



Interoperability for Texas: Powering Health 2022

**As Required by
House Bill 2641, 84th Legislature,
Regular Session 2015**

**Texas Health and Human Services
December 2022**



TEXAS
Health and Human
Services

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Executive Summary

[Texas Government Code, Section 531.0162\(f\)](#) requires the Texas Health and Human Services Commission (HHSC) to:

- Report on HHSC's and all Health and Human Services (HHS) agencies' progress in ensuring all information systems maintained by the state that send or receive protected health information (PHI) from a healthcare provider after September 1, 2015, are interoperable with one another and meet the appropriate specified standards.
- Conduct an assessment of the measurable progress made in achieving goals related to the exchange of health information, including facilitating care coordination among the agencies, ensuring quality improvement, and realizing cost savings.

This is the fourth biennial submission to the Legislative Budget Board and the Office of the Governor outlining HHS agencies' efforts to implement interoperability. The *Interoperability for Texas: Powering Health 2022* report:

- References policy and program changes at the federal and state level since the [Interoperability for Texas: Powering Health 2020 report](#) (2020 report);
- Describes information systems exchanging PHI within and across HHS agencies, including HHSC and Texas Department of State Health Services (DSHS), as well as between HHS agencies and healthcare providers;
- Outlines how HHS agencies continue to develop and engage in initiatives to improve interoperability, collaborating across the HHS system as well as with external stakeholders; and
- Provides updates to program and service plans to improve interoperability and describes additional progress made to support interoperability since the 2020 report.

Introduction

According to Section 4003 of the 21st Century Cures Act,¹ interoperability is the ability to exchange and use electronic health information without special effort on the part of the user and in a way not constituting information blocking.²

Interoperability improves the ability of data users, such as healthcare providers, public health workers, patients, and researchers to share and work with a wide range of data that may improve patients' health. This data may also aid in the development and implementation of health programs and new treatments.

Interoperability enables providers to have up-to-date clinical summaries of patients' health information, which supports informed decision-making. Interoperable systems can assist in cutting healthcare costs by limiting unnecessary or duplicative tests, reducing the time and resources needed to collect and process records manually, and identifying appropriate interventions using computer-assisted decision making. In addition to the need for secure exchange of information, completeness, accuracy, and timeliness of data are critical. Reliable data may eliminate or reduce follow-up activities that are often time consuming, ensuring all necessary data reaches the consumer.

Section 531.0162(f) of the Texas Government Code directs HHSC to report HHS agencies' progress on advancing the interoperability of HHS information systems that exchange PHI within and across HHS agencies and between HHS agencies and healthcare providers. This requirement is included in the HHS Use of Health Information Exchanges and Interoperability Policy.³

¹ <https://www.healthit.gov/topic/interoperability>. Accessed August 31, 2022.

² Information blocking is a practice likely to interfere with the access, exchange, or use of electronic health info., except as required by law or specified in an information block exception. <https://www.healthit.gov/topic/information-blocking>

³ <https://hhsconnection.hhs.texas.gov/sites/intranet/files/policies/it/c-044.pdf>. Accessed October 21, 2022.

Background

Interoperability allows for the efficient and secure exchange of PHI across healthcare organizations, including providers, payers, and health departments. It enhances care coordination and healthcare services, controls or reduces costs, aids in research and enables quicker identification of and response to public health concerns. Key focus areas include building and maintaining infrastructure as well as modernizing and adopting technology that promotes interoperability; adoption of national standards; engaging stakeholders; increasing electronic data exchange and using data for informed decision making.

HHS agencies' current interoperability goals align with HHSC's [Health Information Technology \(IT\) Strategic Plan](#) and the final [Texas State Medicaid Health IT Plan](#), submitted to Centers for Medicare and Medicaid Services (CMS) in March 2022. The interoperability goals include:

- Updating, integrating, and standardizing health information systems and their data to increase efficiency, improve public health reporting, and reduce waste of resources and administrative burden.
- Expanding health information exchange (HIE) capacity in the state with particular focus on Medicaid, public health, and behavioral health services. HHSC updates its HIE goals annually and reports to CMS quarterly on progress based on approved outcomes and metrics.
- Increasing access to health data for providers, patients, payers, and other organizations to support improved quality of care, better patient outcomes, lowered costs, enhanced fraud detection, and public health.
- Fostering collaboration across the HHS system and between its agencies and stakeholders to bridge gaps and act to improve interoperability in Texas.
- Promoting telemedicine, telehealth, and telemonitoring to increase access to value-based healthcare, especially for rural communities.

The 2020 report details standards used in Texas for exchanging PHI. The following sections refer to updates to federal and state policies and programs, and how HHS supports specified standards.

Federal and State Changes

Below are federal and state program changes related to interoperability since the 2020 report.

Federal Interoperability Program

The Medicaid Promoting Interoperability (PI) Program, which required providers to meet minimum Medicaid patient volume thresholds and established program metrics and quality measures, ended payments in December 2021 and is closed for provider participation. Administrative tasks related to program close out, including decommissioning of Texas' PI program system, will end by September 30, 2023. Between 2011 and 2021, the PI Program enabled HHSC to deliver payments of approximately \$867 million in 100 percent federal electronic health record (EHR) incentive funding to nearly 11,500 providers and hospitals via Medicaid.

Broadband Internet in Texas

Broadband internet provides a higher speed of data transmission than dial-up, which is important for telemedicine and HIE. HHS offices, hospitals, and labs rely on broadband connections to provide critical services to patients through telemedicine, data exchange, and during public health emergencies (PHEs).

In 2020, the Governor's Broadband Development Council published its first annual report. The Council is tasked with researching barriers to establishing broadband in unserved areas; studying solutions to overcome them; and analyzing how statewide access would benefit Texas, including for emergency preparedness and delivery of healthcare services. The report noted Texas is one of only six states without a statewide broadband plan and emphasized how the novel coronavirus (COVID-19) PHE showcased the need for broadband in rural and unserved areas of Texas. The 2021 report noted that the Council's recommendations were included in House Bill (H.B.) 5, 87th Legislature, Regular Session, 2021, which requires a statewide broadband plan within 12 months of bill signing.⁴

⁴ <https://gov.texas.gov/business/page/governors-broadband-development-council>. Accessed October 20, 2022.

Collaboration and Stakeholder Engagement

Internal Collaboration

HHSC's Office of e-Health Coordination (OeHC) leads the coordination and implementation of Health Information Technology and HIE initiatives across HHS. The OeHC creates infrastructure for collaboration across multiple HHS divisions or agencies, focusing on health information policy and technology to improve health outcomes. Since the 2020 report, OeHC coordinated the implementation of the Pediatric Tele-Connectivity Resource Program for Rural Texas (Pedi Tele-Conn Program).⁵ Also, OeHC assessed and reported on the interoperability needs and technological readiness of behavioral health providers in Texas, per Senate Bill (S.B.) 640, 87th Legislature, Regular Session, 2021.⁶

Provider and Stakeholder Engagement

The e-Health Advisory Committee (eHAC) advises HHS agencies on interoperability, behavioral health and telemedicine, telehealth, and home telemonitoring. eHAC provided input on the implementation of H.B. 4, 87th Legislature, Regular Session, 2021, pertaining to the use of telemedicine, telehealth, and audio-only for Medicaid services during the COVID-19 PHE. In 2022, the eHAC collaborated with HHSC for the implementation of S.B. 640 and recommended HHS adopt the 2022 US@ standardized approach⁷ for patient addresses to improve records matching.

Additional stakeholder engagement includes DSHS and HHSC's participation in an *ex officio* capacity on the board of the Texas Health Services Authority (THSA). HHS staff also participate in discussions with external organizations, including the Health Level Seven International (HL7), a standards-setting organization. HHS activities related to these collaborations are detailed further in this report.

⁵ Additional information will be available in the pediatric tele-connectivity report in December 2022.

⁶ HHSC collaborated with internal and external stakeholders to develop and share a survey with behavioral health providers. Survey results can be found in the August 2022 [Interoperability Needs and Technology Readiness of Behavioral Health Services Providers](#) report.

⁷ The first release of the US@ standard occurred in 2022 and combines a format specification by the United States Postal Service and an approach for standardizing the content of those fields.

Program and Service Updates

Health and Human Services

HHS is currently supporting multiple projects related to interoperability. Many of these projects focus on initiatives within the Medicaid Enterprise Systems (MES). HHS is in the planning phase to adopt the Fast Healthcare Interoperability Resources (FHIR) standard.⁸ The FHIR standard facilitates the linking of financial, administrative, and clinical transactions to clients. Technology applications within MES will use the FHIR standard to improve data sharing between systems and make access to patient health data seamless for providers, patients, and administrators. HHS' plans to adopt FHIR align with HHSC's Medicaid Management Information System modernization plans to develop and deploy a MyHealthEData application programming interface (API) that will comply with CMS' Interoperability and Patient Access Final Rule. HHS plans to work with stakeholders to determine how and when FHIR will be deployed in the following biennium.

HHSC is also improving program service delivery areas by ensuring access to healthcare data and data sharing is in near real-time and uses modern standards. HHS is starting its information technology infrastructure modernization by migrating existing HHS systems and applications away from legacy system data sharing interfaces to web-services, specifically the representational state transfer (RESTful) API.⁹

Health and Human Services Commission

HIE Data Connectivity

The 2020 report details the HIE Connectivity Project, led by HHSC. The HIE Connectivity Project consists of three strategies to increase HIE use by Medicaid providers and create new HIE capacity in Texas. CMS most recently approved continuing the HIE Connectivity Project through federal fiscal year 2023. Below are updates to the three strategies since the 2020 report.

⁸ FHIR is a standard for exchanging healthcare information electronically. It builds on previous standards developed by HL7. <https://www.hl7.org/fhir/overview.html>. Accessed October 20, 2022.

⁹ <https://www.redhat.com/en/topics/api/what-is-a-rest-api>. Accessed October 20, 2022.

Strategy 1: Medicaid Provider HIE Connectivity

Strategy 1 assists three of the state's five local HIEs with connecting to Medicaid ambulatory providers and hospitals by offering funds to offset the costs of establishing new connectivity. This strategy was designed to increase the number of connected providers needed to create meaningful exchange of clinical data across Texas.

- Strategy 1 success is measured by the number of Medicaid providers onboarded through local HIEs. The federal fiscal year 2022 goal was 350 Medicaid providers.
- As of September 30, 2022, 464 providers from 105 ambulatory practices and 44 hospitals were onboarded.

Strategy 2: Texas HIE Infrastructure

Strategy 2 enhances Texas' HIE infrastructure to support connectivity with Texas Medicaid and assists local HIEs in connecting to HIETexas (the state-level shared services platform managed by THSA). This infrastructure supports delivery of HL7, Version 2 (HL7v2) Admission, Discharge, Transfer (ADT), and Consolidated Clinical Document Architecture (C-CDA) documents to Texas Medicaid, as well as data exchange between Medicaid providers, hospitals, and managed care organizations (MCOs). This functionality promotes multiple PI measures, including lab results, transitions of care, immunization registry reporting, electronic lab reporting to public health, syndromic surveillance, and reporting to specialized registries.

- Strategy 2 success is measured by the number of local HIEs connected to HIETexas, with a federal fiscal year 2022 goal of five local HIEs.
- As of September 30, 2022, three local HIEs were connected.

Past and current HIE infrastructure projects include, but are not limited to:

- Implementation of a Master Patient Index and integration engine for HL7v2, one of the most implemented healthcare messaging standards in the world,¹⁰ which allows for the exchange of clinical data between systems;

¹⁰ http://www.hl7.org/implement/standards/product_brief.cfm?product_id=185. Accessed October 19, 2022.

- Implementation of an audit and logging system to monitor all data flow regarding provider connectivity and Emergency Department Encounter Notification (EDEN);
- Implementation of an administrative user interface and statistical dashboard for Medicaid to monitor data flows pertaining to strategies 1 and 3;
- Configuration and maintenance of systems implemented in support of strategies 1 and 3;
- Integration work to deliver data to Medicaid; and
- Integration with local HIEs to assist in connecting to HIETexas in support of strategies 1 and 3.

Strategy 3: EDEN

EDEN provides near real-time Emergency Department (ED) ADT notifications via HIETexas. EDEN is implemented using push technology, a recently added exchange modality in the Trusted Exchange Framework and Common Agreement (TEFCA) developed by the Office of the National Coordinator for Health Information Technology.¹¹ With ADT data transmitted to Texas Medicaid, subscribing MCOs and providers can enhance care for patients. ADT data assists in soothing care transitions. Diagnosis and admissions data are valuable for care coordination and allow MCOs to automate prior authorizations. ADT data also supports Texas Medicaid’s efforts to reduce inappropriate ED use by enabling identification of clients in need of education on non-emergent alternatives and improves follow-up care.

- Strategy 3 success is measured by the number of local HIEs contributing hospital ED ADT data, with a federal fiscal year 2022 goal of five local HIEs.
- As of September 30, 2022, the three local HIEs contracted through this project sent ADT and C-CDA data to Texas Medicaid, of which two are also sending ED ADT messages.

In 2021, THSA began directly connecting with Texas hospitals to receive ED ADT data. As of October 2022, 102 direct connections were made.

¹¹ The overall goal of TEFCA is to establish a universal floor for interoperability nationwide. <https://www.healthit.gov/topic/interoperability/policy/trusted-exchange-framework-and-common-agreement-tefca>. Accessed October 20, 2022.

HIETexas Patient Unified Lookup System for Emergencies

During declared disasters, HIETexas Patient Unified Lookup System for Emergencies (PULSE), a subproject of strategy 2, allows verified and onboarded responders access to patient documents from providers connected through local HIEs and national networks. This enables access to clinical data for over 205 million people and medication history for 324 million people. This data may be vital to coordinate care for at-risk patients.

- The PULSE COVID system was in operation throughout the 2020 hurricane season and was upgraded to PULSE Enterprise Edition (PULSE EE) in 2021. PULSE EE provides additional user capacity, improved operational reporting, and integration with push data sources to support family reunification. At the time of this report, PULSE EE is not yet deployed in Texas. However, PULSE EE was used to enroll users in Louisiana after Hurricane Ida. The Louisiana experience will inform future deployment in Texas.
- THSA is collaborating with DSHS to provide PULSE access for qualified first responders. At the time of this report, CMS is reviewing HIETexas PULSE for certification. To be considered successful, PULSE must be reliable, accessible, and minimally burdensome to users.

Performance Management Analytics System

HHSC's Performance Management Analytics System (PMAS) data engineering team began planning a data repository for the HIE Connectivity Project in 2021. At the time of this report, HHSC has received an average of 51,500 Medicaid patient ADTs monthly. Additionally, there are 167,000 C-CDAs containing summaries of patient encounters. The planning for PMAS includes developing a database and a prototype for reporting and dashboard visualization for analysis across HHS programs. Once the database is operational, PMAS will begin working with HHSC behavioral health services to report on hospitalizations and ED visits of behavioral health clients to improve care coordination. Initially, the report will only include Medicaid clients; however, PMAS is working to acquire non-Medicaid HIE data for more complete reporting on behavioral health clients.

Interoperability Center of Excellence

HHSC is developing data sharing technology services through the Interoperability Center of Excellence (iCoE), a standards-based, centrally managed and HHSC-governed platform for secure data exchange between HHS agencies, healthcare providers, MCOs, and other entities. Integrating an ecosystem of people, processes, technologies, and standards, the iCoE will support the exchange and integration of select population health data and will evolve to support the incorporation of data for an array of HHS programs.

The iCoE, which launched in October 2022, advocates for data quality, best-practices, and industry standards such as the National Institute of Standards and Technology, HL7v2 and version 3, C-CDA, Structured Product Labeling, and FHIR. HHS will update its information systems to leverage the expertise of the iCoE. As part of HHS architectural governance, any proposed system updates are subject to the Architecture Review Board for approval.

Intellectual and Development Disabilities and Behavioral Health Services

HHSC continues to promote interoperability between providers' systems for state and contracted intellectual and developmental disabilities (IDD) and behavioral health services. Due to limited national standards, HHSC, in collaboration with stakeholders, is developing Texas-specific standards for the exchange of data from behavioral health evaluations. In 2022, HHSC surveyed Texas behavioral health providers to evaluate their technological readiness and needs for improved interoperability. Results were used to create an implementation plan and timeline.¹²

Intellectual and Developmental Disability Services

Home and Community-based Services Program and Texas Home Living Program Interest Lists Migration

Since the 2020 report, HHSC enhanced technology and improved operational practices for providing long term services and supports to people with an IDD through the Home and Community-based Services (HCS) and Texas Home Living (TxHmL) waiver programs. On May 1, 2022, HHSC migrated existing HCS and

¹² Additional information regarding the survey and results are in the [Interoperability Needs and Technology Readiness of Behavioral Health Services Providers](#) report.

TxHmL interest list information to the Community Services Interest List system. HHSC also transitioned HCS and TxHmL form submission and processing to Texas Medicaid & Healthcare Partnership's Long-term Care (LTC) Online Portal.

Preadmission Screening and Resident Review

System enhancements are made to the LTC Online Portal each fiscal year to improve current functionality regarding Preadmission Screening and Resident Review (PASRR) requirements. The following are enhancements released in the last few years:

- Medicaid eligibility was added to the PASRR Comprehensive Service Plan form to easily identify when a person is not receiving specialized services due to lack of Medicaid eligibility.
- Local authorities, which includes Local Intellectual and Developmental Disability Authorities (LIDDAs), Local Mental Health Authorities, and Local Behavioral Health Authorities, gained the ability to search and access additional forms for an individual to aid in PASRR evaluations.
- A new validation error message was added to let the provider know which field has incorrect information when submitting a form or meeting. Standardizing demographic information validations on PASRR forms improves data quality and ensures consistency, reducing sequencing and searchability issues due to mismatched or incomplete information across forms.

Electronic Interface Project

Since the 2020 report, HHSC also began the Electronic Interface Project to establish an interface between LIDDAs' EHR systems and the LTC Online Portal for forms related to IDD programs. This will allow LIDDAs to enter information into select forms housed in their EHRs and send that data through an automated interface to the same forms built into the LTC Online Portal, minimizing duplication and inconsistencies across forms/data systems, and supporting records overall.

Batching in Clinical Management for Behavior Health Services for Substance Use Disorder Treatment Providers

At the time of this report, HHSC-funded substance use disorder (SUD) treatment providers entered all data manually into the Clinical Management for Behavior

Health Services (CMBHS) system. HHSC, in collaboration with SUD treatment providers, is piloting a project to facilitate automated batch upload of client records from SUD treatment providers' EHRs into the CMBHS system. The pilot, if successful, will allow providers to send multiple electronic records directly to CMBHS at once and minimize duplicative data entry.

Telemedicine, Telehealth, and Telemonitoring

Interoperability is essential for the successful delivery of telemedicine, telehealth, and home telemonitoring, as well as improving outcomes for patients receiving these services. Teleservices have increased among Medicaid clients and users of behavioral health services since the 2020 report, largely due to the COVID-19 PHE.¹³ However, teleservices among Texas Medicaid's rural enrollees increased less than clients in urban and suburban areas. Lack of broadband access in certain rural areas may have played a part.¹⁴

The 2020 *Health IT Strategic Plan* includes strategies for HIE related to telemedicine, telehealth, and telemonitoring.¹⁵ The strategies focus on "increasing the adoption of certified EHR systems, particularly among providers not included in previous federal incentive programs; connecting Texas providers to local HIEs and leveraging clinical and non-clinical data, data analytics, telemedicine, and telehealth to facilitate improved outcomes and care coordination."¹⁶ Additional information detailing the current state of teleservices in the Texas Medicaid program may be found in HHSC's telemedicine, telehealth, and home telemonitoring report, required by S.B. 789, to be published December 2022.

¹³ *Assessment of Texas Medicaid Rural Teleservices* (Delivery System Reform Incentive Payment Program Transition Plan deliverable), June 2021.
<https://www.hhs.texas.gov/sites/default/files/documents/laws-regulations/policies-rules/Waivers/medicaid-1115-waiver/assessment-texas-medicaid-rural-teleservices.pdf>. Accessed August 30, 2022.

¹⁴ Ibid.

¹⁵ *Health Information Technology (Health IT) Strategic Plan*, November 2019.
<https://hhs.texas.gov/sites/default/files/documents/laws-regulations/policies-rules/1115-waiver/waiver-renewal/attachment-n-health-it-strategic-plan.pdf>. Accessed August 30, 2022.

¹⁶ HHSC. *Health Information Technology (Health IT) Strategic Plan*, November 2019.
<https://www.hhs.texas.gov/sites/default/files/documents/laws-regulations/policies-rules/1115-waiver/waiver-renewal/attachment-n-health-it-strategic-plan.pdf>. Accessed August 30, 2022.

Department of State Health Services

DSHS Center for Health Statistics Texas Health Care Information Collection

In 2022, the Texas Health Care Information Collection (THCIC) continued to provide important patient-level claims data such as diagnoses, procedures, and charges received in a standard format from a variety of healthcare facilities and health maintenance organizations. THCIC data are:

- Collected using a messaging standard that is used nationally,
- Used by consumers to have an impact on the cost and quality of healthcare,
- Used by HHS agencies for program design and management,
- Provided to the Office of Public Insurance Counsel for report development,
- Provided to local health departments (LHDs) and state academic organizations at no charge, and
- Provided to other stakeholders as public use and research data sets.

In 2021, DSHS instituted penalties for reporters who did not submit race/ethnicity data. This information is vital to help identify race-based healthcare discrepancies.

Disease Reporting and Infectious Disease Case Investigations

The COVID-19 PHE serves as an example of the need for timely, high-quality information about health conditions to inform decision-making. COVID-19 is one of approximately 140 conditions monitored by DSHS and Texas' LHDs through the analysis of data securely exchanged via healthcare providers' systems. DSHS also provides web forms for some information systems. DSHS continues to receive faxes from some healthcare providers. Processing faxed reports is inefficient and can delay response to actionable data. Increased availability of web forms may reduce inefficiencies without increasing burden on providers.

Electronic Laboratory Reporting

Electronic Laboratory Reporting (ELR) is the secure, electronic submission of laboratory test results, using a standardized message by a healthcare provider.

Medicare PI participants, which includes most Texas hospitals, must submit test result data to DSHS using Certified Electronic Health Record Technology to meet PI program requirements. ELR is a shared service used by several DSHS programs. Data received into the ELR interface is routed to the appropriate back-end system. Since the 2020 report, ELR:

- Was transferred to a cloud-hosted environment to increase reliability and enable expansion as necessary,
- Saw expanded use, both in volume and the number of entities connected because of the COVID-19 PHE, and
- Routed COVID-19 data, including transforming non-compliant messaging data, to the National Electronic Disease Surveillance System (NEDSS).

Changes that will help improve data quality include:

- The Office of the National Coordinator for Health Information Technology replacing the ELR standard specification with an updated standard that requires all needed data,
- Requiring that all laboratories use certified software for exchanging data, and
- Updating receiving systems to support the new standard.

Electronic Case Reporting

Electronic Case Reporting (eCR) is the secure, electronic submission of standardized information about a reportable condition to public health. An eCR report may include a laboratory test result. eCR is also the latest expansion to the Medicare PI programs' Public Health and Clinical Exchange Objective. Many health IT vendors serving healthcare providers are still developing and testing their technology to send correctly formatted data.

A healthcare provider's properly configured EHR system can automatically download information about what may be reportable; identify a reportable case; and securely send it to the proper health department anywhere in the United States (U.S.), using a specially designed eCR national network called the Association of Public Health Laboratories Informatics Messaging Service (AIMS). DSHS can receive eCR data from all healthcare providers in the state once they are connected to the AIMS platform and the quality of messages has been verified. DSHS will route eCR data to the NEDSS platform, described below, where it can be securely accessed and used by LHDs.

In October 2022, DSHS deployed technology to receive COVID-19 eCRs from healthcare providers. DSHS is not “declaring readiness” under the PI programs until additional conditions are added, relevant testing is completed, and more technology vendors supporting healthcare providers have technology in place. Until DSHS declares readiness, providers’ connectivity status has no effect on their federal PI participation status and Medicare reimbursements.

DSHS will be expanding the number of conditions that may be reported using eCR over time. Benefits of eCR include improved identification of reportable cases and timeliness of reporting and reduced manual reporting effort and data entry errors. While the initial focus of eCR is on contagious diseases, the core technology can be extended to other health conditions such as cancer, birth defects, and asthma. Extending service to these other domains is expected to take several years. Providers may be able to use the same core technology and interface to support these varied reporting requirements.

National Electronic Disease Surveillance System

NEDSS is a complex software system developed and supported by the Centers for Disease Control and Prevention (CDC) and managed by DSHS’ Laboratory and Infectious Disease Services division. NEDSS supports epidemiologists at DSHS’ regional offices and LHDs in conducting case investigations by serving as a repository of case data that includes patient and provider contact information, diagnosis, laboratory test results, and other relevant clinical information submitted by healthcare providers, as well as supporting the development of case reports and subsequent submission of reports to DSHS and the CDC.

NEDSS has been improved since the 2020 report as part of the CDC NorthStar initiative with funding from the CDC. To maximize NEDSS’ usability and value, DSHS:

- Moved NEDSS into a cloud-hosted environment to increase reliability and enable expansion as necessary,
- Processed ELRs and eCRs from healthcare providers into NEDSS,
- Used NEDSS to route case notifications to the correct local jurisdiction,
- Updated NEDSS to a current version with enhanced interoperability functions,
- Provided free accounts, training, and helpdesk services, by request, to staff at LHDs statewide,

- Enabled authorized users to download NEDSS data for analysis, and
- Shared deidentified NEDSS data, as described in the Appendix.

Local Health Departments and NEDSS

LHDs are required to enter completed case investigations into NEDSS. Since the 2020 report, several LHDs are involved in developing or using local systems to support case investigations:

- DSHS is collaborating on developing an interface to receive completed reports. LHDs will be responsible for maintaining the interface.
- LHDs using separate systems will be responsible for retrieving cases transferred from other Texas jurisdictions from NEDSS.
- LHDs using separate systems will be responsible for forwarding cases to other LHDs as necessary.

Sharing NEDSS services with LHDs reduces LHDs' need for, and expenses related to, independent or separate information systems.

The Texas Immunization Registry

The Texas Immunization Registry (ImmTrac2) is the state's secure and confidential immunization information system. At the time of this report, statute required DSHS to remove an individual's data on withdrawal of consent. Vaccines or medications administered and tracked in ImmTrac2 in response to a PHE may be retained for five years, pending submission of a disaster consent. This data is not releasable to users once the PHE ends unless a disaster consent is on file. Participating providers submit consent information to DSHS through electronic messaging or the ImmTrac2 website. Providers may also submit or retrieve immunization data via standardized messaging or the web interface.

Texas' immunization consent differs from other states, requiring individuals to opt in to the registry. This requires additional modification of the provider's interface to ImmTrac2, which the provider is responsible for. It is critical that providers submit consent information for new ImmTrac2 participants before vaccination information, as data is processed in the order received and will reject vaccinations without consent already on file.

Activities since the 2020 report include:

- DSHS enabled ImmTrac2 to support bi-directional exchange and vaccine forecasting services.
- DSHS initiated development of additional testing tools, enabling providers to self-test their systems to improve onboarding.
- DSHS worked with providers to identify and resolve issues with potentially duplicative reporting of vaccinations.
- DSHS participated in the Texas Interoperability Collaborative to develop an improved frequently asked questions list.
- The Medicare PI program required participants to participate in bi-directional immunization data exchange in 2022.

Public Health Laboratory Services

The DSHS State Laboratory (State Lab) is one of the largest public health laboratories in the world, providing testing services for infectious and foodborne diseases, biological and chemical compounds, and biological agents. The lab also screens blood samples for more than 50 disorders or medical conditions as part of the Texas Newborn Screening Program.

Since the submission of the 2020 report, the State Lab continues to expand its interoperability with both internal and external systems:

- Using federal funding provided by Medicaid, DSHS collaborated with 127 facilities from eight health systems across the state to enable bi-directional exchange of newborn screening orders and results.
- The State Lab is working to improve its general Laboratory Information Management Systems to provide enhanced support for electronic test ordering and results for medical services, including standardized, message-based interoperability with providers' systems.

Texas Syndromic Surveillance

Syndromic surveillance uses symptom data to detect abnormal health patterns that could result in high morbidity and mortality, such as COVID-19, or other health risks, such as elevated illegal drug use or scooter injuries.

DSHS hosts Texas' statewide implementation of syndromic surveillance, Texas Syndromic Surveillance (TxS2). TxS2 involves more than 300 hospitals as data suppliers that submit data in a federal specified format. Tarrant County and the City of Houston supply copies of data collected in systems like TxS2, providing a comprehensive, statewide view of data. TxS2 is used by DSHS regional and central offices, LHDs, and data providers. Participants in Medicare's PI programs may use their participation in TxS2 to meet PI program requirements.

While the system does not include readily identifiable patient data, participating providers can use the analytics tools provided by the system to analyze their institution's data; however, participants can only see their own data to protect privacy. Public health professionals may only see detailed data from institutions within their jurisdiction.

Since 2020, TxS2 has been used to explore the number of cases of sickle cell disease in Texas, monitor COVID-19-like illnesses, and monitor for influenza. Beginning in 2022, participation in TxS2 is required by CMS for all Texas providers participating in a Medicare PI program to receive credit for the public health exchange objective.

Case Management and Investigation System

DSHS' Regional and Local Health Operations division is developing a Case Management and Investigation System with some EHR-like functionality to support management of the populations served by DSHS' regional offices. The system will enable DSHS to better schedule client services and track interactions, helping ensure that clients needing medical services receive necessary and appropriate care, as well as managing vaccination services. The system is being designed to be interoperable with DSHS' other technology, such as ImmTrac2 and the State Lab's information systems, using the same standardized interfaces that enable exchange with external entities. The system will also support standards-based exchange of data with healthcare providers outside of DSHS.

The Texas Cancer Registry

The Texas Cancer Registry (TCR) collects, maintains, and disseminates timely, complete, and accurate patient-specific cancer data from healthcare providers. TCR data are the foundation for measuring Texas' cancer burden, cancer control efforts, cancer-related health disparities, and progress in cancer prevention, diagnosis,

treatment, and survivorship. Healthcare providers may select one of two nationally adopted formats and use several mechanisms to submit data.

Cancer care providers may request patients' records from TCR. TCR staff retrieves records from the database and provides a secure electronic copy to the requestor in standardized formats for inclusion in providers' local systems. At the time of this report, the technology used by DSHS and provided by the CDC does not include functionality for healthcare providers to search and retrieve records from the registry.

In May 2021, TCR joined the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program. SEER provides consolidated information and statistics assembled from U.S. cancer registries to help reduce the U.S. population cancer burden. SEER data are used by thousands of researchers, clinicians, cancer registrars, public health, policymakers, community groups, and the public.

Texas Electronic Vital Events Registrar

DSHS continues to use the Texas Electronic Vital Events Registrar (TxEVER), adopted in 2019, as the state's electronic vital records system. As of 2022, DSHS is assessing the feasibility of adding FHIR capabilities into the TxEVER system to improve data interoperability with the National Center for Health Statistics. DSHS will explore exchange with providers if relevant messaging standards are included in federal EHR certification and testing programs.

Emergency Medical Services & Trauma Registries

The Emergency Medical Services (EMS) and Trauma Registries (TR) are operated by DSHS and consist of four coordinated registries: the EMS Registry; the Trauma Registry; the Traumatic Brain Injury/Spinal Cord Injury Registry; and the Submersion Registry. The EMS/TR is a statewide passive surveillance system that receives reportable event data from EMS providers, hospitals, justices of the peace, medical examiners, long term acute care facilities, and rehabilitation facilities through a secure web portal. The registries collect data from more than four million unique EMS runs annually and contributes nine percent of all records nationally. This participation makes the state an important part of the effort to improve patient care through the standardization, aggregation, and use of point-of-care EMS data at a local, state, and national level. Data are used to assess and improve Texas' emergency healthcare system.

General Data Sharing Services

DSHS provides aggregated data sharing services to stakeholders, making bulk data available for research and other purposes. These services are described in the Appendix.

List of Acronyms

Acronym	Full Name
ADT	Admission, Discharge, Transfer
AIMS	Association of Public Health Laboratories Informatics Messaging Service
API	Application Programming Interface
C-CDA	Consolidated Clinical Document Architecture
CDC	Centers for Disease Control and Prevention
CMBHS	Clinical Management for Behavioral Health Services
CMS	Centers for Medicare and Medicaid Services
COVID-19	Novel Coronavirus
DSHS	Texas Department of State Health Services
eCR	Electronic Case Reporting
ED	Emergency Department
EDEN	Emergency Department Encounter Notification
eHAC	e-Health Advisory Committee
EHR	Electronic Health Record
ELR	Electronic Laboratory Reporting
EMS	Emergency Medical Services
FHIR	Fast Healthcare Interoperability Resources
H.B.	House Bill
HCS	Home and Community-based Services
HHS	Health and Human Services
HHSC	Texas Health and Human Services Commission
HIE	Health Information Exchange
HIETexas	State-level services operated by the Texas Health Services Authority
Health IT	Health Information Technology
HITECH	Health Information Technology for Economic and Clinical Health
HL7	Health Level Seven
HL7v2	Health Level Seven International Version 2
iCoE	Integration and Data Exchange Center of Excellence
IDD	Intellectual and Developmental Disability
ImmTrac2	State of Texas Immunization Registry Replacement
IT	Information Technology
LHD	Local Health Department
LIDDA	Local Intellectual and Developmental Disability Authority
LTC	Long-term Care
MCO	Managed Care Organization
MES	Medicaid Enterprise Systems
NEDSS	National Electronic Disease Surveillance System
OeHC	Office of e-Health Coordination
PASRR	Preadmission Screening and Resident Review

Acronym	Full Name
PHE	Public Health Emergency
PHI	Protected Health Information
PI	Promoting Interoperability
PMAS	Performance Management Analytics System
PULSE	Patient Unified Lookup System for Emergencies
PULSE EE	Patient Unified Lookup System for Emergencies Enterprise Edition
S.B.	Senate Bill
SEER	Surveillance, Epidemiology, and End Results
SHARP	State Health Analytics & Reporting Platform
State Lab	DSHS State Laboratory
SUD	Substance Use Disorder
TCR	Texas Cancer Registry
TEFCA	Trusted Exchange Framework and Common Agreement
THCIC	Texas Health Care Information Collection
THSA	Texas Health Services Authority
TR	Trauma Registries
TxEVER	Texas Electronic Vital Events Registrar
TxHmL	Texas Home Living
TxS2	Texas Syndromic Surveillance
U.S.	United States

Appendix A. DSHS

Agency-wide Aggregate Data Sharing

In addition to exchanging data with healthcare providers through connectivity with information systems supporting DSHS programs, DSHS provides services to enable stakeholders to access and analyze de-identified public health data collected through exchange with healthcare providers and other entities. One gateway for this data, which includes visualization tools, is healthdata.dshs.texas.gov.

DSHS supports research and may provide identifiable information to researchers, subject to applicable law, through data requests.

DSHS is developing improved methods to standardize and streamline its data sharing request and approval process; standardize data sharing agreements; enhance analytical and reporting capacity; enable better data quality and develop technological capabilities to enhance data sharing with public health partners.

State Health Analytics & Reporting Platform

In 2022, DSHS developed the State Health Analytics & Reporting Platform (SHARP), which provides data governance and tools to analyze data from a variety of agency programs. DSHS expects to include additional programs to the platform. SHARP has strict access control rules that provide only authorized users the ability to see and interact with data.

SHARP supports system and user-developed “dashboards” that are automatically updated when source data changes. The ability to reuse and share dashboards and analytic approaches across users reduces the work needed to replicate analyses across jurisdictions and eliminates the need for repetitive processes by automating data validation rules.

While SHARP was developed to enhance data-driven decision making for DSHS programs, it is also being tested to enhance data sharing with local health entities. A pilot project was concluded in July 2022 to test data sharing capabilities with LHDs using SHARP. The next steps in data sharing improvements are being identified. Efforts are also underway to improve access to public health data through dashboards and other visualizations.