CASE STUDY

An enterprise master patient index to improve identity accuracy across state health and human services agencies

George A Gellert*

Independent Researcher, San Antonio, United States

Received: May 20, 2026 **Accepted:** September 26, 2026 **Online Published:** November 9, 2026
DOI: 10.63564/jha.v16n1p16 **URL:** https://doi.org/10.63564/jha.v16n1p16

ABSTRACT

Objective: Describe how Washington state implemented a comprehensive identity management system and key lessons enabling highly accurate unique person identification across a complex multi-agency digital health information and patient identity ecosystem.

Methods: Ensuring accuracy of patient identity is critical to patient engagement and in converging diverse streams of patient data across agencies. To improve identity accuracy, the state of Washington deployed an enterprise master patient index (EMPI). A qualitative study was conducted through interviews with agency technology leadership, and observations and insights were organized thematically into key areas of impact and value delivery, implementation challenges, and expectations for ongoing continuous improvement.

Results: Issues encountered included: identity interoperability challenges in converging patient data from multiple agencies and data systems; critical needs for effective and efficient data governance; technological infrastructure required to establish identity management and integration strategies; and ongoing maintenance and advancement of the identity management solution. Building an advanced person-patient identity management system through the EMPI initiative conveyed benefits beyond an initial COVID-19 disease surveillance/contact tracing use case. It accelerated a pan-organizational effort by the State of Washington to address identity accuracy needs and gaps, and to improve identity accuracy performance.

Conclusions: EMPI implementation in the state of Washington resolved duplication errors and reduced the inaccuracy of person-patient records, while enabling improved coordination of health and human services delivery, increased staff productivity, and decreased service delivery costs. In state disease control efforts, the EMPI enabled accelerated, more efficient and effective communicable disease contact tracing and disease control, thereby reducing infection transmission risk within the community.

Key Words: Communicable disease control; COVID-19 and SARS-CoV-2 contact tracing; Enterprise master patient index; Identity misidentification and accuracy; Patient identity interoperability; Referential identity database

1. INTRODUCTION

The challenges faced by government public health and healthcare agencies in achieving high clinical, operational, and financial performance continue to increase. Hospitals, health systems and public health agencies share a foundational challenge for care delivery excellence, patient safety, and cost-effective and efficient operations: ensuring that across today's complex health information ecosystem that integrates disparate data streams, individuals are accurately identified.[1–10] Ensuring accuracy of patient identity is essen-

*Correspondence: George A Gellert; Email: ggellert33@gmail.com; Address: 703 Sentry Hill, San Antonio, Texas 78260, United States.

tial. While health information technology (IT) has positively transformed the clinical, operational, and financial efficiency of health and human services delivery, achieving the highest integrity of interoperability of person-patient identity – or the ability to identify the same individual in different health care data systems – is made challenging by disparate data sources.[5]

Patient identification requires matching a patient to public health, diagnostic and care interventions at all care sites, and involves technology capable of validating identity accuracy. Patient misidentification results from: duplication of patient records, overlay of patient data from different patients into one record, and incorrect matching of patient data and identity. Patient identity errors undermine care, cause injury and harm, and complicate disease control efforts in public health agencies. Errors affect patients at every stage of public health and care delivery, including disease surveillance, diagnostic testing, contact tracing, and medication administration. Patient data, such as in electronic health records (EHRs), imaging or laboratory data may contain incomplete or duplicated patient data, which can adversely impact care safety, and impede disease control efforts.

Improving the accuracy of person-patient identity involves automated processes to better map and match an individual across public health, healthcare, social and human services. Accurate ascertainment and interagency sharing of information about a person-patient's identity must be completed in a consistent manner across all agencies and sites where services are delivered. Public health, health care and human services agencies need patient identity data that is consistent and interoperable across all.

In one survey, 83% of providers reported struggling with patient identity and record matching challenges, and none were highly confident in their current identity matching solution.[11] Correct identity resolution requires a systematic effort to link all records for the person across the entire information ecosystem in a comprehensive manner to enable an accurate longitudinal view of the service population. For state and local public health, social and human services agencies, achieving the highest possible accuracy/resolution of person-patient identity means integrating data from every program and system a person has interacted with. It requires resolving a substantial data and identity fragmentation problem.

Missing and duplicate data across the state, county or municipal system records undermines data integrity and downstream analytics and reporting. State and local agencies need to be able to confidently share information across departments so that their activities and investments can be effectively coordinated. For example, it is important to link a person's treatment adherence monitoring to available social and human services, hospitals and healthcare providers and health information exchanges. Accurately identifying persons across all disparate data systems is foundational for generating population analytics and reporting, and for timely, effective and cost-effective public health, social and human services service delivery.

This analysis focuses on improving accuracy in patient identity and identity interoperability across agencies. One state's effort to manage complex siloed identity data across its interagency landscape is examined. The challenges that state and local public health, social and human services and healthcare delivery organizations encounter in accurately ascertaining person-patient identity are explored, and strategies that improve accuracy in identity and agency identity interoperability reviewed. The Washington State Health Care Authority and Department of Health (HCA/DOH), and its interagency Health and Human Services Coalition (HHS Coalition), implemented a comprehensive interoperable identity management system. This included an enterprise master person index (EMPI) to advance its existing state of person identity accuracy, and to overcome extensive interagency interoperability challenges by converging person data across information systems in six state agencies.

2. METHODS

2.1 Study objective

The analysis documents best practices and key lessons from Washington state's deployment of an enterprise-wide EMPI to serve six health and human service agencies.

2.2 Study organizational setting

The HHS Coalition is comprised of the Department of Children, Youth and Families, the Department of Corrections, the Department of Health (DOH) the Department of Social and Health Services, the Washington Health Benefit Exchange, the Health Care Authority (HCA), and the Office of the Chief Information Officer. The Washington state HCA is the largest purchaser of healthcare in the state and leads efforts to transform healthcare through programs/initiatives that range from the administration of Apple Health (Medicaid) and behavioral health activities, to developing models for value-based purchasing and health technology assessments. The HCA uses extensive data assets to inform key decisions and collaborative work with local communities to ensure that Washington residents have access to better, more cost-effective healthcare. It purchases high quality whole-person healthcare for approximately one third of 7.7 million Washington state residents and engages strategies

that advance a healthier Washington.

HCA's Health Information Technology (HIT) unit supports the state's efforts to improve health by driving initiatives to effectively share interagency electronic health information across major programs and projects. A key objective of EMPI deployment for the HCA focused on better enabling individuals to access and receive state and federal benefits for which they were eligible, while also ensuring that those not eligible did not receive benefits inappropriately. The Washington DOH is the state public health agency dedicated to identifying, preventing, and mitigating threats to the public health, including from communicable diseases, environmental threats, intentional and unintentional injuries, chronic diseases, and diseases originating with behavioral and lifestyle factors. HCA launched a pre-COVID effort to establish an EMPI to improve the unique identification of persons across the HHS Coalition. These efforts were accelerated at the onset of the COVID pandemic, as DOH public health systems were stretched due to the onslaught of additional person level data.

2.3 Opportunity to deploy an enterprise master patient index

The state EMPI project represented an opportunity to simultaneously address immediate state COVID-19 response imperatives, and lay the foundation for long-term development of a multiagency identity resolution within programs and systems across the HHS Coalition. Washington state leadership recognized the importance of improving accuracy of person-patient identity, and the need to progress person-patient identity interoperability across programs and data systems. Person-patient identity management had been an ongoing challenge for several years, and further illuminated by demands created by the COVID-19 pandemic. This realization, and a history of past investments to improve person-patient identity with external solutions that had not yielded sufficient progress, resulted in the initiative to advance a statewide EMPI and universal person identifier.

The need to scale and enable faster, more efficient contact tracing by improving identification of persons infected with and at risk of communicating COVID-19 to contacts was a precipitating factor in implementing an EMPI. Effective public health contact tracing requires rapid, highly accurate identification of cases and contacts in order to minimize duplication of records and reduce resource intensive manual de-duplication. During the active phase of pandemic disease control, the Washington DOH was processing millions of tests using an existing workflow that was too cumbersome and time consuming. EMPI implementation met this acute near-term need. Longer term, however, the HHS Coalition envisioned adding more systems to the EMPI to support data exchange, care coordination, and administrative simplification across departments and programs.

2.4 Analytical focus and approach

The analyses described examined successful strategies for "connecting the person identity dots" to improve the accuracy of person identity across interagency data silos, services, and departments. This will improve service outcomes, customer-patient experience, staff work productivity and satisfaction, care safety and operational efficiency. A review was completed of key post-EMPI implementation qualitative and quantitative metrics that indicated improved Washington DOH identity accuracy performance. This qualitative study comprised serial structured interviews with informatics implementation team leadership. New quantitative data cited were not analyzed, but performance metrics were provided by Washington state DOH to measure accuracy of patient identity.

A review was completed of how the state's implementation of an EMPI enabled higher accuracy of person-patient identity, and how identity interoperability across state agencies and departments increased each unit's performance. Specific uses cases are summarized, including services provision and contact tracing investigation of cases during the COVID-19 pandemic. The state EMPI vision beyond post-pandemic restoration during normal non-crisis agency operations are described. Qualitative interviews were used to assess experiences and perceptions of the health informatics implementation team, capturing in-depth, context-rich data not easily accessible through quantitative approaches or surveys. Informatics implementation team leadership articulated perspectives on the historic and current state of patient identity accuracy and EMPI deployment.

Semi-structured interviews were developed from the study objectives, relevant literature, and understanding of the EMPI technology platform to be implemented. Prior studies demonstrate that healthcare organizations appreciate the criticality of accurate patient identity, but frequently lack organizational ability to ascertain it. Healthcare leaders previously reported that inaccurate patient identity reduces care quality and undermines financial performance (72%).[11] Only 14% were highly/extremely satisfied with the accuracy of existing patient identity management capabilities. Inability to know "who is who" was perceived to increase risk of patient harm and poor outcomes, lessen patient satisfaction, and impede population health management, 60% regarded it as vital to all aspects of performance, and 64% reported it can improve operational efficiency.[11]

Washington state is not only engaged in delivery of healthcare services, but is a major payer. A survey of healthcare payers found most were aware that accuracy of member identity is required for effective operations (90.0%).[12] Challenges included managing high risk members (43.3%) and member engagement (40.0%), both negatively affected by misidentification. A majority (73.3%) reported that their current organization is unable to share accurate identity at needed levels, with 43.0% stating it was extremely/somewhat difficult to add or remove member data and record duplicates.[12] Only 10.0% were moderately/highly satisfied with their identity management solution and most lacked confidence in their organization's ability and deployed technology to achieve high identity accuracy.[12]

Open-ended questions and prompts explored key milestones, issues and challenges, while allowing flexibility for the implementation team leadership to elaborate on issues of organizational importance. The interviewer was trained in qualitative research techniques and used probing questions to clarify responses and explore emerging themes. Interviews were conducted via telephone and with written follow up questions. Interviews were transcribed immediately to ensure accuracy. Data analysis occurred concurrently with data collection, which enabled emerging insights to inform subsequent interview questions. Themes were identified with attention to patterns and variations. Data saturation was considered achieved when no new themes emerged in successive interviews. This qualitative interview method provided a robust and nuanced understanding of stakeholder perspectives on EMPI deployment and impact, and supported interpretive validity of the findings.

3. RESULTS

3.1 HHS coalition person-patient identity organizational challenges, needs and objectives

Washington's interagency coordination has been hampered by siloed agency, departmental and program data sources, and lack of identity interoperability across agencies. Previous attempts at integrating data from different sources failed in part due to varying data definitions, challenging data governance environments, and regulatory requirement for some data sources to be kept separate. By setting one standardized data definition, the EMPI initiative sought to create a single/unique client identifier connecting and interoperable across all health, social and human services agencies and departments. A key urgent driver arose during the COVID-19 pandemic, when it became clear to state epidemiologists and public health nurses that they were spending too much time managing identity challenges (including data duplication), versus managing individuals who contracted SARS-CoV-2 or were exposed and thus at risk of community viral transmission. Although the level of urgency was driven by the pandemic, the need for an EMPI was longstanding, and its impact and value was perceived as extending well beyond the COVID-19 use case.

Manual processes needed automation to address disease surveillance challenges precipitated by the state COVID-19 pandemic. Washington state needed a solution to improve patient identity accuracy to enable better management of the state's epidemiological data for effective COVID-19 disease control, and beyond. There was need to enrich laboratory records with person contact details to improve contact tracing and accuracy of epidemiological analytics. A solution was desired that could be later progressed to enterprise-wide interagency implementation.

Contract tracing for such a highly communicable pathogen was critical to public health interruption of community transmission of the virus. During 2020, Washington state had 252,516 cases of COVID-19, with potentially exponential increasing incidence. Pre-EMPI implementation, the agency had 600 contact tracers utilizing Microsoft Dynamics and human resource intensive manual processes averaging 3-4 days to contact confirmed cases, plus a further 3-4 days to track and engage at risk contacts of the index case. This was lost time in the effort to interrupt community transmission, enabling preventable infections with an R0 factor > 1 (R0 describes how contagious an infectious disease is, where a value < 1 indicates a disease will likely die out, > 1 indicates a potential outbreak or epidemic, and equal to 1 suggests stable transmission).

The HHS Coalition began implementation activities in April 2021 to reduce time- and resource- intensive manual patient identification, data linkage and de-duplication efforts. The advanced EMPI would identify persons-patients across separate public health, social and human services, clinical care delivery, financial and administrative information systems to ensure actionable interagency information exchange. It would contain records for all person-patients from most and ideally all key agencies. An interagency EMPI would ensure a unique patient identifier across interagency applications and platforms, reducing fragmentation of information across multiple database systems and state agencies. A solution would support operational use cases with real-time identity matching. Previous attempts failed in part due to the complexity of defining data across systems and agencies. Additionally, the state sought to augment public health data supporting the state's COVID-19 response. Public Health staff were spending too much time tracking down the correct records for a given person, and existing silos of systems had

little connectivity and integration potential to reconcile and resolve a single identity in other systems and agencies for the same individual. COVID-19 increased the imperative to reduce the manual burden of tracking down contact information for individuals in case investigations and meet the 24-hour performance objective established by the governor for their initiation.

Need existed to reduce the burden of identity duplication within the Washington Disease Reporting System (WDRS) and improve its performance, accuracy and stability. Identity data enrichment was essential for the state laboratory. Contact data enrichment of the WDRS would reduce the substantial manual burden of de-duplication, improve epidemiological surveillance capabilities, and relieve the human resource demand. Automation of contact de-duplication and contact data enrichment for the state's Case Risk and Exposure Surveillance Tool (CREST) would be advanced with the EMPI. The historical approach of the state had been to modify matching algorithms and rules across various analytic objectives, however, it had become apparent that while these efforts had value, they could not keep pace with the expanding volume and diversity of data streams and information content.

Thus initial state of Washington objectives for the EMPI initiative included: (1) reducing the burden of de-duplication within the WDRS, and thereby stabilize and improve its performance; (2) reducing manual person-patient identity validation efforts in WDRS and CREST processes; and (3) reducing the time between case reporting and the initiation and closing of COVID-19 contact tracing/case investigations, thereby reducing community transmission of SARS-CoV-2 (and other communicable pathogens of public health importance).

3.2 Selection of EMPI-identity interoperability solution and key EMPI capabilities deployed

After reviewing information from several solution providers, Washington's HHS Coalition selected Verato as its primary software platform for advancing the accuracy of person-patient identity. The initial focus would serve the COVID-19 agency response, and subsequently achieved broad identity interoperability across routine operations of health, social and human service agencies. Verato was engaged in similar implementations with other states' agencies, including the Commonwealth of Kentucky, the Connecticut Department of Public Health, and the Pennsylvania Department of Health. It offered the state requisite scale and high performance.

At the time of implementation, Washington state had approximately 210,000 confirmed cases of COVID-19. The solution could scale rapidly to millions of person-patient identities. With a SaaS software deployment model, it could be implemented within weeks, and had a matching solution and the ability to enrich data, including laboratory data (for example, finding telephone numbers and other demographics within even "thin" records missing key data). By enriching laboratory records in real time, it enhanced contact tracing, significantly reducing the time required for 600 state contact tracers to complete more rapid contact tracing and curb community transmission of the virus. Yet the state's vision for the EMPI went beyond immediate communicable disease control imperatives and sought to establish identity interoperability across the state coalition of health and human services agencies and programs.

The solution had the scope and scalability to help the state manage its identity challenges within a hyper-complex interagency data gathering and information ecosystem. Verato had integration experience with MS Dynamics, MuleSoft and numerous other deployed software platforms within the state. Its SaaS-based platform enabled a rapid impact on state COVID-19 contact tracing/disease control. It matches identities using an external referential database, which enlarges the number and diversity of data sources previously available to state agencies.

Conventional person-patient identity matching technologies directly match demographic data from two individual records to determine if they belong to the same patient. However, referential matching technologies map and match demographic data from each record to a comprehensive, continuously updated and curated national reference database of identities.[13] A referential identity database integrates multiple data sources beyond those typically utilized in public health or healthcare to accurately identify individuals, including publicly available government data. consumer, financial, and other commercially available, non-healthcare data sources, such as credit data and federal, state and local government records (see Figure 1). A referential algorithm uses probabilistic matching techniques within a curated reference dataset of all US adults, and additional logic adapted to data characteristics that vary when person-patient and reference data are combined.[13]

A referential database to match identity improves accuracy and resolves duplicate or overlaid records.[13] It integrates data of over 300 million identities and billions of records integrated from credit, utilities, government, and legal sources, and is updated with over 60 million record updates monthly. This enables accuracy rates beyond conventional technologies, even when records contain out-of-date, incomplete, and incorrect demographic data (see Figure 2).[13]

ISSN 1927-6990 E-ISSN 1927-7008

The EMPI solution was independently evaluated by the Regenstrief Institute, a nationally recognized third-party health informatics research institute. Manual review and analysis of a large sample set of identities resolved by the platform and compared to a probabilistic algorithm solution found referential matching increased identity accuracy by 24% versus legacy systems, enhancing patient data stewardship.[13]

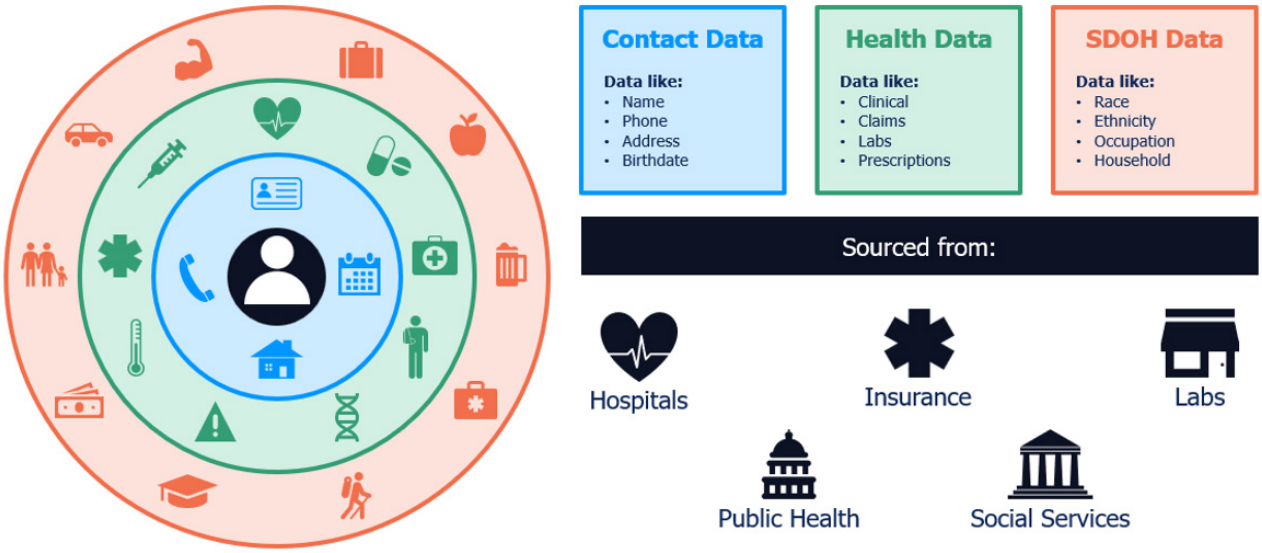


Figure 1. Converging diverse data sources to advance accuracy of person-patient identity

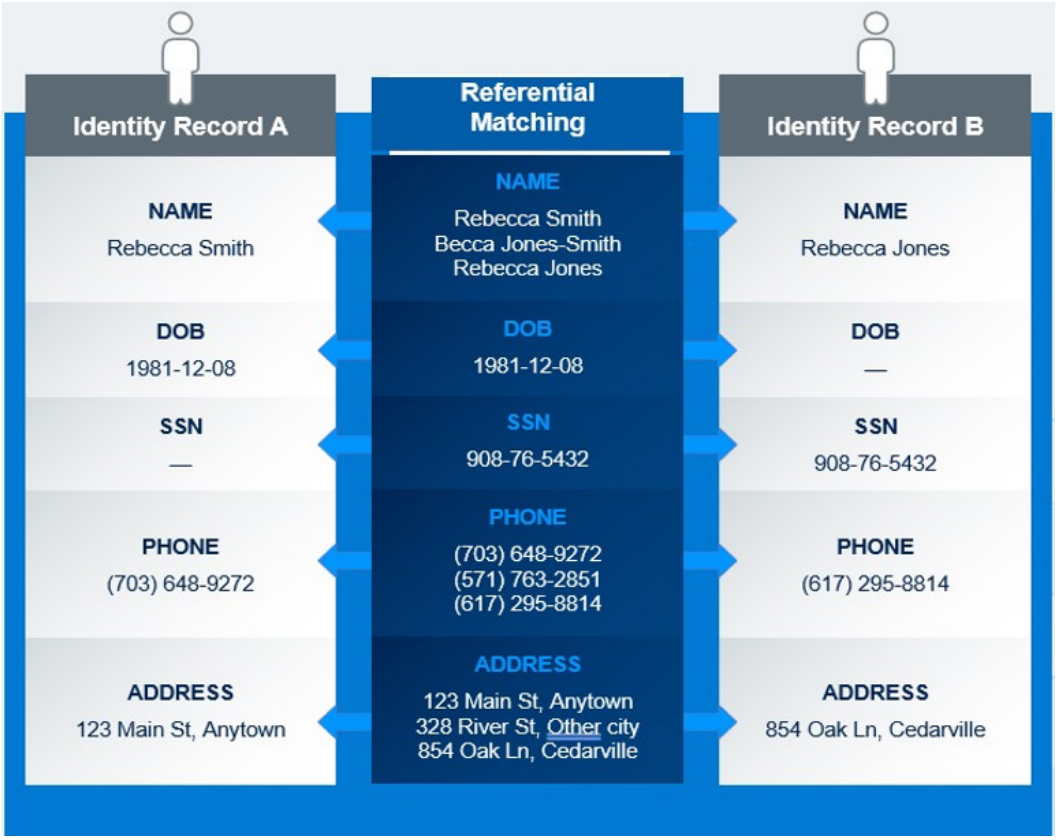


Figure 2. Referential matching database integrating disparate person-patient records

Table 1. Key Washington DOH pre-EMPI person identity needs and post-EMPI progress achieved

Pre-EMPI Identity Performance Need	EMPI Impact Achieved via Improved Identity Accuracy
COVID-19 contact tracing effectiveness and efficiency impeded by inaccuracies in and protracted efforts to accurately ascertain person-patient identity	Time to reach individuals for contact tracing reduced for 600 focused public health workers engaged in communicable disease control contact tracing
Person-patient identity data siloed and not interoperable between state agencies	Successfully linked fragmented data for state residents from numerous previously data-siloed agencies and information systems through implementation of an EMPI with unique person identifiers; increased interagency identity interoperability and coordination between HHS Coalition agencies
Excessive time spent by staff on reconciling duplicate person-patient records and identifying data overlap between state program participation and eligibility rolls (for e.g., identifying people on Medicaid who can also be enrolled for eligible food and childcare assistance programs)	Reduced staff time spent on reconciling duplicate records and identifying overlap between program participation, enabling all agencies to utilize less resources to achieve greater precision and impact of service delivery; reduced duplication of individual records improved public health effectiveness, care safety, increased access to eligible social and human services, increased staff productivity, and decreased program/service delivery costs
Person-patient identity accuracy not optimized	Improved personal data accuracy, enabling state agencies to consistently ensure that traditionally high inequity, underserved and disenfranchised populations are receiving eligible services in a more effective and equitable manner
Cybersecurity and PHI confidentiality not optimized	Increased robustness of cybersecurity and privacy of sensitive personal health/identity information and confidential data by enabling a transformative process change from sharing personal identity information across agencies to sharing unique individual identifiers
Less than optimal clinical/public health effectiveness and operational efficiency of other legally reportable communicable disease contact tracing beyond COVID-19 due to inaccuracy in person-patient identity	Increased accuracy in identity improved clinical effectiveness and efficiency of contact tracing across multiple reportable communicable diseases, enabling more robust disease control and potentially better clinical and public health outcomes
Vaccine delivery to individuals misidentified impeded by poor accuracy of person identity	Increased vaccine uptake among individuals previously misidentified, in planning stage
Increased interagency person identity and data interoperability, including demographics and social determinants of health data	Future roadmap includes enriched individual identity data capture and interagency sharing and interoperability, including demographics and social determinants of health data

Note. EMPI = Enterprise master patient index; HHS = Health and Human Services; PHI = Protected health information

3.3 Impact of Washington state EMPI implementation

Introducing advanced person-patient identity management system with the EMPI conveyed benefits beyond the initial COVID-19 disease surveillance/contact tracing use case, and advanced the state's identity accuracy performance. Within one Washington state agency system, 8,000 duplicate identities were found. Eliminating these duplicates cleansed the overall data within the system and improved administrative functioning of the agency. Table 1 outlines key person-patient identity accuracy needs and gaps prior to EMPI implementation, and the progress achieved. As envisioned and hoped for, the project evolved in scope and depth to support a larger person-patient identity accuracy effort across state agencies, improving interagency data exchange and coordination between public and private sector agencies.

3.4 Challenges around privacy of protected patient information

The Washington HHS Coalition encountered challenges during the implementation. Many were the result of varied privacy laws that apply to the different HHS Coalition organizations and programs, with two organizations requiring compliance with the Health Insurance Portability and Accountability Act (HIPAA), whereas other do not. Organizations had differing federal and state legal authority to share personal user information. Public health imperatives also varied across agencies. Access to protected patient information might be legitimate in a critical public health crisis like the COVID-19 pandemic, but other agencies' needs are more routine. Resolving these differences in Washington state required cross-agency coordination with clearly defined data

governance and involvement of each organization's legal and privacy teams.

4. DISCUSSION

4.1 Summary of impact and value achieved through EMPI implementation

Integrating Washington state's disease surveillance system and Medicaid system through the EMPI enabled improved identification of individuals across the two systems. This will improve the effectiveness and efficiency of public health program and care outreach efforts, ensuring that individuals diagnosed with or at risk from various diseases, or having social and human service needs, are made aware of their potential eligibility for various state programs. Additionally, connecting and enriching the typically sparse data captured by the state disease surveillance system with more complete data within the state Medicaid program enabled improvements in contact tracing during communicable disease outbreaks. Systems linked to Medicaid also receive an enhanced financial match for design, development, and implementation (90-10 match), and operations and maintenance (75-25 match) but these must be appropriately cost allocated if the system serves populations outside Medicaid. By knowing which individuals are Medicaid enrollees, the state's new EMPI enables and ensures determination of exact, accurate and appropriate cost allocation.

4.2 Future roadmap for advancing Washington state EMPI implementation

Washington's HHS Coalition developed a phased roadmap for advancing implementation of the EMPI, connecting an additional sixteen systems. Once these systems are connected to the EMPI, secondary transactions can be enabled leveraging the unique person identifier, and transforming how Coalition agencies share data. Additionally, the state is embarking on an integrated eligibility initiative to support multiple health and human service organizations, positioning the EMPI as a foundational technology to support an improved eligibility experience that simplifies the process for applicants. Eligibility processes will require residents only enter their information once to have their eligibility determined for multiple programs. Connecting additional HHS Coalition systems is planned, such as DOH registries to support the state's opioid response program. The state is assessing the potential to integrate EMS data sources for improved interagency interoperability and coordinated functions. A deepening and broadening of analytics services offered as a result of EMPI deployment is ongoing, as is further refinement of operational governance.

4.3 Implications for providers facing similar patient-identification challenges

Other state and local public health agency services face similar challenges in ensuring that patient identification processes are accurate with minimal duplications or overlays of individual data. These organizations should evaluate whether their patient identification accuracy and challenges warrant similar investments in an EMPI that will improve linkage of individual data across multiple agency records, service programs, and databases. Although the ubiquity of electronic records have reduced the rate of patient misidentification, they are designed primarily to achieve care and operational objectives. Patient identity technology solutions such as that deployed in Washington state have emerged to augment identity accuracy by reducing misidentification, and public health and healthcare delivery organizations which gather and manage patient data should assess if adopting such novel solutions to improve identity accuracy are warranted. The post-EMPI benefits achieved by the state of Washington HHS Coalition, as described in Table 1, merit emulation.

4.4 Limitations and future challenges in Washington state EMPI implementation

EMPI implementation within a state government agency presented several operational, technical, and organizational limitations that may affect long-term effectiveness and sustainability. A significant limitation is data quality and standardization. Some state agencies rely on multiple legacy systems that collect patient information using inconsistent formats, identifiers, and data entry practices. These systems may contain inaccurate, incomplete, or duplicate records that can reduce the accuracy of patient referential matching. Another limitation is system interoperability. Many state government health and social service systems were not originally designed to integrate with an EMPI, making real-time data exchange difficult. Variations in vendor platforms, data standards, and interface capabilities can delay EMPI implementation and require time consuming and costly customization efforts. Privacy, security, and regulatory constraints also pose ongoing challenges. State agencies must comply with federal and state regulations such as HIPAA and state-specific privacy laws, which can limit data sharing across programs and agencies. Balancing patient privacy with the need for accurate identity matching may produce restrictive access controls that can reduce the potential impact of the EMPI in the future. Further, organizational and governance challenges can hinder expanded implementation. Effective EMPI deployment requires strong interagency collaboration and clearly defined data governance structures. Organizational resistance to change, limited stakeholder buy-in, and unclear accountability can slow future adoption and limit expansion

of EMPI deployment. Resource and capacity limitations in Washington state are a related challenge. Budget constraints, limited IT staffing, and competing priorities may diminish the state's ability to invest in system maintenance, staff training, and continuous data quality and process improvement. Without sustained funding and operational support, the long-term value of the EMPI may be at risk.

5. Conclusions

In sum, EMPI implementation in the state of Washington Health and Human Services Coalition substantially resolved patient identity duplication and reduced inaccuracy of person-patient records. This benefited care safety, enabled increased access to and coordination of eligible health and human services, increased staff productivity, and decreased program and service delivery costs. In state disease control efforts, the EMPI enabled acceleration of and more efficient and effective communicable disease contact tracing and thus reduced infection transmission risk within the community. While there have been discrete benefits for each agency connecting to the EMPI, the state will more fully derive value from this technology as the unique identifier is deployed in subsequent data exchanges. This will enable the state to directly match patient data to a single identifier, increasing accuracy and enhancing data privacy. As occurs in most technology projects, certain processes progressed more slowly than anticipated. This included implementing the multi-agency data sharing agreement. Providing ample time to address such legal authority and privacy components within data governance is recommended as other governmental agencies pursue EMPI implementation.

Future advancements in the accuracy of person-patient identification in Washington state through EMPI implementation should focus on expanding and further refining this integrated, interoperable eligibility solution to support all of Washington state's health and human service programs. Accuracy of individual identity is critical to the integrated patient service eligibility process which, without successful EMPI implementation, would not have been possible. Other state and local public health, social and human service agencies encountering similar pre-EMPI identity accuracy and interoperability challenges should explore the potential utility and value of interagency EMPI implementation. Maximizing the accuracy and interoperability of person-patient identity across governmental agencies that serve the public is an imperative, and given existing technological capabilities to do so, should be considered a best practice of effective and cost-effective public health.

Acknowledgements

None.

Author contributions

The author conceived the study, drafted the manuscript, and approved the final version of the manuscript and agrees to its publication.

Funding

This research received no external funding.

Conflicts of Interest Disclosure

The author declares no conflicts of interest.

Informed consent

Not applicable.

Ethics approval

The Publication Ethics Committee of the Association for Health Sciences and Education. The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Data sharing statement

No additional data are available.

AI disclosure statement

The authors declare that no generative artificial intelligence (AI) or AI-assisted technologies were used in the preparation, analysis, or writing of this manuscript.

Open access

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (`http://creativecommons.org/licenses/by/4.0/`).

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

REFERENCES

[1] The Joint Commission. National Patient Safety Goals Effective January 2022 for the Critical Access Hospital Program. Hospital Accreditation Program. Oak Brook, IL: The Joint Commission; 2022.

[2] ECRI Institute. Health Technology Assessment Information Service special report: Patient identification errors. 2016 [cited August 7, 2026]. Available from: https://www.ecri.org/Resources/HIT/Patient%20ID/Patient_Identification_Evidence_Based_Literature_final.pdf

[3] Riplinger L, Piera-Jiménez J, Dooling JP. Patient identification techniques - approaches, implications, and findings. Yearb Med Inform. 2020; 29(1): 81-86. PMid: 32823300. https://doi.org/10.1055/s-0040-1701984

[4] Abraham P, Augey L, Duclos A, et al. Descriptive analysis of patient misidentification from incident report system data in a large academic hospital federation. J Patient Saf. 2021; 17(7): e615-e621. PMid: 29528876. https://doi.org/10.1097/PTS.0000000000000478

[5] The Pew Charitable Trusts. Enhanced patient matching is critical to achieving full promise of digital health records; 2018 [cited August 7, 2026]. Available from: https://www.pew.org/en/research-and-analysis/reports/2018/10/02/enhanced-patient-matching-critical-to-achieving-full-promise-of-digital-health-records

[6] Krzepicki A. New perspectives on the patient ID problem in healthcare. Patient ID Now. 2022 [cited August 7, 2026]. Available from: http://patientidnow.org/wp-content/uploads/2022/11/PIDN-Research-Findings-Final.pdf

[7] Kulju S, Morrish W, King L, et al. Patient misidentification events in the Veterans Health Administration: A comprehensive review in the context of high-reliability health care. J Patient Saf. 2022; 18(1): e290-e296. PMid: 32925569. https://doi.org/10.1097/PTS.0000000000000767

[8] Moscovitch B, Halamka JD, Grannis S. Better patient identification could help fight the coronavirus. NPJ Digit Med. 2020; 3(1): 83. PMid: 32529044. https://doi.org/10.1038/s41746-020-0289-4

[9] Jones-Darnell T. Issues in patient identification during COVID-19. Nursing. 2022; 52(3): 38-40. PMid: 35196282. https://doi.org/10.1097/01.NURSE.0000820068.71332.77

[10] Executives for Health Innovation. eHealth initiative 2020 roadmap: Goals, priorities, and areas for consensus; 2020 [cited August 7, 2026]. Available from: https://www.ehidc.org/resources/ehealth-initiative-2020-roadmap-goals-priorities-and-areas-consensus

[11] Gellert GA, Erwich ME, Krivicky-Herdman S. The importance of achieving a 360-degree view of patient identity: A survey of US healthcare providers. Journal of Hospital Administration 2023; 12(1): 31-40. https://doi.org/10.5430/jha.v12n1p31

[12] Gellert GA, Erwich ME, Krivicky-Herdman S. The importance of accurate member identity in the performance of payer organizations. The Journal of Hospital Administration 2023; 12(2): 11-21. https://doi.org/10.5430/jha.v12n2p11

[13] Grannis SJ, Williams JL, Kasthuri S, et al. Evaluation of real-world referential and probabilistic patient matching to advance patient identification strategy. J Am Med Inform Assoc. 2022; 29(8): 1409-1415. PMid: 35568993. https://doi.org/10.1093/jamia/ocac068