retaining doctors, nurses and other providers, and that IHS’s older equipment and facilities can deter applicants. Further, Gallup service unit officials noted that employees suffer a form of moral injury from seeing patients with severe injuries or advanced diseases like colon cancer that could have been treated more effectively if the facilities and equipment were in better shape, and patients were treated earlier.

Conclusions

Maintaining well-functioning medical facilities and equipment capable of supporting the provision of timely and quality care is critical for IHS to ensure that comprehensive health services are available and accessible to American Indian and Alaska Native people. However, IHS officials reported that challenges including funding constraints and insufficient staffing limit their ability to sufficiently address aging federally operated facilities and medical equipment. Given limited resources, IHS must prioritize needed facility improvements and equipment replacement—focusing on those items that would put its ability to deliver high quality patient care at risk.

To prioritize, IHS relies on data available from its service units about the state of its facilities and equipment. However, we found that IHS’s medical equipment inventory data at our selected areas and facilities were not complete or reliable enough to use for this purpose. Given that our review only included three of the 10 IHS areas with federal operated facilities, it is imperative that IHS determine the full extent of its medical equipment data quality problems and implement a plan to address the deficiencies identified. Additionally, making data fields that can be used to project when equipment will need to be replaced, such as data fields on equipment age or useful life, mandatory, as opposed to optional, would be consistent with IHS policy that medical equipment inventories include

useful life timeframes. It would also be an important step to helping improve IHS's data and thereby IHS's budgeting and efforts to plan for equipment needs. Finally, given that IHS was unaware that its medical equipment data were incomplete and unreliable, and that some service units and areas were not following medical equipment policy, the agency needs to improve its oversight. Improved monitoring, including timely remediation of identified issues, is essential for IHS to ensure that area and service unit officials are carrying out their medical equipment responsibilities. This, in turn, will help ensure that timely and quality health services are available and accessible to American Indian and Alaska Native people at IHS's federally operated facilities and to achieve its goal of raising the health of these individuals to the highest level.

Recommendations for Executive Action

We are making the following three recommendations to IHS:

The Director of IHS should assess the extent of the medical equipment data problems across all IHS areas and service units with federally operated facilities and develop and implement a plan to address any problems identified. The plan should include providing resources and guidance, as appropriate, to help ensure areas and service units have complete and reliable medical equipment data. (Recommendation 1)

The Director of IHS should make the completion of data fields about the useful life or age of its medical equipment mandatory in the agency's inventory management system, consistent with IHS policy. This could include data fields such as "end of life" or "acquisition date." (Recommendation 2)

The Director of IHS should ensure that headquarters officials regularly monitor area and services units' adherence to IHS medical equipment inventory management policy requirements. Such monitoring could include regularly reviewing area biomedical equipment governance committee meeting minutes and the agency's medical inventory equipment data to assess its completeness and accuracy. (Recommendation 3)

Agency Comments

We provided a draft of this report to HHS for review and comment. In its written comments (reproduced in appendix I), HHS noted that IHS concurred with all three of our recommendations and identified steps IHS is taking to implement them. For example, they noted that the new coordinator IHS is hiring for its inventory management system will be responsible for assessing the extent of medical equipment data problems across all federally operated service units. HHS also noted that in

response to our second recommendation, IHS made the “end of life” and “acquisition date” data fields mandatory in Nuvolo as of October 5, 2023. According to an IHS official, to complete implementation of this recommendation, the agency will be developing guidance for agency officials about medical equipment inventory management. In addition, to improve monitoring of adherence to medical equipment inventory management policy requirements, IHS will be providing agency-wide direction, including a new requirement for area office Directors to annually certify the accuracy of their medical equipment data. IHS headquarters officials will review this certification as well as area biomedical equipment governance committee meeting reports. HHS also provided one technical comment, which we incorporated.

We are sending copies of this report to the appropriate congressional requesters, the Secretary of Health and Human Services, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7114 or RosenbergM@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix II.



Michelle B. Rosenberg
Director, Health Care

Appendix I: Comments from the Department of Health and Human Services



DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation
Washington, DC 20201

October 13, 2023

Michelle B. Rosenberg
Director, Health Care
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Ms. Rosenberg:

Attached are comments on the U.S. Government Accountability Office's (GAO) report entitled, **"INDIAN HEALTH SERVICE: Many Federal Facilities Are in Fair or Poor Condition and Better Data Are Needed on Medical Equipment"** (GAO-24-105723).

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

Melanie Anne Egorin

Melanie Anne Egorin, PhD
Assistant Secretary for Legislation

Attachment

Appendix I: Comments from the Department of Health and Human Services

GENERAL COMMENTS FROM THE DEPARTMENT OF HEALTH & HUMAN SERVICES ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT REPORT ENTITLED - INDIAN HEALTH SERVICE: MANY FEDERAL FACILITIES ARE IN FAIR OR POOR CONDITION AND BETTER DATA ARE NEEDED ON MEDICAL EQUIPMENT (GAO-24-105723)

The U.S. Department of Health & Human Services (HHS) appreciates the opportunity from the Government Accountability Office (GAO) to review and comment on this draft report.

Recommendation 1

The Director of IHS should assess the extent of the medical equipment data problems across all IHS areas and service units with federally operated facilities, and develop and implement a plan to address any problems identified. The plan should include providing resources and guidance, as appropriate, to help ensure areas and service units have complete and reliable medical equipment data.

HHS Response

The Indian Health Service (IHS) concurs with GAO's recommendation.

The IHS is hiring a replacement Computerized Maintenance Management System (CMMS) Coordinator, expected to start by the end of October 2023, to assist the Headquarters IHS Office of Environmental Health and Engineering (OEHE) Biomedical Engineer. They will assess the extent of medical equipment data problems in the CMMS across all IHS areas for the federally operated service units. Once assessed, an implementation plan to correct the inventory will be developed. Additionally, they will develop an IHS CMMS guidance manual by March 31, 2024, that will include resources and guidance that the IHS area offices and service units will use to improve the CMMS medical equipment data.

Recommendation 2

The Director of IHS should make the completion of data fields about the useful life or age of its medical equipment mandatory in the agency's inventory management system, consistent with IHS policy. This could include data fields such as "end of life" or "acquisition date."

HHS Response

The IHS concurs with GAO's recommendation.

As of October 5, 2023, "end of life" and "acquisition date" (also known as, "installation date") are mandatory fields in Nuvolo, the IHS recognized CMMS.

Recommendation 3

The Director of IHS should ensure that headquarters officials regularly monitor area and services units' adherence to IHS medical equipment inventory management policy requirements. Such monitoring could include regularly reviewing area biomedical equipment governance committee meeting minutes and the agency's medical inventory equipment data to assess its completeness and accuracy.

HHS Response

The IHS concurs with GAO's recommendation.

**Appendix I: Comments from the Department of
Health and Human Services**

The HQ OEHE Biomedical Engineer is monitoring the medical equipment inventory data, and will collaborate with the CMMS Coordinator once on-board to ensure IHS area offices and service units' progress to remediate the IHS medical equipment inventory and monitor adherence to the medical equipment management policy.

The IHS will update its management of medical equipment with Agency-wide direction by March 31, 2024, which will reinforce that the IHS Area Directors hold semi-annual Area Biomedical Equipment Governance Committee meetings. This committee will manage risks, priorities, and funding for medical equipment in their respective areas, and will regularly generate semi-annual reports for the Area Director's review. The reporting will include the planned equipment purchases and/or repairs, any urgent or end of useful life equipment issues, and a copy of the CMMS equipment inventory to track progress.

The updated Agency-wide direction will require the IHS Area Directors to annually certify to IHS Headquarters that they are adhering to IHS policy on medical equipment and the accuracy of their CMMS medical equipment data. Headquarters OEHE will review the area certification and Area Biomedical Equipment Governance Committee reports to address data accuracy issues and identified challenges.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Michelle B. Rosenberg, (202) 512-7114 or RosenbergM@gao.gov

Staff Acknowledgments

In addition to the contact named above, Kelly DeMots (Assistant Director), Christina Ritchie (Analyst-in-Charge), Anna Pechenina, and Marie Suding made key contributions to this report. Sam Amrhein, Jacquelyn Hamilton, Jeanne Murphy-Stone, and Ethiene Salgado-Rodriguez also made important contributions.

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