Rethinking the Use of Electronic Health Records for Decision-Making in Health Services Management: A Concept Paper

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Abstract

Despite the widespread use of Electronic Health Records across the healthcare industry, collecting massive amounts of data from patients, the promise of strategic data efficacy is yet to be fully unlocked. If anything, the process of gathering data is more of a burden to healthcare workers and hospitals due to the high costs of data collection, healthcare worker burnout and poor job satisfaction. The focus on data management is to meet regulatory requirements more than creating strategic value. Simultaneously, data is quickly becoming the next currency of power after land and money. Those with massive amounts of data stored, as well as the means to extract predictive insights from it have a significant advantage in the future. Therefore, with the current perception around data management as a burden in healthcare settings, the potential for biopower in strategic decision-making is underutilized. To change this, I propose a conceptual framework called the Burden-Value Shift Model (BVSM), where I apply TAM (Technology Acceptance Model) principles of PEOU (perceived ease of use) and PU (perceived usefulness) to a data governance framework of four keys pillars (data collection, data processing, data analysis and strategic feedback). With the right approach to collect, store and utilize data, the benefits materialized will not only be economic to the healthcare organizations, but behavioral and sociological as well. Healthcare workers will gain motivation while appreciating value of the work they do by seeing their actions transform into tangible outcomes. Additionally, patients themselves who are the primary data generators, will benefit from solutions extracted from the data. The key is to ensure that improvements are done across the board through enhancing both technology and human well-being. Examples include investing in automation to reduce human effort, creating trust through verification of data sources, extracting useful insights for better patient care and lower costs, while simultaneously providing feedback to healthcare employees creates a continuous positive loop across all pillars within the ecosystem. The ensuing principle emanating from BVSM in this case is that when the perceived as well as real effort to collect and utilize data on a micro level is low but the value high, it is likely to create a sustainable and efficient system with high utility on a macro level. The proposed framework links small actions of a nurse or healthcare manager clicking a data point to a larger impact across society.

Keywords: Electronic Health Records, Burden-Value Shift Model, Health Services Management, Technology Acceptance Model, Feedback Loop.

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BACKGROUND

In EHR, massive amounts of data are being collected, shifting immense power to the accumulator that is the healthcare system, while returning persistently low value in terms of efficiency and utilization to the primary data generators, who are the patients and clinicians (Ronen, 2024). EHRs therefore can be fundamentally termed as an exercise in biopolitical control. This is supported by Michel Foucault's work, exploring the institutional ability to access and utilize detailed patient data as a form of biopower. From a sociological standpoint, the access and use of data is an aspect that represents power, with the ability to shape, regulate and control the behavior of a specific group of people, in this case patients (Foucault, 1977; Ashuri et al., 2024). The system is designed with institutional logic in mind, that of accessing as much data as possible but little thought of the reciprocal needs of the subjects

Furthermore, massive financial investments have been funneled towards numerous successful implementation ventures, and yet healthcare services management frequently realizes a negative return on the sheer effort required to collect, maintain and store digital data. Healthcare workers and clinicians, who are the primary data generators report widespread issues of documentation overload on top of their regular schedules. They further deal with workflow disruption on a regular basis that often leads to click fatigue (Olakotan et al., 2025). Quantifying the problem, it is realized that physicians are estimated to spend approximately 35% of their time recording patient data. This percentage may rise following the introduction of standard, structured EHR systems (Joukes et al., 2018). Implementing EHR was associated with an 8.3% increase in dedicated documentation time in one center. This corresponded with a similar decrease in the time allocated for direct patient care (Joukes et al., 2018). The resultant effect is distraction from primary work that is care of patients, increased cognitive load and possible frequent clinician burnout (Gesner et al., 2022).

Organized data systems can unlock powerful guidance capability in healthcare while preventing waste of resources. For example, doctors will not have to log into multiple files to access a patient history from one system, lab results from another or look up imaging reports in another system. The power behind hospital records could also manifest through detailed analysis of patient data to for instance identify patient groups accounting for high healthcare costs, eventually leading to creation of targeted care programs to minimize costs (Abramson, 2023). To achieve such a level of sophisticated analysis, it is not just about better software, but also advanced managerial capabilities (Kaplan, 2001; Ludwick & Doucette, 2009; Cresswell & Sheikh, 2013). All the puzzle pieces are crucial, from the human resource, to the system and the process of how data goes into the system, because each aspect affects the final outcome. This is because while EHR has changed the face of healthcare, it is yet to materialize its promise of sophisticated data insights to enhance the delivery of care. There is immense potential, but implementation still faces broader challenges (Meyer & Goes, 1988).

External forces such as regulatory bodies contribute to this problem by focusing on measuring success based on complete documentation and volume of data, rather than objective, actionable utility that could be extracted for strategic relevance (Melnick, Sinsky & Krumholz, 2021; American Hospital Association, 2017). This regulatory environment unintentionally institutionalizes the burden-centric model by valuing quantity over strategic quality. Therefore, I explore a conceptual framework on how EHR data can be managed and utilized in organizational processes to reduce clinical data burden while exponentially increasing its strategic value within the healthcare system. I introduce the *Burden-Value Shift Model* (BVSM), grounded in the Technology Acceptance Model that explains and guides the necessary institutional change in perception of EHR data from a mandatory input cost into a vital asset.

THEORETICAL FRAMEWORK

Burden-Value Gap

The BV gap manifests from technological, sociological, behavioral and managerial issues surrounding EHR data

collection. Poor system design, misaligned organizational goals as well as sociological burdens create a repetitive cycle of low value returns alongside increased costs of system maintenance as outlined in the table below.

Table 1: How the BV gap manifests

Drivers	Description	Example
Behavioral	Wasting mental and physical effort	Twenty clicks to order a lab report
Technological	Inadequate system design and siloed data platforms prevent easy access to data.	Logging in to three different systems to get a full patient history.
Managerial	Organizational focus is on meeting external compliance	Collecting vast amounts of data for insurance reimbursement forms, but no plan to improve patient flow with the data.
Sociological	A shift of power from patients to institutions (biopower).	Patients loss of power without this data making their hospital experience any better.
Gap	EHR data management becomes a vicious cycle of high-burden, low-value activity.	Employees burden, managerial lack of utility, costly but inadequate systems, patient disempowerment.

This burden is not a mere nuisance, but has actual effects on employee productivity, staff retention, as well as patient safety (Kohn et al., 2000). Concurrently, these tremendous efforts to accumulate the large amounts of data fail to materialize its strategic promise leading to resource wastage that could be channeled to the greater good of the population. Combining the significant shift in power from patients, with the high burden of data management for employees and managers alongside a low value return scenario leads to a unique imbalance I call the burden-value gap.

Technology Acceptance Model

To understand resistance to EHR systems from the user perspective, we will rely on the Technology Acceptance Model (TAM). This is a validated behavioral framework developed by Davis (1989) and later expanded by Venkatesh and Davis (2000). TAM posits that there are two core belief constructs predicting a user's actions and intentions towards a specific technology (Lin & Lu, 2000; Holden & Karsh, 2010). The constructs are as outlined below:

1. The first aspect is the Perceived Ease of Use (PEOU), which is defined as the degree to which an individual believes that using a particular system would be "free of effort" (Davis, 1989). In this context for example, a high documentation burden and click fatigue translate directly to low PEOU. It takes a lot of effort to accomplish a small task.
2. Perceived Usefulness (PU) is the degree to which an individual believes that using a particular system would "improve their work performance" (Davis, 1989). For managers and clinicians low HER value of data is low PU.

When EHR systems suffer from simultaneous low PEOU and PU, outcomes include poor quality of data mediated by system workarounds to speed up the process (Ajami & BagheriTadi, 2013). Therefore, TAM provides a theoretical foundation that explains why EHR adoption may be failing to materialize its promise, if users perceive the system as difficult to work with. Rethinking the application of this theory can help to close the burden-value gap by aligning it with a data governance model.

CONCEPTUAL FRAMEWORK

Introducing BVSM

The BVSM framework is proposed here as a goal oriented guidance for health service managers to systematically transform EHR systems from a problem to a value creation engine. The model defines the shift along a continuum of people, technology, the organization and society at large. Reducing entry friction from the start of the data collection process comes before enable the creation of high managerial utility in the end.

A substantial body of research and frameworks address clinical usability, aiming to improve PEOU for better patient

care outcomes (Zheng et al., 2009). Other work focuses on technical interoperability standards necessary for data quality (Bender & Sartipi, 2013). However, a significant conceptual gap exists in frameworks that explicitly connect PEOU to PU within a single, continuous organizational system (Hussain et al., 2025). The understanding that inserting a certain degree of *effort* (PEOU) into the system will result into improved performance and *valuable* outcomes (PU). This concept paper addresses this gap or need of seeing the value of effort around EHR data by integrating TAM principles directly into a comprehensive data governance model designed specifically for strategic health services management, thereby offering a prescriptive path for a *burden-value shift*. I propose BVSM through four pillars of data governance model alongside TAM constructs of PEOU and PU.

Table 2: BVSM = Data Governance Model + TAM

Data Governance Pillar	Goal	Construct Applied	Value Created
Data collection	Minimize physical and mental effort	PEOU	Investment in automation and human factors reduces mental and physical effort
Data processing	Cleaning (junk) Verification (of source) Integration (data types)	PEOU	Creating trust and reliability for all users through real time data verification
Data analysis	Turn raw data into actionable insights	PU	Advanced analytics and dashboards provide reliable solutions
Strategic feedback	Demonstrate the effort of data collection is worth the value	Continuous feedback loop (new)	Visible outcomes such as lower costs & better patient outcomes

BVSM therefore provides a structural mechanism necessary to modify the behavioral perceptions outlined in TAM at an organizational scale. Success is defined by moving organizational-level PEOU and PU from critically low to consistently high. The model introduces four pillars as follows:

- First two pillars target PEOU to minimize the organizational and individual effort required for data capture and assurance of quality. This reduces effort and improves people alignment.
- The next two pillars target PU to maximize the visibility and actionability of the strategic insights derived from the data. This improves value of technology and connects it back to people.

The shift relies on changing the human aspect through behavioral change to reduce individual and organizational effort as well as changing the technical aspect of the system where operations are designed to maximize value of data. These pillars align the value of people and technology to create a single continuous loop of the different parts feeding into each other.

This design of the new system demands a commitment to reciprocity. Since organizations use the patient-provided data to make decisions that affect those very patients, the system must be designed to do it the right way. While current individual rights on data protection are necessary, they are yet to address collective biopolitical power of aggregated data (Duncan, 2023). BVSM provides the institutional mechanism to go a step further and provide tangible value to patients by ensuring that the data captured is handled in a manner that serves as a tool to for efficiency of resources and usefulness for all stakeholders. Therefore, the BVSM embeds strategic value alignment (SVA) into its core by matching efforts to goals. This helps managers make better decisions for the hospital and for patients to improve the whole healthcare system.

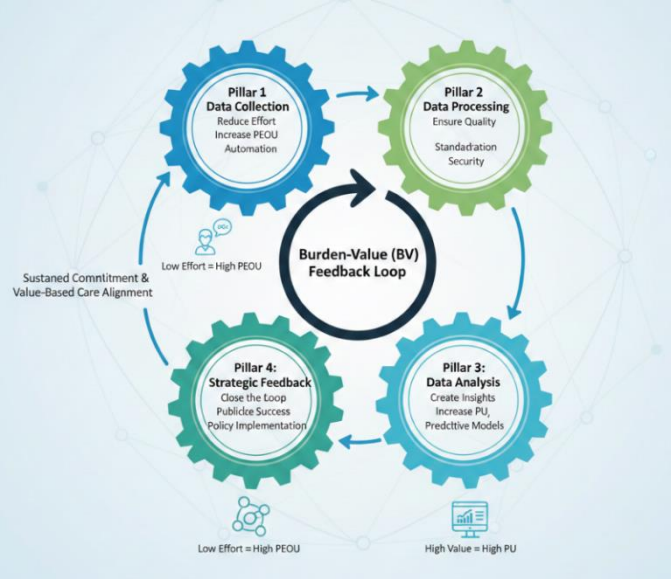

Figure 1: BVSM creates a continuous and sustained feedback loop across the organization

Pillar 1: Data Collection

This pillar improves the efficiency of data entry to save healthcare workers mental and physical effort. Investing in tools like RPA for repetitive tasks and cutting down excessive clicks when designing systems can save more time for patient-care. Systems that are difficult to use are not just a cause for frustration, they risk compromising accuracy of the data. Therefore, ease-of-use becomes an essential requirement for collecting reliable data.

Pillar 2: Data Processing

The second pillar explores transforming EHR records from a collection of isolated entries to an integrated system. This includes cleaning up the data to remove unwanted entries, aligning it to a single file format and verifying the source. By committing to modern interoperability standards like HL7 FHIR, data exchange becomes seamless because different files types and formats for example can be exchanged quickly and seamlessly (Abramson, 2023). A key challenge for data p is integrating traditional EHR records with increasingly newer types of Patient-Generated Health Data (PGHD) from smartwatches and health apps. It requires advanced analytical tools like AI to help transform different data types into a standard format to make it more usable.

Pillar 3: Data Analysis

This pillar represents the critical point where good data is converted into usable intelligence. For example, using custom dashboards, showing not just what happened through documenting say, the number of patients who encountered falls in the ward, but finding real time solutions from the data such as what caused the fall (Abramson, 2023). Tools like machine learning can be very useful to support doctors with clinical decisions (Wipfler et al., 2023). However, use of AI has to be balanced through accountability and security to mitigate effects of bias in algorithms (Adeyinka et al., 2023).

Pillar 4: Strategic Feedback

The final pillar addresses a very technical challenge of ensuring human staff doing the work of data entry from Pillar 1 actually see the results of their work in Pillar 3. This is the link that connects the PEOU to the PU. It is the core of the model that sustains the shift by acting as a bridge, closing the gap between effort and value. What I call the BV feedback loop now reinforces the willingness to utilize the system properly.

Managers must proactively lead frontline staff through communicating clear goals as well as eventual positive changes from their input. Examples might include showcasing how proper documentation reduces waiting times, thereby validating intrinsic motivation for employees (Taylor & Todd, 1995). BVSM emphasizes that PEOU is the necessary, but has to be accompanied by PU to sustain the process. Think of this this way, if the system is hard to utilize, users resist it because of the high burden. However, even if the system is easy to use, but the benefits are hard to quantify, it becomes pointless and eventually people stop caring.

DISCUSSION AND IMPLICATIONS

The conceptual model proposed is highly relevant to health services management, health informatics and the healthcare industry at large. It creates a bridge between the conversation about clinician burnout and data value. It is well established that data management across EHR is a burden, therefore the theory goes beyond that to offer a practical solution. The multi-level framework uses four pillars of data governance to align value via the BV feedback loop. Data collection and usage becomes intentional to reduce the burden. BVSM can aid with policy and practical managerial interventions in the healthcare system. While other theories exist in understanding behavioral relationship between users and technology, they are merely descriptive. BVSM introduces novelty by offering a prescriptive path forward. This is a significant theoretical advancement as it operationalizes the solution. If a system is difficult to use, redesign it, as opposed to just asking if a healthcare worker will be able to use a system like in prior theories.

Theoretical Contribution

Reframing the EHR Debate

The proposed theory seeks to change the conversation around HSM literature by positioning EHR as a strategic organizational asset, rather than a box-checking tool for compliance. By realigning the perception of a cost or burden, the model alters the perspective around it to a tool that can be cultivated to properly function across an organizational ecosystem. It is not enough to make the system merely less cumbersome to work with by lowering the burden, but more can be done through leveraging maximum value. It is a technological investment, but with better human input, it can transform to a high value asset with returns to all stakeholders.

Bridging Behavioral and Sociological Theory

This framework directly bridges micro-level behavioral economics theory of TAM to macro level sociological theories of biopower and data justice. When the system is easier to use because of high PEOU (low effort), leading to high PU (high value) it feeds positively into ecosystem affecting change on a larger scale. The two concepts combined thus can have significant impact on ensuring data is utilized fairly to benefit everyone (data justice), rather than organizations just accumulating massive amounts (biopower) only to waste it. The model acknowledges the importance of people and the need to forester positive relations alongside technological investments. Employee motivation and building trust are important to success right alongside investing in automation for example.

Summary of BVSM contribution

- ✓ Traditional Models: Focus on two separate conversations.
  - PEOU: Makes EHR system less clunky for doctors so they can enter data faster and with fewer clicks. The focus is on the data collector alone.
  - PU: Ensure the system helps clinicians make better diagnoses. The focus is on clinical outcomes for the data collector.
- ✓ Gap: There is a disconnect between effort (PEOU) and value (PU). Creates a burden.
- ✓ BVSM: This bridge introduces a mechanism that forces these two conversations to merge. It connects PEOU and PU by insisting that any data collection process (the burden) must be justified by a clear and direct line to a managerial or strategic decision (the value).
- ✓ Value: The model essentially introduces a new criterion for system design and data collection policies. It is no longer enough for data entry to be *easy* (high PEOU) or even clinically helpful (basic PU). The system has to be strategically valuable by shifting the primary beneficiary of usefulness to the entire organization's management structure. It connects the micro action macro outcomes through the feedback loop.

Introducing the Continuous Feedback Loop

BVSM presents a formalized unique contribution known as the BV feedback loop. It is the continuous process that sustains the entire system. It is different from the traditional approaches treating effort to collect data (PEOU) and the value derived (PU) as two separate conversations. BVSM merges the two through managers providing the right communication. For one, asking staff to collect data has to be linked to a clear outcome and two, the outcomes of the

process need to be communicated as well to demonstrate the value. This builds motivation because efforts are not wasted, but also saves resources if data being collected is for a specific goal. This creates high acceptance and high commitment of the system throughout the organization.

Managerial & Practical Implications

Auditing the Burden-Value Gap: managers can use BVSM to check whether their EHR systems are performing as expected or merely transmitting the burden. For example, if a doctor has to insert a patient name in three separate spaces during one visit, the first pillar of data collection with efficiency is failing and warrants improvement.

Prioritizing Strategic Investment: the model can help make better investment decisions. If hospitals have gone to all that trouble to implement costly hardware and software and collect all this data, it might as well produce high quality insights beyond basic descriptive statistics. Custom dashboards are a good example of applying advanced analysis.

Protecting Data Quality and Safety: low PEOU may be a risk indicator for compromised data. Staff using significant effort to document data may look for workarounds that compromise data quality.

Encouraging Staff Motivation: manager can play a role to validate the intrinsic motivation of employees through communication and feedback as to how the employee effort is translating into tangible outcomes.

Policy Implications

Changing Regulation: regulatory bodies are focused on compliance with complete documentation. While useful, it may unintentionally contribute to the burden. Changing policy to incorporate aspects of data justice could do more to improve HER.

Alignment with Patient-Centered Care: By focusing on creating value, policy can shift to prioritize patient-centered care by using the strategic insights to directly benefit patients.

CONCLUSION

BVSM is a conceptual roadmap asserting that the future success of digital health systems relies on changing the perception of EHR from one of burden to an asset. The TAM principle codified within the data governance framework exemplifies how to reduce effort while raising the value of data by reorienting the whole organizational functioning, from technology to people. The self-sustaining BV feedback loop is created through communication on top of improving human experiences with technology. Therefore, the investment not only mitigates clinician burnout, but drives macro changes when biopower is fully unlocked.

The novelty of BVSM is that it is management oriented and prescriptive in nature, because it does not just measure PEOU and PU, but seeks to apply them as governance pillars.

While this is a robust conceptual framework, it is still a theoretical construct that will require validation through application and measurement in a clinical setting. Another limitation is that the BV feedback loop assumes that upon implementation, managers will be able to coordinate activities seamlessly between clinical operations and executive function. Co-ordination and cooperation between the two organizational branches is necessary from the framework to succeed. Therefore, one recommendation for future research is to implement longitudinal studies that empirically test the model by measuring changes in patient outcomes and change in clinician burnout following adoption of BVSM principles.

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List of Abbreviations

AI: Artificial Intelligence

BVSM: Burden – Value Shift Model

EHR- Electronic Health Records

FHIR: Fast Healthcare Interoperability Resource

HL7: Health Level Seven

HSM: Health Services Management

IT: Information Technology

ML: Machine Learning

NLP: Natural Language Processing

PEOU: Perceived Ease of Use

PGHD: Patient-Generated Health Data

PU: Perceived Usefulness

RPA: Robotic Process Automation

SVA: Strategic Value Alignment

TAM: Technology Acceptance Model

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APPENDICES

Appendix A: Practical example of the **BV Feedback Loop** in action

Stage 1- Strategic Inquiry

- ✓ Management-driven: Instead of asking "what data must we collect?", management starts with, the question of "What problem are we solving?"
- ✓ Example: The hospital aims to reduce patient readmission rates for congestive heart failure, which is costly and indicates a care gap. Their strategic inquiry to start with would be focused on "Why are these patients being readmitted within 30 days?"

Stage 2- Minimum Data Definition

- ✓ Collaborative: Data analysts and clinical leaders translate the strategic question into the absolute *minimum* data points required to solve the problem. This is a critical step to prevent waste of collecting everything just in case.
- ✓ Example: Only three specific data points at discharge are required instead of 50-question form: (1) Was a follow-up appointment scheduled? (2) Does the patient confirm understanding of their medication plan? (3) Is there a designated caregiver at home?

Stage 3- Conscious Workflow Integration

- ✓ Clinical-focused: The new, minimal data points are integrated into the EHR workflow with a focus on maximum ease of use. The goal is to make the collection of *valuable* data *less burdensome* than the collection of useless data was before. The *why* is also communicated to staff.
- ✓ Example: The EHR prompts the discharging nurse with three simple, mandatory yes/no questions. The nurse knows this isn't just for compliance; it directly feeds the hospital's readmission strategy. This knowledge alone reduces the *perceived* burden.

Stage 4- Value Realization & Iteration

- ✓ Management-focused: aggregated data used by leadership to make-decisions, take action and share results with staff.
- ✓ Example: 60% of readmitted patients had no confirmed follow-up appointment. Management implements a new policy to book a follow-up before the patient discharge. If readmission rates drop, success is communicated to show value.

Appendix B: BVSM Action Plan

BVSM Pillar	Core Intervention	Specific Action Examples
Pillar 1: Data Collection (Reducing Effort/Increasing PEOU)	Automation & Smart Capture	Ambient listening technology to capture conversations
	Workflow Ergonomics	Redesign system to reduce number of clicks
	Minimum Data Definition	Absolute minimum data required for strategic goals.
	Interoperability Solutions	Two-way data exchange systems such as HL7 FHIR
Pillar 2: Data Processing (Ensuring Quality and Accessibility)	Standardization & Cleaning	Standardized Terminologies (e.g., SNOMED CT, LOINC) & real-time data validation checks
	Data Structuring	NLP to transform unstructured data (e.g. clinical notes) to structured data points
	Security and Governance	Establish access protocols with proper authorization
Pillar 3: Data Analysis (Creating Insights/Increasing PU)	Predictive Modeling	Machine learning models for forecasting
	Custom Dashboards	Role-specific dashboards for different user groups e.g. managers or CEO
	Targeted Alerts	Highly specific and low frequency to avoid alert fatigue
Pillar 4: Strategic Feedback (Closing the Loop and Sustaining PU)	Publicizing Success (Closing the BV Loop)	Routinely share the results of strategic analysis with the frontline staff
	Policy Implementation	Data-driven insights to update clinical workflows
	Just-in-Time Training	Targeted, brief training modules to specific issues
	Leadership Accountability	Senior leadership to explicitly link strategic initiatives to data from the EHR