

From Trust Erosion to Health System Collapse: SEA-Based Framework of Trust Breakdown and Early Warning Signals

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Abstract

Trust is increasingly recognized as a fundamental component of health systems; however, it is commonly regarded as an outcome of health system performance rather than a dynamic indicator of emerging system vulnerability. Existing performance assessment frameworks rarely incorporate trust erosion as an early warning signal preceding health system saturation and collapse.

This study aimed to find a conceptual SEA (Stability–Efficiency–Adaptability)-based framework explaining how trust progressively deteriorates across multiple levels of the health system and how this process can be translated into measurable early warning indicators.

A qualitative exploratory study using an abductive design was conducted through semi-structured interviews with 20 participants representing policymakers, healthcare managers, clinicians, researchers, digital health experts, and community representatives. Data were analyzed using open, axial, and selective coding before findings were organized within the SEA framework to identify trust dimensions, determinants, erosion mechanisms, and potential early warning indicators.

Trust emerged as a multidimensional system property operating across individual, interpersonal, professional, organizational, informational, public, and adaptive domains. Participants identified governance failures, workforce burnout, declining service quality, misinformation, financial pressures, and reduced institutional legitimacy as principal drivers of trust erosion. Progressive deterioration manifested through declining cooperation, increasing operational friction, reduced public engagement, and weakened adaptive capacity. These findings were translated into a preliminary framework of measurable trust-sensitive indicators and risk thresholds for monitoring health system vulnerability. Repositioning trust erosion as an early warning signal rather than a downstream outcome provides a novel systems-based approach for anticipating health system saturation and supporting timely policy interventions before irreversible system collapse occurs.

Keywords: Trust Erosion; Health System Collapse; Early Warning Signals; SEA Model ; Health System; Public Trust.

1. Introduction

Trust is increasingly recognized as a foundational component of health systems rather than merely an ethical value or an interpersonal attribute. The effective functioning of healthcare depends on individuals' willingness to accept vulnerability in situations characterized by uncertainty, information asymmetry, and dependence on the competence and integrity of others. In their seminal integrative model, Mayer, Davis, and Schoorman define trust as an individual's willingness to become vulnerable to another party based on the expectation that the trustee will perform actions that are important to the trustor, irrespective of the

ability to fully monitor or control those actions. Their framework further distinguishes trust from related concepts such as cooperation, confidence, and risk-taking, establishing trust as a multidimensional construct influenced by perceived ability, benevolence, and integrity. Accordingly, trust should be viewed as a prerequisite for coordinated action within complex organizations, particularly in sectors such as healthcare where uncertainty, professional dependency, and high-stakes decision-making are inherent characteristics (Mayer et al., 1995).

Within healthcare, the concept of trust extends beyond interpersonal relationships between patients and clinicians to encompass confidence in healthcare organizations, regulatory institutions, and the health system as a whole. Research on public trust demonstrates that individuals continuously evaluate health systems through both institutional guarantees including regulation, accountability, patient protection, and quality assurance and their direct experiences with healthcare delivery. Consequently, public trust reflects expectations regarding the future performance of health systems and influences how people approach subsequent interactions with healthcare providers. Because public trust develops through repeated experiences while simultaneously shaping future healthcare behaviors, it represents both a consequence of previous system performance and a determinant of future system utilization. These characteristics have led researchers to propose that public trust should be considered an important dimension of health system performance rather than merely an outcome of healthcare encounters (Evelien van der Schee ,2016)

More recently, the literature has shifted from examining trust as a static organizational attribute toward understanding the dynamic process of trust erosion. Eaddy and colleagues argue that declining trust has become a widespread societal challenge, particularly following the COVID-19 pandemic, with health institutions, governments, and scientific organizations experiencing substantial reductions in public confidence. Building on previous trust scholarship, they propose the Trust Erosion Framework (TEF), conceptualizing trust erosion as a gradual, cyclical process rather than an isolated event. Their framework emphasizes that trust does not disappear suddenly; instead, it progressively weakens under the combined influence of misinformation, political polarization, organizational failures, and repeated crises. Importantly, the authors note that although trust has been extensively studied, understanding of the mechanisms through which trust erodes and how organizations can anticipate and manage this process remains limited (Eaddy et al., 2025).

The growing importance of trust has become particularly evident during large-scale public health emergencies, where uncertainty, rapidly evolving scientific knowledge, and information asymmetry fundamentally reshape the relationship between health institutions and society. During such crises, individuals often lack sufficient knowledge to independently evaluate risks and therefore rely heavily on trusted institutions when making health-related decisions. However, this dependency also makes trust highly vulnerable to misinformation, inconsistent communication, and perceived institutional failures. Building on Mayer's concept of trust as willingness to accept vulnerability, Eaddy et al. argue that health crises create precisely the conditions under which trust can either be strengthened through effective governance or progressively eroded through unmet public expectations. Trust erosion therefore represents not only a communication problem but also a governance challenge that directly influences public behavior during emergencies. (Mayer et al., 1995; Eaddy et al., 2025)

Evidence accumulated after the COVID-19 pandemic suggests that declining trust extends far beyond attitudes toward individual healthcare professionals. A recent scoping review of trust, trust repair, and public health found that institutional trust including trust in governments, health systems, public health authorities, scientists, and information sources has become the dominant focus of contemporary research because it strongly influences vaccination uptake, adherence to preventive measures, healthcare utilization, and broader public health outcomes. The review further highlights considerable heterogeneity in conceptual definitions and measurement approaches, making comparisons across studies difficult and limiting the cumulative development of evidence regarding how trust can be strengthened or restored. The authors therefore identify an important need for more coherent conceptual frameworks capable of integrating different dimensions of trust and explaining how trust deficits emerge and evolve within health systems (Kalulu et al., 2025).

At the same time, recent literature has increasingly linked trust with preparedness, resilience, and early warning. International Federation of Red Cross and Red Crescent Societies in The World Disasters

Report 2026 emphasizes that trust is a critical determinant of whether communities respond to official warnings, particularly when accurate information competes with misinformation and harmful narratives. The report argues that trusted messengers, transparent communication, community engagement, and continuous feedback mechanisms are essential for effective early warning systems. More importantly, it suggests that strengthening trust should not be viewed solely as a communication objective but as a core component of resilience and anticipatory governance capable of improving societal responses before crises escalate (IFRC¹, 2026).

Despite these important advances, the existing literature demonstrates that research on trust has evolved along several largely independent pathways. Organizational scholars have primarily focused on the conceptual foundations and antecedents of trust, emphasizing vulnerability, perceived trustworthiness, and risk-taking in interpersonal and organizational relationships (Mayer et al., 1995). Studies of public trust have instead concentrated on institutional legitimacy, health system performance, and the mechanisms through which citizens develop confidence in healthcare systems. These studies consistently suggest that institutional arrangements, quality of care, patient rights, regulatory oversight, and previous healthcare experiences collectively shape public trust and ultimately influence how individuals engage with health services (Evelien van der Schee, 2016). More recently, crisis communication research has examined the erosion of trust during global emergencies, highlighting the roles of misinformation, political polarization, and ineffective communication in accelerating declining public confidence (Eaddy et al., 2025).

Although these studies have substantially improved understanding of trust within healthcare, they share an important conceptual characteristic: trust is predominantly examined either as a determinant of health-related behaviours or as an outcome of organizational performance and crisis management. The scoping review by Kalulu et al. demonstrates that most empirical studies investigate how institutional trust influences vaccination uptake, preventive behaviors, healthcare utilization, or compliance with public health recommendations. At the same time, relatively few studies examine trust itself as a dynamic system characteristic that evolves alongside broader structural changes within health systems. Furthermore, the review identifies considerable variation in definitions, objects of trust, and measurement approaches, limiting theoretical integration and making comparisons across studies difficult (Kalulu et al., 2025).

A similar observation emerges from the Trust Erosion Framework proposed by Eaddy and colleagues. While the framework represents an important conceptual advance by describing trust erosion as a gradual and cyclical process influenced by interacting societal and organizational forces, its primary emphasis remains on crisis communication, organizational response, and trust management during global emergencies. The framework does not explicitly explain how progressive trust erosion interacts with the internal dynamics of health systems or how declining trust may signal broader deterioration in governance, service delivery, workforce stability, or system performance before observable system failure occurs (Eaddy et al., 2025).

This limitation becomes increasingly important as recent research on health system saturation suggests that collapse is rarely the consequence of a single catastrophic event. Rather, health systems gradually accumulate structural pressures that weaken institutional stability, reduce operational efficiency, and constrain adaptive capacity over time. Within this perspective, erosion of trust is no longer simply a communication challenge or a social consequence of poor performance; instead, it may represent one of the earliest observable manifestations of progressive systemic deterioration. In our previous work on the SEA framework, erosion of trust emerged as a central stability-related factor because it directly affects institutional legitimacy, professional credibility, and public confidence, all of which are essential for maintaining the continuity and resilience of healthcare systems. (Manafi, M. 2025, 2026; Hojabri et al., 2026 a)

Existing evidence therefore indicates that trust is now widely acknowledged as a determinant of health behaviors, institutional legitimacy, crisis communication, and public health preparedness. The literature has also made substantial progress in conceptualizing organizational trust, public trust, trust repair, and trust erosion across different contexts. Nevertheless, these advances remain fragmented. Organizational

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theories primarily explain why trust develops or deteriorates; public health studies mainly examine how trust influences health behaviors and policy compliance; and crisis communication frameworks focus on how organizations should respond after trust has been threatened (Mayer et al., 1995; Eaddy et al., 2025; Kalulu et al., 2025). However, these bodies of literature have not yet been integrated into a systems-based perspective capable of explaining how progressive trust erosion interacts with the structural dynamics of health systems as they move from routine functioning toward saturation and eventual collapse.

From a health systems perspective, this represents an important theoretical gap. Current performance assessment frameworks continue to rely predominantly on operational and outcome indicators such as accessibility, quality, efficiency, utilization, financial protection, and health outcomes, while trust is generally treated as a secondary outcome or a contextual factor. Yet, evidence from studies on public trust, organizational trust, and crisis management suggests that declining trust often precedes reductions in cooperation, adherence, institutional legitimacy, and public engagement (Evelien van der Schee, 2016; Eaddy et al., 2025; IFRC, 2026). These observations raise an important but insufficiently explored question: can progressively trust erosion itself function as an early warning signal of increasing systemic vulnerability before conventional performance indicators reveal substantial deterioration?

Accordingly, this study seeks to address this conceptual gap by repositioning trust erosion from a consequence of health system performance to a dynamic indicator of system vulnerability. Building upon the Stability–Efficiency–Adaptability (SEA) framework developed in our previous work, this study conceptualizes trust erosion as a multidimensional process operating across personal, interpersonal, professional, organizational, and public levels of the health system. Rather than examining trust solely as a determinant of individual behavior or an outcome of organizational performance, we propose that progressive deterioration of trust reflects the weakening balance among stability, efficiency, and adaptability that characterizes health systems approaching saturation (Hojabri et al., 2026).

Therefore, the aim of this study is to find a SEA-based conceptual framework that explains how trust progressively erodes across multiple levels of the health system and how this erosion can be translated into measurable early warning signals of health system saturation and collapse. By integrating theories of organizational trust, public trust, trust erosion, and health system performance within a unified systems perspective, this study contributes a novel conceptual foundation for anticipatory governance and provides a basis for developing trust-sensitive indicators capable of supporting earlier policy intervention before irreversible system failure occurs.

2. Literature Review

As health systems became increasingly complex, researchers recognized that this interpersonal perspective alone was insufficient to explain how confidence is established and maintained within healthcare. Patients no longer interact solely The concept of trust has undergone a remarkable evolution over the past three decades, progressing from an interpersonal psychological construct to a multidimensional characteristic of health systems. Early theoretical work primarily viewed trust as a mechanism that enables cooperation under conditions of uncertainty, where one individual accepts vulnerability based on positive expectations regarding another's competence and intentions. Within organizational research, this perspective provided an analytical distinction between trust, trustworthiness, and risk-taking behaviour, emphasizing that trust is neither blind confidence nor simple cooperation but rather a deliberate decision made in situations where complete information is unavailable. By identifying ability, benevolence, and integrity as the principal dimensions of trustworthiness, this theoretical framework established the conceptual basis for subsequent research across organizational, institutional, and healthcare settings (Mayer et al., 1995, 2024, Souvatzi, E et al, 2024, Seyedin et al, 2021 , LoCurto et al , 2016, Aboueid et al, 2023).

As health systems became increasingly complex, researchers recognized that this interpersonal perspective alone was insufficient to explain how confidence is established and maintained within healthcare. Patients no longer interact solely with individual physicians but instead engage with interconnected systems involving hospitals, insurance organizations, regulatory agencies, digital platforms,

and public institutions. Consequently, trust gradually expanded from a characteristic of individual clinical encounters to a broader assessment of institutional legitimacy and health system performance. Research exploring the mechanisms of public trust demonstrated that citizens evaluate healthcare systems through a combination of previous experiences, perceived fairness, accessibility, accountability, quality of care, and confidence in institutional safeguards. Importantly, these studies showed that public trust cannot be understood simply as the aggregate of individual patient experiences; rather, it reflects collective expectations regarding the future behaviour and reliability of health institutions (van der Schee, 2016).

This conceptual expansion was accompanied by increasing recognition that trust is inherently multidimensional. Rather than representing a single construct, trust within healthcare operates simultaneously across several interconnected domains, including trust in healthcare professionals, healthcare organizations, public health authorities, governments, scientific institutions, and health information systems. Recent efforts to develop multidimensional measurement instruments further reinforce this perspective by demonstrating that interpersonal and institutional trust influence one another and collectively shape citizens' confidence in healthcare systems. Such findings suggest that trust should not be viewed as isolated relationships between individual actors but as an emergent property of the health system itself, reflecting the quality of interactions occurring across multiple organizational and societal levels (Meyer et al., 2024); Anand & Kutty, 2015).

Despite this conceptual progress, defining trust has proven considerably easier than measuring it. The literature consistently highlights substantial variation in both the operationalization and measurement of trust, with existing instruments focusing on different objects of trust, including physicians, healthcare organizations, insurers, researchers, and public institutions. Reviews of trust measurement identify numerous validated scales while simultaneously emphasizing considerable heterogeneity in conceptual definitions, dimensions, and methodological approaches. As a result, comparisons across studies remain challenging, limiting the cumulative development of evidence and complicating efforts to integrate trust into routine health system assessment. These limitations become particularly important when trust is expected to function as an indicator capable of informing health policy and system governance rather than merely describing individual attitudes (Platt et al. 2018).

The diversification of trust research also transformed understanding of its determinants. Earlier investigations largely focused on interpersonal communication, professional competence, and ethical behaviour within clinical encounters. However, more recent evidence suggests that trust develops through continuous interactions with the broader healthcare environment. Rapid evidence reviews indicate that patients associate trustworthy healthcare with effective communication, transparency, continuity of care, accessibility, confidentiality, empathy, and technical competence. These findings reinforce the argument that trust emerges not from isolated clinical encounters but from cumulative experiences across the healthcare journey, making organizational processes and service delivery integral components of trust formation. (Garrubba & Yap, 2019).

The COVID-19 pandemic marked a turning point in trust research by demonstrating that trust is not only a determinant of healthcare utilization but also a critical prerequisite for effective health system governance during periods of uncertainty. Unlike previous public health emergencies, the pandemic unfolded within an unprecedented digital information environment in which scientific evidence, governmental recommendations, media reporting, and public opinion evolved simultaneously. Consequently, public confidence was challenged not only by the epidemiological characteristics of the disease but also by rapidly changing recommendations, inconsistent institutional communication, and competing information sources. This experience shifted scholarly attention from understanding how trust is established toward investigating how trust deteriorates under prolonged systemic stress. Rather than viewing declining trust as an isolated consequence of unsuccessful crisis management, recent literature increasingly conceptualizes trust erosion as a gradual process capable of influencing multiple dimensions of health system performance (Eaddy et al., 2025; Kalulu et al., 2025).

A major catalyst for this conceptual transition has been the growing recognition of the role of misinformation and disrupted information ecosystems in shaping public confidence. Systematic reviews consistently demonstrate that misinformation disseminated through digital platforms influences health-related beliefs, weakens confidence in scientific institutions, increases vaccine hesitancy, delays healthcare

seeking, and promotes ineffective or potentially harmful health practices. Importantly, these studies emphasize that misinformation rarely operates independently. Instead, it interacts with pre-existing institutional distrust, political polarization, and limited health literacy, thereby amplifying vulnerabilities that already exist within healthcare systems. Consequently, declining trust should not be interpreted merely as the result of inaccurate information but as the outcome of complex interactions among communication failures, governance challenges, and societal expectations. (Eaddy et al., 2025; Kalulu et al., 2025; (Suarez-Lledo & Alvarez-Galvez, 2021).

The relationship between trust and health behaviour has similarly become more nuanced. Earlier research generally assumed that increasing trust would automatically improve adherence to health recommendations. More recent evidence, however, suggests that behavioural responses emerge from the interaction between institutional trustworthiness, source credibility, individual health literacy, and perceived self-efficacy. Studies investigating vaccine hesitancy during the COVID-19 pandemic indicate that individuals are more likely to accept public health recommendations when information originates from trusted institutions and is communicated through credible, transparent, and consistent channels. Conversely, contradictory messages and declining confidence in authorities substantially reduce compliance with vaccination programmes and other preventive interventions. These findings suggest that trust operates as a mediating mechanism linking institutional performance with population behaviour rather than functioning as an isolated psychological construct (Weerakoon et al., 2022; Whitehead et al., 2023).

Recent scholarship has therefore moved beyond describing the existence of misinformation toward examining the broader information ecosystems within which trust is produced, challenged, and repaired. Rather than focusing exclusively on correcting false information, contemporary frameworks argue that sustainable trust depends upon continuous engagement with communities, transparent governance, effective risk communication, and long-term institutional credibility. From this perspective, infodemics represent only one manifestation of wider systemic weaknesses in information governance. Preventing trust erosion consequently requires proactive management of information environments before crises occur rather than reactive responses once misinformation has become widespread. This shift from reactive communication toward anticipatory governance represents an important conceptual development within contemporary public health literature (Ishizumi et al., 2024; IFRC², 2026).

This evolving perspective has also transformed understanding of trust erosion itself. Rather than describing trust loss as a sudden consequence of isolated failures, the Trust Erosion Framework conceptualizes erosion as a cumulative and self-reinforcing process in which repeated institutional shortcomings progressively weaken public confidence over time. Similar to environmental erosion, small and often imperceptible changes gradually accumulate until substantial structural damage becomes visible. Such a conceptualization is particularly relevant for health systems because deterioration in public confidence frequently develops long before conventional indicators of organizational performance reveal major deficiencies. Consequently, trust erosion may represent one of the earliest observable manifestations of deeper systemic vulnerabilities that remain largely undetected by traditional performance measurement frameworks (Eaddy et al., 2025).

The progressive expansion of trust research has fundamentally altered how trust is understood within health systems. Rather than functioning solely as an individual attitude or an interpersonal phenomenon, trust is increasingly conceptualized as a system-level characteristic that both reflects and influences the capacity of health systems to perform effectively. This shift recognizes that citizens rarely distinguish between individual healthcare encounters and the broader institutions responsible for organizing, financing, regulating, and governing healthcare. Instead, experiences occurring at different levels of the health system accumulate over time and collectively shape public confidence in the system as a whole. Consequently, trust simultaneously represents an outcome of previous system performance and a determinant of future interactions between populations and health services. This reciprocal relationship suggests that trust should be viewed as an integral component of health system functioning rather than an external social variable. (McKee et al., 2024; Van der Schee, 2016)

² International Federation of Red Cross

Contemporary scholarship further argues that trust influences virtually every major function of healthcare systems. Individuals who trust healthcare institutions are more likely to seek timely care, comply with preventive recommendations, participate in vaccination programmes, share sensitive health information, and maintain long-term relationships with healthcare providers. At the organizational level, trust facilitates collaboration among professionals, supports effective leadership, improves communication, and strengthens organizational resilience during periods of uncertainty. Conversely, declining trust contributes to delayed healthcare utilization, reduced adherence to treatment, increased resistance to public health interventions, workforce dissatisfaction, and weakened institutional legitimacy. These consequences demonstrate that trust is deeply embedded within the operational performance of health systems and cannot be regarded merely as a psychological perception or a communication outcome (McKee et al., 2024; Garrubba & Yap, 2019; Kalulu et al., 2025).

An important implication of this systems perspective is that trust increasingly behaves as an emergent property generated through interactions among governance structures, healthcare organizations, professionals, communities, and information environments. Unlike conventional performance indicators that measure isolated components of healthcare delivery, trust captures the cumulative effects of multiple system characteristics, including transparency, accountability, accessibility, responsiveness, equity, communication quality, and institutional integrity. Consequently, fluctuations in public trust may occur before measurable deterioration appears in traditional indicators such as mortality, service utilization, financial performance, or quality metrics. This characteristic makes trust particularly attractive as a potential leading indicator for monitoring the health of complex adaptive systems, where structural weaknesses often accumulate gradually before becoming operationally visible (McKee et al., 2024; Platt et al., 2023 a,b).

This interpretation is increasingly supported by evidence from health system transformation research. Rather than considering trust as a consequence of successful reforms, recent policy analyses argue that trust constitutes a prerequisite for sustainable transformation itself. Health system reforms require cooperation among governments, healthcare professionals, patients, and communities, all of whom must accept uncertainty regarding future organizational changes. Without sufficient trust, even technically sound reforms may encounter resistance, reduced compliance, and declining institutional legitimacy. McKee and colleagues therefore argue that rebuilding trust should become a strategic objective of health system governance rather than a secondary communication activity undertaken after crises emerge. Such observations reinforce the view that trust should be integrated into routine health system assessment and policy evaluation rather than treated solely as an outcome measured after implementation (McKee et al., 2024a; McKee et al., 2024b).

Despite this growing recognition, existing health system assessment frameworks continue to operationalize trust only to a limited extent. Traditional performance models predominantly evaluate accessibility, efficiency, effectiveness, quality, safety, financial protection, and health outcomes, while trust generally appears as a patient experience measure or a contextual determinant of service utilization. Consequently, although contemporary literature increasingly acknowledges trust as fundamental to health system legitimacy and resilience, few frameworks explicitly conceptualize progressive trust deterioration as an indicator of increasing systemic vulnerability. This omission is particularly significant because the gradual decline of trust frequently precedes observable deterioration in healthcare performance, suggesting that conventional monitoring systems may identify crises only after substantial institutional damage has already occurred. The challenge, therefore, is no longer demonstrating that trust matters, but determining how trust can be systematically incorporated into health system surveillance and early warning mechanisms. (McKee et al., 2024 a ; IFRC, 2026).

The emerging literature on health system saturation provides an opportunity to address this limitation by reframing trust within a broader systems perspective. Recent conceptual work suggests that health system collapse rarely results from single catastrophic events but instead develops through the cumulative interaction of structural pressures that progressively weaken institutional stability, operational efficiency, and adaptive capacity. Within such a framework, trust erosion is no longer interpreted merely as a consequence of declining performance but as an observable manifestation of systemic imbalance. Progressive reductions in institutional credibility, professional confidence, public cooperation, and organizational legitimacy may therefore indicate that the health system is approaching critical thresholds

long before conventional operational indicators reveal overt failure. This interpretation establishes the conceptual foundation for considering trust erosion as a potential early warning signal of health system saturation and collapse (Hojabri & Manafi, 2026 a; Hojabri & Manafi, 2026 b).

From Trust Erosion to Early Warning: Positioning the SEA Framework

Collectively, the contemporary literature demonstrates a substantial expansion in the conceptualization of trust within healthcare. Research has progressively moved beyond viewing trust as an interpersonal phenomenon to recognizing its institutional, organizational, societal, and system-wide dimensions. Existing studies consistently demonstrate that trust influences healthcare utilization, treatment adherence, preventive behaviours, information sharing, professional collaboration, organizational legitimacy, and public acceptance of health policies. Likewise, recent scholarship has substantially advanced understanding of trust erosion by highlighting the cumulative effects of misinformation, communication failures, governance challenges, and repeated institutional crises on declining public confidence. These contributions have established trust as a fundamental determinant of health system performance and resilience rather than merely an ethical or psychological construct (McKee et al., 2024 a; Kalulu et al., 2025; Eaddy et al., 2025).

Nevertheless, an important conceptual limitation remains evident across the existing literature. Most studies continue to examine trust either as an antecedent of individual health behaviours or as an outcome of organizational performance, service quality, crisis communication, or public health interventions. Consequently, trust is predominantly interpreted as something that explains health system performance or reflects previous institutional actions. Comparatively little attention has been devoted to examining trust as an evolving characteristic of health systems that changes simultaneously with broader structural conditions. Even studies explicitly addressing trust erosion primarily focus on communication strategies, organizational responses, or mechanisms for rebuilding confidence after crises have already emerged, rather than considering whether progressive trust deterioration itself may represent one of the earliest manifestations of increasing systemic vulnerability (Eaddy et al., 2025 ; Kalulu et al., 2025) .

A second limitation concerns the relationship between trust and health system performance assessment. Contemporary performance frameworks routinely monitor indicators related to accessibility, quality, patient safety, efficiency, financial protection, and health outcomes. Although patient satisfaction or public confidence occasionally appear among these indicators, trust itself is rarely conceptualized as a dynamic systems indicator capable of signalling progressive deterioration before operational failures become evident. This omission is particularly important because evidence synthesized throughout this review suggests that declining trust frequently precedes measurable reductions in healthcare utilization, treatment adherence, institutional legitimacy, workforce engagement, and community cooperation. These observations imply that trust possesses characteristics expected of a leading indicator rather than simply a lagging outcome measure (Platt et al., 2023 a,b; McKee et al., 2024 a; Garrubba & Yap, 2019).

This gap becomes even more apparent when contemporary health systems are viewed as complex adaptive systems operating under continuously changing political, economic, technological, and social conditions. Increasing service demand, workforce shortages, demographic change, digital transformation, fiscal constraints, and information disorder rarely produce immediate system collapse. Instead, these pressures accumulate gradually, progressively weakening institutional stability, operational efficiency, and adaptive capacity. Within such environments, deterioration often begins with subtle changes in relationships among citizens, professionals, organizations, and governments before becoming visible through conventional performance indicators. Trust therefore occupies a unique position because it reflects these relational changes while simultaneously influencing the capacity of health systems to respond effectively to emerging challenges (Hojabri & Manafi, 2026 a, b, c, d, e; Gutowski, et al, 2026).

Against this background, the present study proposes a different conceptual perspective. Rather than treating trust erosion solely as a consequence of declining health system performance, this study conceptualizes progressive trust deterioration as an observable manifestation of systemic imbalance. Building upon the Stability–Efficiency–Adaptability (SEA) framework, trust is interpreted as a multidimensional system property that reflects interactions among governance, healthcare organizations,

professionals, patients, communities, and information environments. Within this perspective, persistent reductions in institutional credibility, professional confidence, organizational legitimacy, and public cooperation are not merely social outcomes but potential early warning signals indicating that the balance among stability, efficiency, and adaptability is progressively deteriorating. Conceptualizing trust in this manner extends existing literature beyond behavioural and organizational explanations toward a systems-oriented understanding of health system vulnerability and provides a theoretical basis for developing measurable trust-sensitive indicators capable of supporting anticipatory governance before irreversible system failure occurs (Hojabri & Manafi, 2026 a, b; Gutowski, et al, 2026).

3. Methodology

This study is aim to investigate Trust as a central operational mechanism influencing health system saturation and collapse, using the SEA Model (Stability, Efficiency, and Adaptability) as the primary organizing framework for interpretation and evaluation. The study adopts a qualitative exploratory approach with an abductive research design because the objective is not merely to examine trust as an isolated social construct, but rather to understand how trust functions within complex health systems, how it is shaped by multiple structural influences, how it deteriorates over time, and how such deterioration may ultimately contribute to system saturation and collapse.

The use of an abductive approach is considered appropriate because neither a purely inductive nor a purely deductive strategy is sufficient to explain the multidimensional nature of trust within health systems. A purely deductive approach risks imposing categories derived from previous literature and potentially overlooking emerging realities from participant experiences. Conversely, a purely inductive approach may ignore important theoretical insights developed within the existing body of trust literature. Therefore, this study combines both perspectives by using previous literature as an initial conceptual guide while allowing dimensions, determinants, mechanisms, and pathways of trust to emerge directly from empirical data.

The central assumption of this study is that trust does not operate independently within health systems. Rather, trust functions as a relational and operational infrastructure through which broader structural pressures influence system behavior. Weak governance, workforce challenges, declining service responsiveness, poor communication, financial inequities, and reduced social legitimacy do not necessarily create health system collapse directly. Instead, these structural pressures frequently act through mechanisms that weaken trust relationships, gradually reducing coordination, legitimacy, responsiveness, and adaptive capacity throughout the system.

Consequently, Trust is positioned as the primary phenomenon of interest, while broader health system components are examined only insofar as they contribute to the creation, strengthening, weakening, or erosion of trust. Existing literature on organizational trust, public trust, institutional trust, healthcare trust, and informational trust had therefore serve as a preliminary conceptual orientation rather than a predetermined framework. Literature will be used to ensure that important domains are not overlooked during interview development and data collection; however, it will not determine the final dimensions of trust. Final dimensions, determinants, mechanisms, and relationships will be generated from the empirical data obtained during interviews. Table no1. shows interviews question with primary purpose.

Table1. Interview Questions

No.	Interview Question	Primary Purpose	Potential SEA Mapping
1	How do you define trust within health systems, and what forms or dimensions of trust do you consider important?	Explore participants' conceptual understanding of trust	Stability / Efficiency / Adaptability
2	Which structural, managerial, professional, social, informational, or economic factors most strongly influence trust within health systems?	Identify determinants affecting trust	All SEA domains
3	What early signs indicate that trust is beginning to weaken within health systems?	Explore initial deterioration processes	Stability / Efficiency

4	How does declining trust affect relationships, coordination, legitimacy, and system functioning?	Examine functional consequences of trust erosion	Stability / Efficiency
5	At what stage does trust deterioration evolve into a broader condition affecting system performance and functioning?	Explore transition toward systemic impact	All SEA domains
6	How can trust breakdown contribute to wider health system dysfunction or collapse?	Explore collapse pathways	All SEA domains
7	What indicators or warning signs may be useful for monitoring trust vulnerability and identifying potential risks of collapse?	Identify measurable indicators	All SEA domains

Participants had selected using purposive sampling with maximum variation in order to capture a wide range of perspectives regarding trust within health systems. Participants may include policymakers, healthcare managers, physicians, nurses, public health researchers, digital health experts, and representatives of patients or communities. Inclusion of multiple stakeholder groups is necessary because trust functions differently across organizational levels and professional contexts, and understanding these differences is essential for developing a comprehensive framework. Data collection had continued until thematic saturation is achieved, defined as the point at which additional interviews no longer provide substantially new concepts or insights regarding trust processes. Based on previous qualitative studies, an estimated sample of approximately 20 participants is anticipated, although the final number had been determined by data saturation. The inclusion of participants from policy, managerial, clinical, informational, academic, and community backgrounds aimed to maximize diversity of perspectives and facilitate the emergence of multiple trust-related dimensions and mechanisms. Participant selection was not intended to assign predefined trust categories to specific groups but rather to provide broad experiential coverage for the exploration of trust processes across the health system. Table no 2 shows distribution of participants.

Table 2. Distribution of Participants

Participant group	N
Health policymakers / regulators	3
Senior health managers / hospital executives	2
Physicians	3
Nurses / frontline staff	2
Health system academics / researchers	3
Digital health / health information experts	3
Patient/community representatives	4

Data had collected through semi-structured interviews lasting approximately 45–60 minutes. Interviews had conducted either face-to-face or through online platforms according to participant preference and availability. Following participant consent, interviews audio-recorded and transcribed verbatim for analysis.

The interview guide had designed to maintain Trust as the central focus while allowing participants sufficient flexibility to identify dimensions, influences, and mechanisms that may not had previously recognized in the literature. Rather than directly asking participants about predefined categories of trust, questions are intentionally broad and exploratory in order to allow the natural emergence of concepts from participant experiences and perceptions.

The interview questions seek to explore how participants define trust within health systems, what factors influence trust, what signs indicate trust deterioration, how declining trust influences system functioning, when trust deterioration progresses into broader systemic saturation, how trust breakdown may contribute to collapse, and which indicators may provide early warning signals regarding trust vulnerability.

Data analysis had proceeded in four stages. In the first stage, interview transcripts had undergone inductive open coding in order to identify initial concepts and experiences associated with trust. At this stage no predefined categories had imposed on the data. Initial codes include concepts such as long waiting times, patient dissatisfaction, staff dissatisfaction, professional conflict, misinformation, vaccine resistance, media literacy, service failures, declining confidence, care-seeking outside the health system, and policy inconsistency.

During the second stage, axial coding had conducted to identify relationships among initial codes and organize them into broader conceptual categories. For example, concepts such as long waiting times, poor patient experiences, and dissatisfaction may be grouped into broader service-related trust mechanisms. Similarly, misinformation, contradictory communication, and low media literacy may form informational trust-related mechanisms. Workforce burnout, staff dissatisfaction, and professional conflict may emerge as workforce-related trust mechanisms. Governance-related mechanisms may include reduced transparency, inconsistent policies, and perceived lack of accountability.

The third stage had involved selective coding and framework development. At this stage, broader thematic structures had developed to identify trust dimensions, trust determinants, trust erosion mechanisms, trust saturation pathways, and collapse outcomes. These thematic structures had emerged from participant experiences rather than being imposed by the research team.

Only after these empirical structures have been developed had the findings been organized and interpreted using the SEA framework. In this study, the SEA model functions not as a data extraction tool but as an organizing architecture through which trust-related findings can be systematically interpreted. Stability will represent dimensions of trust associated with legitimacy, cohesion, predictability, and continuity. Efficiency will represent trust dimensions associated with coordination, communication, operational flow, and reduction of systemic friction. Adaptability will represent trust dimensions associated with learning, innovation, reform acceptance, and responsiveness during crises.

The study further assumes that structural pressures generate specific trust deterioration mechanisms that eventually contribute to trust saturation and system dysfunction. Examples include prolonged waiting times reducing confidence in service responsiveness, dissatisfaction among healthcare workers weakening professional trust, misinformation and poor media literacy influencing informational trust, and inconsistent policy communication reducing institutional trust. Such mechanisms are expected to emerge directly from interview findings and may later be translated into measurable indicators.

Following thematic analysis and SEA interpretation, findings had transformed into measurable outputs including Key Performance Indicators, Trust Vulnerability Indicators, Early Warning Signals, and ultimately a Trust Saturation Risk Index. These indicators are expected to provide a practical mechanism for monitoring trust-related vulnerabilities and identifying early signals of potential health system deterioration.

The overall logic of this study assumes that broader structural pressures influence trust determinants, which subsequently generate trust erosion mechanisms. Progressive trust deterioration may then evolve into trust saturation, resulting in system dysfunction and potentially leading to health system collapse. Therefore, this study conceptualizes trust not merely as an outcome of health system performance but as an active systemic mechanism through which broader structural pressures are translated into operational instability and collapse vulnerability.

4. Results

Thematic analysis of the twenty interviews identified several interconnected themes related to trust within health systems. Participants consistently described trust not as a single construct, but as a multidimensional and dynamic process operating across multiple levels of the health system. Findings suggested that trust develops progressively, beginning at the individual level and expanding through interpersonal, professional, organizational, informational, and societal levels. Participants frequently described trust as an invisible infrastructure underlying system performance, arguing that deterioration of

this infrastructure gradually weakens system functioning and increases vulnerability to broader dysfunction and collapse.

Participants generally indicated that trust does not suddenly disappear. Instead, trust was described as progressively deteriorating through interactions among structural pressures, service experiences, communication environments, and organizational conditions. Multiple participants emphasized that the effects of trust deterioration become visible only after a prolonged period of accumulated strain.

The first major theme emerging from the interviews concerned the dimensions through which trust operates within health systems. Participants repeatedly described trust as beginning at the individual level before extending into broader relationships and institutions.

Several participants explained that individuals initially evaluate healthcare systems through their own experiences, beliefs, perceptions of risk, and personal judgments. These individual perceptions subsequently shape interpersonal relationships and influence broader attitudes toward healthcare organizations and health authorities. One participant explained:

“Trust begins with personal confidence. If individuals do not trust their own experiences or understanding, they begin questioning everything else in the system.”

That participant referred to individuals living with chronic conditions who repeatedly experienced delays in diagnosis or perceived inconsistencies in care recommendations. According to the participant, individuals gradually began questioning their own judgments regarding symptoms and treatment decisions. Over time, uncertainty regarding personal experiences extended beyond individual concerns and resulted in broader skepticism toward healthcare providers and the health system itself.

Another participant stated:

“People first decide whether they believe something personally; then they decide whether they trust healthcare workers, organizations, or governments.”

That participant referred to the COVID-19 pandemic and explained that many individuals initially evaluated information according to personal beliefs and prior experiences before considering recommendations from healthcare institutions. According to the participant, individuals who personally believed that the disease represented a limited threat were more likely to question public health recommendations and subsequently become skeptical toward healthcare workers, institutions, and governmental advice.

Participants further suggested that trust then expands into interpersonal relationships among providers, patients, managers, and healthcare teams. Professional relationships based on competence and ethical behavior were also repeatedly identified as important. Organizational and institutional factors were often discussed together, with participants rarely distinguishing trust in organizations from trust in broader health institutions. One participant noted:

“Healthcare workers often do not separate trust in hospitals from trust in the health ministry because both become part of the same experience.”

Participants additionally described informational trust as increasingly important in modern health systems, particularly because information sources compete with social media, informal networks, and alternative channels. Trust at broader societal levels was reflected through public confidence, social legitimacy, and willingness to comply with recommendations. Participants also described adaptive trust as emerging during periods of crisis, reform, and uncertainty. Table no 3 shows Dimensions of Trust Emerging from Interviews.

Table 3. Dimensions of Trust Emerging from Interviews

Major Theme	Subthemes
Individual Trust	Personal confidence; perceived risk; personal health beliefs
Interpersonal Trust	Provider–provider trust; provider–patient trust; manager–staff trust
Professional Trust	Competence; ethical behavior; collaboration
Organizational–Institutional Trust	Leadership credibility; legitimacy; transparency; accountability; policy consistency
Informational Trust	Information credibility; communication reliability; media trust
Public Trust	Community confidence; social acceptance; compliance
Adaptive Trust	Crisis trust; reform acceptance; innovation trust

The second major issue concerned structural determinants influencing trust formation and maintenance. Participants repeatedly identified governance factors, workforce conditions, service characteristics, information environments, financial conditions, and broader societal influences as important contributors. Governance-related concerns frequently included transparency, accountability, and consistency of policies. Participants described situations where changing policies and contradictory Information created uncertainty and weakened trust in health institutions. Workforce conditions were also frequently discussed. Participants reported that burnout, dissatisfaction, and professional conflict influenced trust among healthcare professionals and subsequently affected patient experiences. Service delivery factors repeatedly emerged as important influences on trust. Participants often associated responsiveness and waiting times with confidence in the health system. One participant stated:

“Long waiting times increasingly reduce confidence in the healthcare system. Twenty years ago, people came to [Country³] because services were accessible and affordable, but now many seek healthcare elsewhere because they are uncertain about receiving timely care.”

Most of Participants noted that dissatisfaction among healthcare workers and dissatisfaction among patients often reinforced each other and gradually spread throughout the system. Table 4 shows Structural Determinants Influencing Trust

Table 4. Structural Determinants Influencing Trust

Domain	Factors Identified
Governance	Transparency; accountability; policy consistency
Workforce	Burnout; collaboration; professional conflict; staff satisfaction
Service delivery	Waiting times; responsiveness; quality of care
Information systems	Communication quality; information credibility
Financial factors	Affordability ,Out-of-pocket burden, financial transparency, Perceived unnecessary services, Induced demand ,Financial fairness
Public legitimacy	Public confidence; social engagement

The third major theme concerned mechanisms through which trust gradually deteriorates. Participants repeatedly emphasized that trust erosion rarely results from a single event. Rather, participants described trust deterioration as an accumulation of multiple experiences occurring over time. Service-related factors emerged as important early warning signals. Participants repeatedly associated long waiting times with reduced confidence in system responsiveness and increasing frustration among patients and providers. One participant explained that perceived unnecessary services can gradually move beyond dissatisfaction with individual providers and become broader distrust toward the healthcare system itself.

³ To preserve confidentiality and improve transferability of findings, identifying contextual details within quotations (e.g., countries, institutions, locations, or specific organizational identifiers) were anonymized where necessary without altering the meaning of participant narratives.

Informational factors emerged as particularly important during discussions surrounding public health crises and COVID-19. One participant explained:

“Low media literacy can move people in many directions. Sometimes misinformation creates unnecessary demand for services, and sometimes it creates resistance toward healthcare recommendations.”

Another participant stated:

“During COVID, many people trusted social media narratives more than healthcare institutions.”

Participants also discussed vaccine hesitancy and resistance as examples of deteriorating informational trust. One participant explained:

“Resistance to vaccination was not simply resistance toward vaccines; it reflected broader distrust toward institutions and information sources.”

Participants indicated that informational distrust often influenced health-related behaviors, treatment decisions, and willingness to follow public health recommendations. Table 5. shows Trust Erosion Mechanisms and Early Warning Signals

Table 5. Trust Erosion Mechanisms and Early Warning Signals

Domain	Indicators
Service	Long waiting times; dissatisfaction; delayed access
Workforce	Burnout; professional conflict; staff dissatisfaction
Information	Misinformation; contradictory messaging; low media literacy; vaccine resistance
Governance	Reduced transparency; inconsistent decisions
Financial	Out-of-pocket, financial transparency, Perceived unnecessary services,
Public	Reduced confidence; healthcare-seeking outside the system

The fourth major theme involved progression from trust deterioration toward broader system dysfunction. Participants described a stage where declining trust moved beyond isolated concerns and became more widespread throughout the health system. Participants frequently noted that individuals do not immediately abandon healthcare systems. Instead, trust gradually weakens and eventually changes behaviors, relationships, and patterns of service use. One participant stated:

“People do not suddenly stop using healthcare systems. They gradually disengage and begin searching for alternatives.”

Participants described this phase as being characterized by reduced compliance, increased resistance, reduced collaboration, growing operational friction, and fragmentation across organizational levels. Table 6. Shows Manifestations and levels Of Trust Crisis.

Table 6. Manifestations of Trust Crisis

Level	Manifestation
Individual	Reduced compliance; behavioral disengagement
Workforce	Professional conflict; disengagement
Organization	Coordination failures
Public	Reduced service utilization; external care-seeking
Institution	Legitimacy crisis

The final major theme concerned pathways linking trust deterioration to broader health system collapse. Participants generally viewed collapse as a gradual and cumulative process rather than a sudden event. Findings suggested that weakening trust progressively reduced legitimacy, increased operational inefficiencies, weakened adaptability, and amplified vulnerability across all levels of the system. Following

organization of themes through the SEA model, trust-related vulnerabilities appeared to influence Stability, Efficiency, and Adaptability simultaneously. Table 7. Shows Trust Findings Organized by the SEA Model.

Table 7. Trust Findings Organized by the SEA Model

SEA Dimension	Main Findings
Stability	Declining legitimacy; reduced confidence; social fragmentation
Efficiency	Delays; duplication; coordination failures; operational friction
Adaptability	Resistance to change; reduced crisis responsiveness; weakened learning capacity

Overall, findings suggest that trust deterioration functions as an operational pathway through which broader structural pressures become translated into system dysfunction and ultimately increase the risk of health system collapse.

Early Warning Indicators and Risk Thresholds

The findings of the interviews illustrated that trust deterioration becomes observable before severe system dysfunction emerges. Participants repeatedly indicated that declining trust often manifests initially through measurable behavioral, organizational, service-related, and informational changes. Consequently, the qualitative findings were translated into a preliminary set of measurable indicators capable of functioning as early warning signals for increasing trust vulnerability and health system collapse risk. The development of indicators followed a multistep process. Initially, trust-related themes and subthemes extracted from participant narratives were transformed into observable indicators. These indicators were then organized according to the SEA framework and converted into measurable variables capable of supporting future monitoring systems. Participants consistently noted that no single indicator alone is sufficient for identifying collapse risk. Rather, combinations of changes across multiple domains were viewed as more informative than isolated measures. Therefore, the proposed framework assumes that trust-related risks emerge progressively across several domains simultaneously.

Because this study represents an initial exploratory framework, preliminary risk thresholds were developed to facilitate future operationalization. Four risk levels were defined ranging from stable conditions to severe vulnerability approaching system collapse. Risk categories include:

- **Safe:** stable conditions with minimal evidence of trust deterioration
- **Early Vulnerability:** initial warning signals requiring observation
- **High Risk:** significant deterioration affecting system functioning
- **Near Collapse:** severe dysfunction suggesting substantial system vulnerability

Table 8. Proposed Early Warning Indicators for Trust Vulnerability and Collapse Risk

Indicator	Measurement	Safe	Early Vulnerability	High Risk	Near Collapse
Public trust in health system	Population survey (%)	>80%	60–80%	40–59%	<40%
Patient satisfaction	Satisfaction score (%)	>85%	70–85%	50–69%	<50%
Responsiveness	Responsiveness Score (%)	>85%	70–85%	50–69%	<50%
Healthcare worker satisfaction	Satisfaction score (%)	>80%	60–80%	40–59%	<40%
Average waiting time	According to variety of services and priorities and will explain in table no ..				
Burnout prevalence	% workforce with burnout symptoms	<20%	20–35%	36–50%	>50%
Quality of Services	According to variety of Dimensions of QoS will explain in table no ..				
Professional conflict rate	% reported conflicts/year	<10%	10–20%	21–35%	>35%
Trust in health information	Population survey (%)	>80%	60–80%	40–59%	<40%
Media literacy vulnerability	Population risk score (%)	<20%	20–40%	41–60%	>60%
Vaccine confidence	Population confidence (%)	>85%	70–85%	50–69%	<50%
Compliance with health recommendations	Adherence rate (%)	>85%	70–84%	50–69%	<50%
External healthcare-seeking behavior	%seeking care outside system	<5%	5–10%	11–20%	>20%

Organizational trust	Staff survey (%)	>80%	60–80%	40–59%	<40%
Institutional legitimacy	Confidence survey (%)	>80%	60–80%	40–59%	<40%
Crisis response confidence	Survey score (%)	>80%	60–80%	40–59%	<40%
Innovation/reform acceptance	Adoption rate (%)	>75%	50–75%	30–49%	<30%
Out-of-pocket	OOP %	<20%	20–30%	31–40%	>40%
Perceived Unnecessary Care	Perceived Unnecessary Care (%)	<10%	10–20%	21–35%	>35%
Financial Transparency Score	(FTS) %	>85%	70–84%	50–69%	<50%

Waiting time thresholds were not derived from a single universal benchmark because acceptable waiting periods differ substantially across care pathways and urgency levels. Therefore, preliminary thresholds were developed through integration of existing international performance standards (e.g., CTAS emergency targets, NHS referral-to-treatment standards, diagnostic targets, and cancer pathways) together with qualitative findings obtained from participants. Table 9. shows Proposed waiting-time risk thresholds for trust early warning.

Table 9. Proposed waiting-time risk thresholds for trust early warning

Service category	Measurement	Safe	Early vulnerability	High risk	Near collapse
Emergency: resuscitation / life-threatening	Time to physician assessment	Immediate	Any delay <5 min	5–10 min delay	>10 min delay
Emergency: high acuity	Time to physician assessment	≤15 min	16–30 min	31–60 min	>60 min
Emergency: urgent	Time to physician assessment	≤30 min	31–60 min	61–120 min	>120 min
Emergency: less urgent	Time to physician assessment	≤60 min	61–120 min	121–180 min	>180 min
Emergency: non-urgent	Time to physician assessment	≤120 min	121–180 min	181–240 min	>240 min
Primary care / outpatient visit	Time to first appointment	≤7 days	8–14 days	15–30 days	>30 days
Specialist consultation	Referral to specialist visit	≤4 weeks	5–8 weeks	9–18 weeks	>18 weeks
Diagnostic tests / paraclinical	Request to test completion	≤6 weeks	7–8 weeks	9–12 weeks	>12 weeks
Elective non-urgent treatment	Referral to treatment	≤18 weeks	19–26 weeks	27–52 weeks	>52 weeks
Priority elective surgery	Specialist decision to procedure	Within benchmark	1–25% beyond benchmark	26–50% beyond benchmark	>50% beyond benchmark
Cancer suspected diagnosis	Referral to diagnosis/ruling out	≤28 days	29–42 days	43–62 days	>62 days
Cancer treatment	Referral/decision to treatment	≤62 days from referral or ≤31 days from decision	63–90 days	91–120 days	>120 days

Several participants emphasized that waiting time should not be interpreted solely as an operational performance indicator. Rather, prolonged waiting times were described as visible and socially observable signals through which individuals evaluate the effectiveness, responsiveness, and trustworthiness of healthcare systems.

Participants suggested that public perceptions of health system performance are often shaped not by technical performance metrics but by direct personal experiences. Long delays in emergency departments, specialist consultations, diagnostic services, and treatment pathways were repeatedly described as experiences that gradually undermine confidence in the healthcare system.

One participant explained:

“Long waiting times increasingly reduce confidence in the healthcare system. People begin questioning whether the system is functioning properly. When they discuss their experiences with others and realize similar concerns are widely shared, confidence gradually declines.”

Participants further indicated that comparisons with previous periods often reinforce these perceptions. Individuals frequently evaluate current service performance against their own past experiences or collective memories of how healthcare services functioned previously. When waiting times become substantially longer than expected, participants suggested that many individuals begin interpreting delays as evidence of declining system performance.

Several participants also referred to highly publicized incidents involving delayed access to care. Participants noted that media reports describing patients who experienced severe harm or death following prolonged waits often receive significant public attention and may amplify concerns regarding system responsiveness and safety. According to participants, such events frequently extend beyond individual cases and contribute to broader perceptions that the healthcare system is no longer functioning effectively.

Importantly, participants argued that these perceptions may influence healthcare-seeking behavior. Some individuals may increasingly seek alternatives outside the existing healthcare system, including private providers, alternative care pathways, or services in other jurisdictions despite higher personal costs. Participants interpreted such behavioral changes as manifestations of declining trust rather than merely dissatisfaction with isolated services.

These findings suggest that waiting time functions not only as a service delivery indicator but also as a proxy indicator of public trust. Within the proposed framework, prolonged waiting times represent an early warning signal because they directly affect public perceptions of responsiveness, legitimacy, and system effectiveness. Consequently, deterioration in waiting-time performance may contribute to broader trust erosion processes that eventually influence health system stability, efficiency, and adaptability.

Participants repeatedly emphasized that trust deterioration was not limited to waiting times and access-related issues. Several participants described declining service quality and negative care experiences as important mechanisms contributing to trust erosion. Participants suggested that individuals frequently evaluate healthcare systems not through technical quality indicators but through their own experiences of care. Experiences such as inadequate communication, lack of continuity of care, perceived diagnostic uncertainty, disrespectful treatment, and unresolved complaints were repeatedly described as factors capable of weakening confidence in healthcare providers and healthcare institutions.

“Patients may not know whether a medical error has occurred, but they know when they feel ignored, rushed, or uncertain about their care. These experiences gradually affect trust.”

“People often judge the quality of healthcare through their personal experiences. When communication is poor or care feels fragmented, confidence in the system begins to decline.”

Table no 10 shows Proposed Early Warning Indicators for Service Quality–Related Trust Erosion.

Table10. Proposed Early Warning Indicators for Service Quality–Related Trust Erosion

Indicator	Calculation	Safe	Early Vulnerability	High Risk	Near Collapse
Patient-Reported Quality of Care (%)	Positive quality ratings ÷ total respondents × 100	≥85%	70–84%	50–69%	<50%
Communication Quality (%)	Patients reporting adequate communication ÷ total respondents × 100	≥85%	70–84%	50–69%	<50%
Respectful Care (%)	Patients reporting respectful treatment ÷ total respondents × 100	≥90%	75–89%	60–74%	<60%
Diagnostic Confidence (%)	Mean confidence score ÷ 5 × 100	≥85%	70–84%	50–69%	<50%

Continuity of Care (%)	Visits with same provider/team ÷ total visits ×100	≥80%	60–79%	40–59%	<40%
Complaint Rate	Complaints per 1000 encounters	<5	5–10	11–20	>20
Complaint Resolution Rate (%)	Resolved complaints ÷ total complaints ×100	≥90%	75–89%	50–74%	<50%
Medical Error Rate	Errors per 1000 patients	<2	2–5	6–10	>10
Adverse Event Rate	Events per 1000 patients	<5	5–10	11–20	>20
Hospital Readmission Rate (%)	Readmissions within 30 days ÷ total discharges ×100	<5%	5–10%	11–15%	>15%
Delayed Diagnosis Rate (%)	Delayed diagnoses ÷ confirmed diagnoses ×100	<5%	5–10%	11–20%	>20%
Unresolved Patient Concerns (%)	Unresolved complaints/concerns ÷ total concerns ×100	<10%	10–20%	21–40%	>40%

Although service quality indicators are not direct measures of trust, participants repeatedly identified them as major antecedents of trust formation and trust erosion. Interview findings suggested that individuals often evaluate the trustworthiness of health systems through their experiences of care quality rather than through technical performance measures. Consequently, indicators such as patient-reported quality, communication quality, respectful care, diagnostic confidence, continuity of care, complaint rates, and patient safety outcomes were identified as indirect but important early warning signals of trust deterioration.

Participants noted that behavioral indicators may frequently appear before broader institutional deterioration becomes visible. Examples included increasing use of healthcare services outside the national system, reduced willingness to follow public health recommendations, and increasing reliance on alternative information sources. Interview findings also indicated that informational indicators became particularly important during crises. Participants repeatedly described misinformation, low media literacy, and declining confidence in health communication as major contributors to trust deterioration. Overall, the findings suggest that increasing risk across multiple indicators simultaneously may provide an early warning architecture capable of identifying health system vulnerability before broader dysfunction and collapse emerge. Rather than interpreting indicators individually, the framework proposes that simultaneous deterioration across Stability, Efficiency, and Adaptability domains should be interpreted as increasing risk for systemic trust crisis and eventual health system collapse.

5. Discussion

The findings of this study suggest that trust represents far more than a social attitude or public perception within health systems. Participants consistently described trust as a foundational mechanism that influences how individuals, healthcare professionals, organizations, and communities interact with healthcare institutions. Rather than emerging as an isolated construct, trust appeared to operate as an underlying infrastructure that supports system stability, efficiency, and adaptability. The findings indicate that deterioration in trust may function as a critical pathway through which structural pressures are translated into broader health system dysfunction and, ultimately, increased vulnerability to collapse.

A central finding of this study is that trust develops and deteriorates through multiple interconnected levels. Participants described trust as beginning at the individual level, where personal experiences, beliefs, and perceptions shape initial judgments about healthcare services and institutions. Individual trust subsequently extends into interpersonal relationships between patients and providers, professional relationships among healthcare workers, organizational and institutional relationships, informational environments, and broader public confidence. This progression suggests that trust should not be conceptualized as a single variable but rather as a multidimensional system phenomenon. Consequently, deterioration at one level may progressively influence trust at other levels, creating cascading effects throughout the healthcare system.

The findings further suggest that trust erosion is typically gradual rather than sudden. Participants repeatedly emphasized that trust is weakened through accumulated experiences rather than isolated events. Long waiting times, poor communication, dissatisfaction with care, professional conflict, misinformation, contradictory messaging, and perceived unfairness were all described as mechanisms capable of gradually undermining confidence in healthcare systems. These findings are consistent with broader theories of institutional trust, which argue that trust is often built slowly but can deteriorate rapidly once confidence in institutional competence and legitimacy begins to decline.

One of the most significant findings concerns the role of waiting times as indicators of trust deterioration. Although waiting times are traditionally viewed as operational performance indicators, participants consistently described them as visible social signals through which individuals evaluate the effectiveness and responsiveness of healthcare systems. The importance of waiting times extends beyond service delivery itself. Participants suggested that prolonged delays influence perceptions of competence, legitimacy, and reliability. Individuals often interpret extended waiting periods as evidence that healthcare systems are unable to meet population needs. Importantly, participants indicated that these perceptions become amplified when shared through social networks, media reports, and collective experiences. Consequently, waiting times appear to function not only as efficiency indicators but also as indicators of trust vulnerability.

The findings additionally highlight the importance of service quality as a determinant of trust. Participants rarely discussed technical quality indicators such as mortality rates or adverse events directly. Instead, they described quality through personal experiences of care. Communication quality, respectful treatment, continuity of care, confidence in diagnosis, responsiveness to concerns, and overall satisfaction emerged as important factors influencing trust. This finding suggests that individuals frequently assess healthcare quality through experiential rather than technical criteria. As a result, deterioration in patient experience may undermine trust even when traditional clinical performance indicators remain relatively stable. This observation has important implications for health system monitoring because it suggests that patient-reported measures may serve as valuable early warning indicators of trust erosion.

Another important finding relates to the informational environment. Participants repeatedly identified misinformation, contradictory communication, and low media literacy as major contributors to trust deterioration. The COVID-19 pandemic was frequently cited as an example of how informational disruptions can affect public confidence in healthcare institutions. Participants described situations in which individuals relied more heavily on informal information sources than official health communications, resulting in skepticism toward public health recommendations and preventive interventions. These findings suggest that informational trust has become an increasingly important dimension of health system resilience. In modern healthcare systems, trust is influenced not only by direct service experiences but also by the broader information ecosystem through which health-related knowledge is communicated and interpreted.

The study also identified vaccine hesitancy as an important manifestation of trust erosion. Participants suggested that resistance to vaccination frequently reflected broader distrust toward institutions and information sources rather than concerns about vaccines alone. This finding highlights the interconnected nature of trust dimensions. Distrust originating within informational or institutional domains may subsequently influence health-related behaviors, treatment decisions, and adherence to recommendations. Consequently, monitoring vaccine confidence may provide valuable insights into broader patterns of trust vulnerability within healthcare systems.

Financial and professional factors emerged as additional mechanisms influencing trust. Participants discussed situations in which perceived unnecessary services, excessive testing, or financially motivated clinical decisions contributed to declining confidence in healthcare providers. Importantly, participants did not frame these issues solely as economic concerns. Rather, perceived induced demand was interpreted as a challenge to professional integrity and ethical practice. These findings suggest that financial concerns influence trust primarily through their effects on perceptions of fairness, professionalism, and legitimacy.

The findings further demonstrate that trust deterioration may eventually evolve into a broader trust crisis. Participants described this stage as a condition in which distrust becomes widespread and begins affecting healthcare-seeking behavior, professional collaboration, organizational coordination, and public compliance. Individuals may increasingly seek healthcare services outside the established system, rely on alternative information sources, or disengage from recommended care pathways. Such behavioral changes represent important manifestations of declining confidence and may indicate progression from localized trust erosion toward systemic dysfunction.

When interpreted through the SEA framework, the findings suggest that trust influences all three dimensions of health system functioning. Within the Stability dimension, trust supports legitimacy, public confidence, and social cohesion. Declining trust weakens institutional credibility and increases social fragmentation. Within the Efficiency dimension, trust influences coordination, communication, service utilization, and operational performance. Trust deterioration contributes to delays, duplication, conflict, and inefficiencies. Within the Adaptability dimension, trust facilitates acceptance of reforms, responsiveness during crises, and the adoption of innovations. Reduced trust may therefore limit a system's capacity to adapt to emerging challenges and environmental changes.

One of the most important contributions of this study is the development of a trust-based early warning framework for health system vulnerability and collapse. The findings suggest that trust deterioration becomes visible through a range of observable indicators before severe dysfunction emerges. Public confidence, organizational trust, waiting times, patient-reported quality, communication quality, burnout, media literacy vulnerability, vaccine confidence, complaint rates, and healthcare-seeking behaviors were all identified as potential early warning signals. Collectively, these indicators may provide policymakers and health system leaders with opportunities to identify vulnerability before more severe manifestations of dysfunction occur.

The proposed framework additionally contributes to the growing literature on health system collapse by introducing trust as a measurable and monitorable domain. Existing studies frequently focus on workforce shortages, financial pressures, governance failures, or infrastructure limitations. While these factors remain important, the findings of this study suggest that trust may function as a connecting mechanism through which many of these pressures influence system performance. In this sense, trust may serve as both an outcome of system performance and a driver of future system functioning.

Several limitations should be acknowledged. First, the study is based on qualitative interviews and therefore reflects participants' perceptions and experiences rather than direct causal relationships. Second, the proposed indicators and risk thresholds should be viewed as preliminary and exploratory. Although derived from participant narratives, existing performance benchmarks, and the SEA framework, further validation is required before implementation within routine monitoring systems. Future research should employ Delphi techniques, expert consensus methods, and quantitative validation studies to refine thresholds and assess predictive performance. Third, trust is inherently context-dependent, and the relative importance of specific indicators may vary across countries, cultures, and healthcare systems.

Despite these limitations, the findings provide important insights into the relationship between trust and health system vulnerability. The study suggests that trust should be viewed not merely as a social perception but as a strategic system resource that supports the functioning of healthcare systems. Monitoring trust-related indicators may therefore provide valuable opportunities for identifying emerging vulnerabilities before they progress into broader dysfunction and collapse. Ultimately, the findings support the proposition that trust is both a determinant and an indicator of health system resilience, and that deterioration in trust may represent one of the earliest observable signals of increasing collapse risk.

6. Conclusion

This study explored the role of trust as a critical determinant of health system vulnerability and collapse through a qualitative investigation guided by the SEA framework. The findings suggest that trust should not be viewed merely as a public perception or attitudinal construct, but rather as a multidimensional system resource that influences the functioning, resilience, and sustainability of healthcare systems. Participants consistently described trust as an underlying infrastructure connecting individuals, healthcare professionals, organizations, institutions, information environments, and society. Consequently, deterioration in trust was perceived as having implications that extend far beyond interpersonal relationships and directly affect the performance of health systems.

The study identified multiple dimensions of trust, including individual, interpersonal, professional, organizational-institutional, informational, public, and adaptive trust. These dimensions were found to be highly interconnected, with changes occurring in one domain frequently influencing others. The findings indicate that trust develops through cumulative experiences and interactions and therefore deteriorates through similarly cumulative processes. Rather than emerging suddenly, trust erosion was described as a gradual progression influenced by governance challenges, workforce pressures, service delivery problems, information-related disruptions, financial concerns, and perceived inequities in access to care.

A major contribution of this study is the identification of trust erosion mechanisms that may function as pathways linking structural pressures to broader health system dysfunction. Participants

highlighted prolonged waiting times, declining service quality, communication failures, workforce burnout, misinformation, vaccine hesitancy, perceived induced demand, and dissatisfaction with care experiences as important mechanisms through which confidence in healthcare systems can weaken. These findings suggest that trust deterioration is often observable long before severe system dysfunction becomes apparent.

The study further demonstrated that trust-related vulnerabilities can be translated into measurable early warning indicators. Indicators such as public trust, organizational trust, informational trust, patient-reported quality of care, communication quality, waiting times, workforce satisfaction, burnout prevalence, complaint rates, media literacy vulnerability, vaccine confidence, and healthcare-seeking behaviors were identified as potential signals of emerging trust crises. Collectively, these indicators provide a foundation for developing monitoring systems capable of detecting trust deterioration before it evolves into broader instability.

When organized through the SEA framework, the findings revealed that trust influences all three dimensions of health system performance. Within the Stability dimension, trust supports legitimacy, confidence, and social cohesion. Within the Efficiency dimension, trust contributes to coordination, communication, service utilization, and operational effectiveness. Within the Adaptability dimension, trust facilitates learning, innovation, reform acceptance, and crisis responsiveness. The findings therefore suggest that trust is both a determinant and an outcome of health system resilience.

An important insight emerging from this study is that many indicators traditionally considered operational or managerial measures may also function as indicators of trust. For example, waiting times were repeatedly described not merely as measures of service performance but as visible social signals through which individuals judge the responsiveness, competence, and legitimacy of healthcare systems. Similarly, service quality was found to influence trust primarily through patient experiences rather than through technical clinical outcomes alone. These findings reinforce the argument that trust should be incorporated into broader health system monitoring and early warning frameworks.

The study also contributes to the literature on health system collapse by proposing a conceptual pathway linking structural pressures, trust dimensions, trust erosion mechanisms, trust crisis, system dysfunction, and collapse vulnerability. This pathway suggests that trust acts as a mediating mechanism through which governance failures, workforce shortages, declining service quality, informational disruptions, and other systemic pressures influence overall system performance. Consequently, monitoring trust-related indicators may provide opportunities for identifying vulnerabilities before they manifest as severe dysfunction or collapse.

Several limitations should be acknowledged. The study is based on qualitative interviews and therefore reflects participant experiences and perceptions rather than causal relationships. Additionally, the proposed indicators and risk thresholds should be considered preliminary and require further empirical validation. Future studies should employ Delphi techniques, expert consensus methods, psychometric testing, and quantitative analyses to refine the indicators, validate risk thresholds, and assess their predictive capacity across different health system contexts.

Despite these limitations, the study provides an important foundation for understanding trust as an early warning domain within health systems. The findings suggest that trust should be recognized as a strategic component of health system resilience and incorporated into performance monitoring, governance assessment, and collapse preparedness efforts. Ultimately, the study supports the proposition that trust is not simply a consequence of health system performance but a central factor shaping the ability of healthcare systems to remain stable, efficient, adaptable, and resilient in the face of growing internal and external pressures.

In conclusion, the pathway from trust erosion to health system collapse is neither immediate nor inevitable. However, the findings indicate that persistent deterioration in trust may represent one of the earliest and most visible signals of increasing system vulnerability. By systematically monitoring trust dimensions and trust-related early warning indicators, health systems may be better positioned to detect emerging risks, strengthen resilience, and prevent progression toward dysfunction and collapse.

Declaration of AI Assistance: We hereby declare that artificial intelligence tools (ChatGPT by OpenAI) were used solely for language editing and refinement of this article. The content, ideas, and analysis were developed by the author, while AI assistance was limited to improving clarity, grammar, and style.

References

- Aboueid, S. E., Herati, H., Nascimento, M. H. G., Ward, P. R., Brown, P., Calnan, M. W., Perlman, C., & Meyer, S. B. (2023). *How do you measure trust in social institutions and health professionals? A systematic review of the literature (2012–2021)*. *Sociology Compass*. <https://doi.org/10.1111/soc4.13101>
- AcademyHealth. (n.d.). *Measuring trust: Where are we and where do we need to go?*
- Alrasheedi, K. F., Al-Mohaithef, M., Edrees, H. H., & Chandramohan, S. (2019). The association between wait times and patient satisfaction: Findings from primary health centers in the Kingdom of Saudi Arabia. *Health Services Research and Managerial Epidemiology*, 6, 1–7. <https://doi.org/10.1177/2333392819861246>
- Anand, T. N., & Kutty, V. R. (2015). Development and testing of a scale to measure trust in the public healthcare system. *Indian Journal of Medical Ethics*, 12(3), 149–157.
- Derakhshan, Z., Larijani, B., Shamsi-Gooshki, E., & Salari, P. (2023). Presenting a comprehensive definition of unnecessary healthcare services and their drivers: A systematic review and meta-synthesis. *Medical Journal of the Islamic Republic of Iran*, 37, 106. <https://doi.org/10.47176/mjiri.37.106>
- do Nascimento, I. J. B., Pizarro, A. B., Almeida, J. M., Azzopardi-Muscat, N., Gonçalves, M. A., Björklund, M., & Novillo-Ortiz, D. (2022). Infodemics and health misinformation: A systematic review of reviews. *Bulletin of the World Health Organization*, 100(9), 544–561. <https://doi.org/10.2471/BLT.21.287654>
- Eaddy, L., Vijaykumar, S., Jin, Y., Lu, X., Sharma, S., & Raamkumar, A. S. (2025). Trust erosion framework for organisational responses to and management of global emergencies. *Journal of Contingencies and Crisis Management*.
- Garrubba, M., & Yap, G. (2019). *Trust in health professionals*. Centre for Clinical Effectiveness, Monash Health.
- Gilson, L. (Ed.). (2012). *Health policy and systems research: A methodology reader*. World Health Organization.
- Gutowski, P., Hojabri, R., & Manafi, M. (2026). Performance measurement in health systems: A SEA model reinterpretation of system capacity, saturation, and collapse. *Journal of Saturation Studies*, 1(Special Issue), 59–72.
- Hojabri, R., & Manafi, M. (2026a). An early warning framework for healthcare system collapse. *Journal of Saturation Studies*, 1(1), 20–33.
- Hojabri, R., & Manafi, M. (2026b). Health system models under pressure: A comparative assessment of saturation and collapse risks through the SEA framework. *Journal of Saturation Studies*, 1(Special Issue), 9–23.
- Hojabri, R., & Manafi, M. (2026c). Digital saturation and health system collapse: Toward resilient design of information systems in complex care environments. *Journal of Saturation Studies*, 1(3), 34–49.
- Hojabri, R., & Manafi, M. (2026d). Digital saturation assessment in healthcare systems based on SEA model. *Journal of Saturation Studies*, 1(3), 50–63.
- Hojabri, R., & Manafi, M. (2026e). When the workforce breaks: Developing a SEA-based early warning risk assessment for health systems saturation and collapse. *Journal of Saturation Studies*, 1(3), 73–85.
- International Federation of Red Cross and Red Crescent Societies. (2026). *World disasters report 2026: Truth, trust and humanitarian action in the age of harmful information*.
- Ishizumi, A., Kolis, J., Abad, N., Prybylski, D., Brookmeyer, K. A., Voegeli, C., Wardle, C., & Chiou, H. (2024). Beyond misinformation: Developing a public health prevention framework for managing information ecosystems. *The Lancet Public Health*, 9(6), e397–e406. [https://doi.org/10.1016/S2468-2667\(24\)00031-8](https://doi.org/10.1016/S2468-2667(24)00031-8)

- Kalulu, P., Fisher, A., Whitter, G., Sener, I., Doering, M., Carter, D. B., Gabel, M., Ding, J., Esposito, M., McMurtry, C. L., Sopory, P., & Huffman, M. D. (2025). Trust, trust repair, and public health: A scoping review. *Frontiers in Public Health*. <https://doi.org/10.3389/fpubh.2025.1560089>
- LoCurto, J., & Berg, G. M. (2016). Trust in healthcare settings: Scale development, methods, and preliminary determinants. *SAGE Open Medicine*, 4, 2050312116664224. <https://doi.org/10.1177/2050312116664224>
- Manafi, M. (2026). The Theory of Saturation, Collapse Model, and Rosetta Stone Model: A Unified yet Modular Meta-Framework. *Journal of Saturation Studies*, 1(1), 10-19.
- Manafi, M. (2025). Orientation note: Saturation, collapse, and the Rosetta Stone Model. Manafi Institute for Saturation Studies. <https://manafi-institute.de/Resources>.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709–734.
- McKee, M., van Schalkwyk, M. C. I., & Greenley, R. (2024a). Meeting the challenges of the 21st century: The fundamental importance of trust for transformation. *Israel Journal of Health Policy Research*, 13, 21. <https://doi.org/10.1186/s13584-024-00611-1>
- McKee, M., van Schalkwyk, M. C. I., Greenley, R., & Permanand, G. (2024b). *Trust: The foundation of health systems*. European Observatory on Health Systems and Policies.
- McKee, M., van Schalkwyk, M. C. I., Greenley, R., & Permanand, G. (2025). From transaction to transformation: Building trust in health systems; A response to recent commentaries. *International Journal of Health Policy and Management*, 14, 9188. <https://doi.org/10.34172/ijhpm.9188>
- Meyer, S. B., Brown, P., Calnan, M., Ward, P. R., Little, J., Betini, G. S., Perlman, C. M., Burns, K. E., & Filice, E. (2024). Development and validation of the Trust in Multidimensional Healthcare Systems Scale (TIMHSS). *International Journal for Equity in Health*, 23, 94. <https://doi.org/10.1186/s12939-024-02162-y>
- National Institute for Health and Care Excellence. (2021). *Patient experience in adult NHS services: Improving the experience of care for people using adult NHS services* (Clinical guideline CG138). NICE.
- NHS Improvement. (2018). *Patient experience improvement framework*.
- OECD. (2020). *Waiting times for health services: Next in line*. OECD Publishing. <https://doi.org/10.1787/242e3c8c-en>
- Platt, J. E., Jacobson, P. D., & Kardia, S. L. R. (2018). Public trust in health information sharing: A measure of system trust. *Health Services Research*, 53(2), 824–845. <https://doi.org/10.1111/1475-6773.12654>
- Platt, J., & Taylor, L. (2023a). *Measuring trust: Where are we and where do we need to go?* AcademyHealth.
- Platt J, Nong P.(2023b)An Ecosystem Approach to Earning and Sustaining Trust in Health Care Too Big to Care. *JAMA Health Forum*;4:e224882. <https://doi.org/10.1001/jamahealthforum.2022.4882>.
- Rosen, R. (2014). *Meeting need or fuelling demand? Improved access to primary care and supply-induced demand*. Nuffield Trust.
- Seyedin, H., Afshari, M., Isfahani, P., Hasanzadeh, E., Radinmanesh, M., & Bahador, R. C. (2021). The main factors of supplier-induced demand in health care: A qualitative study. *Journal of Education and Health Promotion*, 10, 49. https://doi.org/10.4103/jehp.jehp_68_20
- Souvatzi, E., Katsikidou, M., Arvaniti, A., Plakias, S., Tsiakiri, A., & Samakouri, M. (2024). Trust in healthcare, medical mistrust, and health outcomes in times of health crisis: A narrative review. *Societies*, 14(12), 269. <https://doi.org/10.3390/soc14120269>
- Suarez-Lledo, V., & Alvarez-Galvez, J. (2021). Prevalence of health misinformation on social media: Systematic review. *Journal of Medical Internet Research*, 23(1), e17187.
- van der Schee, E. (2016). *Public trust in health care: Exploring the mechanisms* [Doctoral dissertation].

Weerakoon, S. M., Henson-Garcia, M., Valerio-Shewmaker, M. A., Messiah, S. E., & Knell, G. (2022). Contributions of trustworthiness, health literacy, and self-efficacy in communicating with COVID-19 vaccine-hesitant audiences: Web-based survey study. *JMIR Formative Research*.

Whitehead, H. S., French, C. E., Caldwell, D. M., Letley, L., & Mounier-Jack, S. (2023). A systematic review of communication interventions for countering vaccine misinformation. *Vaccine*, 41(5), 1018–1034.

World Health Organization. (2007). *Everybody's business: Strengthening health systems to improve health outcomes: WHO's framework for action*.

World Health Organization & World Bank. (2020). *Global monitoring report on financial protection in health 2019*. World Health Organization.

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