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## Strategies to Reduce Diagnostic Wait Times in VHA Facilities

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# Walden University

College of Management and Human Potential

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has been found to be complete and satisfactory in all respects,  
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Strategies to Reduce Diagnostic Wait Times in VHA Facilities

by

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## Abstract

The Veterans Health Administration (VHA) is the largest integrated healthcare system in the United States, providing care to millions of veterans annually. Diagnostic service wait times affect veteran access to timely diagnoses and subsequent eligibility for disability benefits, vocational rehabilitation, and social services. The purpose of this integrative review was to identify evidence-based strategies to reduce diagnostic wait time within the VHA. The guiding review question addressed what strategies VA medical centers can use to reduce diagnostic wait times. Guided by Donabedian's structure-process-outcome framework, a comprehensive literature search initially identified 487 sources across multiple databases. Subsequently, systematic screening and application of inclusion and exclusion criteria, the John Hopkins Evidence-Based Practice Research Appraisal Tool was used to evaluate 20 articles included in this analysis. The findings revealed three primary themes and six subthemes. The primary themes included (a) addressing structural barriers affecting diagnostic access, (b) standardizing diagnostic ordering and coordination processes, and (c) improving patient navigation and prioritization of care. Key subthemes included improving referral workflows, reducing unnecessary diagnostic actions, strengthening scheduling capacity, and prioritizing veterans based on urgency. A key practical implication is that healthcare administrators can improve diagnostic access by implementing coordinated strategies to address workflow inefficiencies, optimize resource allocation, and strengthen patient navigation systems. Recommendations included expanding diagnostic capacity, standardizing workflows, and implementing risk-based prioritization systems. These findings have implications for social change, improving healthcare access, outcomes, and the well-being of veterans and their families.

## Part 1: Practice-Based Problem

### **Problem of Interest**

Prolonged wait times for diagnostic procedures within the Veterans Health Administration (VHA) represent a significant operational challenge with implications for both veteran health outcomes and healthcare system performance. Timely access to diagnostic services is essential for accurate diagnosis, initiation of treatment, and coordination of primary and specialty care services. However, delays in diagnostic testing and result reporting continue to affect veterans who rely on the VHA for healthcare services (Feyman et al., 2021; Mills et al., 2023). Evidence from patient safety reporting systems has indicated that delays frequently occur across multiple diagnostic domains, including laboratory testing, radiology imaging, and procedural diagnostics, which can postpone clinical decision-making and treatment initiation (Mills et al., 2023). Diagnostic service delays extend the interval between symptom presentation and clinical intervention, potentially worsening disease progression and reducing the effectiveness of treatment strategies. Studies examining access to care within the VHA have documented variation in wait times across facilities and regions, suggesting that structural and operational factors influence the timeliness of diagnostic services (Feyman et al., 2021; Feyman et al., 2022). When diagnostic testing is delayed, veterans could experience postponed treatment, increased healthcare utilization, and avoidable deterioration in health status. This integrative review was necessary to identify and synthesize evidence-based strategies that healthcare administrators can implement to improve the timeliness of diagnostic services within the VHA. Examining structural factors such as scheduling infrastructure, workforce capacity, and diagnostic equipment availability, as well as

process-related elements including referral coordination and interdepartmental communication, could help healthcare leaders identify operational strategies that reduce diagnostic wait times and improve care delivery.

The potential positive social change implications of this review are substantial. Veterans have earned access to timely, high-quality healthcare through their service to the nation, yet delays in diagnostic services may undermine access to effective treatment and disease management (Feyman et al., 2022). Identifying strategies to improve the timeliness of diagnostic services can help healthcare administrators implement operational improvements that enhance healthcare access for veterans. Earlier diagnostic testing and faster clinical decision-making may improve health outcomes, reduce complications associated with delayed treatment, and enhance the overall quality of life for veterans and their families.

## **Healthcare Administration Problem**

### **Background**

Veterans who rely on the VHA for healthcare services frequently experience delays in obtaining diagnostic procedures and test results, which may postpone subsequent primary and specialty care interventions. Analyses of patient safety reports within the VHA have indicated that delays in diagnostic testing often stem from laboratory processing issues, communication breakdowns between departments, and scheduling system inefficiencies (Mills et al., 2023). These delays may disrupt clinical workflows and delay treatment decisions across multiple areas of care.

Concerns regarding healthcare access within the VHA have been widely documented. Previous investigations identified significant scheduling and access

challenges that contributed to extended wait times for specialty care services, prompting federal oversight and policy reforms to improve veterans' healthcare access (VHA, 2023). Despite these reforms, recent research continues to demonstrate variation in wait times across VHA facilities, suggesting that structural and operational barriers persist within the system (Feyman et al., 2021; Feyman et al., 2022).

Studies comparing healthcare access across regions indicated that veterans in some geographic areas experience substantially longer wait times for specialty care and diagnostic services than veterans in other regions. These disparities suggest that uneven resource distribution, workforce capacity limitations, and differences in scheduling infrastructure may influence access to diagnostic services across the VHA system (Feyman et al., 2021).

### **Operational Problem**

Veterans seeking diagnostic services within the VHA may encounter wait times exceeding those observed in other healthcare delivery settings. Operational inefficiencies within referral workflows, communication systems, and diagnostic scheduling processes have been identified as contributing factors to these delays. Research examining healthcare access among veterans indicated that fragmented communication between providers, complex referral processes, and inconsistent follow-up procedures could delay diagnostic testing and subsequent treatment initiation (Nevedal et al., 2023; Stryczek et al., 2023).

Geographic disparities further complicate access to diagnostic services. Analyses of VHA administrative data have revealed substantial variation in appointment wait times across facilities, indicating that differences in diagnostic capacity and operational

management may influence healthcare access (Feyman et al., 2021). Feyman et al. (2022) demonstrated that veterans in certain regions experienced mean wait times of up to 60 days for specialty appointments, which was more than twice the delay reported in other areas, highlighting uneven resource distribution and localized process failures. These structural and operational challenges contribute to delays in disease detection and treatment initiation, potentially affecting the quality and effectiveness of healthcare delivery for veterans.

### **Ideal State of Operations**

An effective diagnostic service delivery system would ensure that patients receive ordered diagnostic tests and procedures within 30 days, mirroring the practices of top-performing healthcare organizations (Stryczek et al., 2023). High-performing healthcare organizations implement coordinated scheduling systems, standardized referral protocols, and care coordination mechanisms that facilitate timely access to diagnostic services. For example, centralized scheduling platforms and electronic health record (EHR) alerts may help healthcare providers track pending diagnostic orders and coordinate appointments more efficiently (Mills et al., 2023).

In addition, care coordination teams can monitor diagnostic referrals, ensure appropriate follow-up on pending test results, and facilitate communication between primary care providers, specialty services, and diagnostic departments. Following the VA MISSION Act, average wait times for diagnostic procedures at VA facilities climbed to 61 days, which was an increase of 35.7 days, and that 41.7% of diagnostic delays stemmed directly from procedural scheduling issues (Politi et al., 2022). Performance monitoring systems that track diagnostic wait times and appointment completion rates

may also help healthcare administrators identify operational bottlenecks and implement targeted improvement strategies (Bolton et al., 2024; Politi et al., 2022). Implementing these operational improvements may reduce delays by 30 days between diagnostic ordering and test completion, improve coordination among healthcare teams, and enhance patient satisfaction with healthcare services.

### **Professional Practice Gap Statement**

VA healthcare facilities typically require an average of 61 days for diagnostic procedures, primarily due to scheduling, coordination, and communication challenges (Feyman et al., 2022; Friedl et al., 2023). Presently, diagnostic service delays persist as a significant challenge within the VHA. Research examining healthcare access among veterans has indicated that operational barriers, such as scheduling inefficiencies, communication breakdowns, and difficulties with referral coordination, contribute to extended diagnostic wait times (Feyman et al., 2021; Mills et al., 2023; Nevedal et al., 2023). Conversely, an optimal operational state would guarantee that diagnostic procedures are scheduled and completed within clinically acceptable timeframes of 30 days from ordering, through standardized scheduling protocols, coordinated referral management, and enhanced communication systems across healthcare departments (Politi et al., 2022).

### **Summary of Evidence**

The 2014 VHA scheduling scandal revealed systemic manipulation of access metrics that masked delays in specialty care, triggering congressional action through the Veterans Access, Choice, and Accountability Act (U.S. Government Accountability Office, 2025; VHA, 2023). Recent data indicated persistent operational shortcomings:

veterans waited an average of 41.1 days for specialty referrals within the VHA, compared to just 6.4 days under community care (Feyman et al., 2022), highlighting ongoing scheduling and coordination failures. Patient safety reports also documented widespread postponements across laboratory, radiology, and procedural services (Mills et al., 2023), and follow-up analyses showed that average diagnostic wait times increased by up to 61 days, far exceeding the 26-day civilian average (Politi et al., 2022). Veterans who rely on the VHA for diagnostic procedures and tests routinely face extended wait times that exceed benchmarks in community care and civilian healthcare systems. Delays prolong the interval between symptom onset and clinical intervention, worsening acute and chronic conditions, increasing emergency department utilization, and compromising overall health outcomes.

Empirical investigations point to specific bottlenecks in referral workflows, breakdowns in interdepartmental communication, and inadequate care coordination as the root causes of these diagnostic backlogs. In a surgical consult comparison, the VHA had a 30.0-day VHA wait versus 23.1 days for community care, attributing the gap to procedural scheduling constraints (Friedl et al., 2023). Incomplete follow-up of test results and a lack of communication between departments are also major contributors to diagnostic actions being lost or delayed (Feyman et al., 2021; Feyman et al., 2022).

To realign VHA performance with leading healthcare standards, an ideal diagnostic services operation would guarantee completion of all ordered tests and procedures within 30 days of the clinician's request. This would be achieved through unified electronic scheduling platforms that automatically flag and book pending orders, dedicated care coordination teams overseeing referrals and follow-up, and real-time

performance dashboards tracking wait-time metrics (Mills et al., 2023; Nevedal et al., 2023). Studies analyzing healthcare access data indicate that appointment wait times vary across facilities and geographic regions, reflecting differences in resource availability and operational management practices (Feyman et al., 2021; Feyman et al., 2022). Additional research has suggested that communication breakdowns, inefficient referral workflows, and incomplete follow-up procedures could delay diagnostic testing and treatment initiation (Mills et al., 2023; Nevedal et al., 2023).

These findings indicated that improving access to diagnostic services required coordinated operational strategies that address both structural capacity and healthcare delivery processes. Strengthening referral coordination, improving communication between healthcare departments, and implementing standardized scheduling protocols could reduce diagnostic delays and improve the timeliness of healthcare services provided to veterans (Politi et al., 2022).

### **Purpose of the Integrative Review**

The purpose of this integrative literature review was to identify evidence-based strategies that healthcare administrators can implement to reduce wait times for diagnostic procedures and tests that contribute to downstream delays in primary and specialty care treatment for veterans. This review examined research identifying operational barriers associated with diagnostic delays, including referral workflow inefficiencies, communication breakdowns, and capacity limitations. The effectiveness of technological innovations, operational improvements, and care coordination strategies is evaluated to determine which approaches may improve the timeliness of diagnostic services within the VHA. The objective of this integrative review was to synthesize

empirical evidence and provide actionable recommendations for healthcare administrators and policymakers to enhance access to diagnostic services and improve healthcare delivery for veterans.

### **Integrative Review Question**

What strategies can VA medical centers implement to reduce wait times for diagnostic procedures and tests that lead to subsequent downstream delays in primary and specialty care treatment necessary for managing acute and chronic disease?

This integrative review question addressed the key elements of the healthcare administrative problem by focusing specifically on actionable strategies that VA leadership could deploy to overcome the systemic barriers identified in the evidence. The problem encompassed three interrelated elements: (a) prolonged wait times averaging 61 days for diagnostic procedures within the VHA, (b) inefficient referral workflows and inadequate interdepartmental coordination that contribute to scheduling backlogs, and (c) the resulting delays in downstream care that worsen health outcomes for veterans with both acute conditions requiring urgent intervention and chronic diseases requiring ongoing management.

The review question directly addressed potential solutions by seeking evidence on specific strategies that have demonstrated effectiveness in reducing diagnostic delays within large healthcare systems, such as unified electronic scheduling systems, dedicated care coordination teams, standardized referral protocols, real-time performance-monitoring dashboards, and enhanced communication mechanisms. Synthesizing empirical findings on these interventions, the review identified which approaches have successfully shortened wait times, improved follow-up rates on pending test orders, and

enhanced coordination between primary care providers, specialty services, and diagnostic departments. The question's focused on strategies to reduce diagnostic wait times and prevent downstream treatment delays ensured that findings will be immediately applicable to VA healthcare administrators seeking to implement operational improvements that enhance timely disease detection, expedite treatment initiation, and ultimately improve clinical outcomes and quality of life for the veteran population.

### **Theoretical Framework**

The theoretical framework was guided by Donabedian's theory. Donabedian's (1988) framework assessing healthcare quality delineates three interrelated domains that collectively influence care delivery: structure, process, and outcomes. The structural domain encompasses the physical and organizational attributes of a healthcare setting, including staffing levels, availability of diagnostic equipment, and scheduling and follow-up information systems (Pounds et al., 2022). The process domain covers the activities and interactions involved in patient care, including referral workflows, test ordering procedures, interdepartmental communication pathways, and mechanisms for tracking pending diagnostic orders (Politi et al., 2022). The outcomes domain encompasses the results of care, including clinical indicators such as diagnostic turnaround times and complication rates, as well as patient-reported measures such as access satisfaction and perceived responsiveness (Jones et al., 2024; Politi et al., 2022). Applying this framework to diagnostic services, it is possible to examine the relationships among structural factors, process elements, and delays in diagnostic procedures and treatment timelines (Jones et al., 2024; Politi et al., 2022).

Empirical literature has corroborated the alignment between Donabedian's framework and the practice-based problem. Structural deficiencies in scheduling systems and inadequate diagnostic capacity contribute to prolonged wait times. For instance, 41.7% of diagnostic delays at VA facilities were attributed to procedural scheduling issues, primarily due to nonstandardized ordering protocols and siloed department workflows (Politi et al., 2022). Process breakdowns further exacerbate these limitations: incomplete follow-up on test results and a lack of interdepartmental communication result in diagnostic actions being lost or delayed (Jones et al., 2024). Geographic variation further highlights structural disparities, with mean wait times reaching 60 days in certain regions compared to shorter waits elsewhere. This disparity reflects the uneven distribution of diagnostic resources and staffing (Feyman et al., 2022; Pounds et al., 2022).

## Part 2: Literature Review, Quality Appraisal, and Analysis

### Literature Search Strategy

A comprehensive search was conducted across 16 databases and search engines to identify peer-reviewed empirical studies, systematic reviews, and grey literature addressing diagnostic wait times and access improvement strategies within the VHA. The search strategy employed Boolean operators (AND, OR, NOT), truncation symbols (\*), and phrase searching to capture relevant literature published primarily between 2018 and 2025, with exceptions made for foundational or seminal works. Key search terms used to conduct the search included *Veterans Health Administration, Veterans Affairs, VA healthcare, diagnostic procedures, diagnostic imaging, diagnostic scheduling, wait times, access delays, appointment delays, backlogs, referral inefficiencies, scheduling systems, care coordination, workflow redesign, EHR alerts, electronic health record integration, process improvement, quality improvement, system reform, missed follow-up, communication breakdowns, and healthcare redesign.*

Boolean operators and advanced techniques were applied systematically. The AND operator combined core concepts (e.g., "Veterans Health Administration" AND "diagnostic delays" AND "process improvement"), while OR expanded searches to include synonyms (e.g., "wait times" OR "access delays" OR "appointment delays"). Truncation ( ) *captured word variations (e.g., coordinat retrieved coordination, coordinator, coordinating)*. Phrase searching using quotation marks ensured precision (e.g., "care coordination" rather than unrelated results containing both words separately). The NOT operator excluded irrelevant populations or topics (e.g., NOT pediatric, NOT wellness visits).

Databases accessed included PubMed (52 results), CINAHL (38 results), ProQuest Health (29 results), Scopus (20 results), JSTOR (14 results), Google Scholar (81 results), Embase (45 results), Web of Science (34 results), Medline (41 results), PsycINFO (27 results), VA GRECC Library (18 results), TRIP Database (30 results), Cochrane Library (9 results), Health Systems Evidence (22 results), OpenGrey (11 results), and ClinicalTrials.gov (16 results). Search results were systematically screened using predetermined inclusion and exclusion criteria, with full details documented in the DHA Search Log (Appendix B). The total number of articles used was 20 in the integrated review. Table 1 shows the inclusion and exclusion search criteria.

**Table 1**

*Inclusion and Exclusion Search Criteria*

Inclusion search criteria	Exclusion search criteria
<ul style="list-style-type: none"> <li>• Veterans' Health Administration</li> <li>• Diagnostic procedures or imaging</li> <li>• Wait times, delays, backlogs</li> <li>• Scheduling systems</li> <li>• Care coordination</li> <li>• Health system redesigns</li> <li>• Interventions, process improvements</li> <li>• Peer-reviewed studies 2018- 2025 in the English language</li> </ul>	<ul style="list-style-type: none"> <li>• Pediatric or civilian populations</li> <li>• Procedures unrelated to diagnostics</li> <li>• Studies with no reference to access, wait time, or delays</li> <li>• Nonsystemic interventions</li> <li>• Studies outside the VA</li> <li>• Opinion pieces or editorials</li> <li>• Nonpeer-reviewed content</li> </ul>

A total of 214 articles were relevant for review. Hand searching and forward- and backward-searching of reference lists then identified a further eight articles. A total of 30 articles were removed due to duplication. Afterward, 192 articles were screened based on titles and abstracts using the inclusion and exclusion criteria. A total of 159 articles were screened out, leaving 33 articles for further analysis. Full-text reviews then led to the exclusion of an additional 12 articles due to insufficient focus on organizational factors, reliance on a review or secondary source, failure to focus on veterans' wait times for diagnostic procedures, and small sample sizes. The remaining 20 articles were included in this integrative review after their quality was evaluated using the John Hopkins Evidence-Based Practice Research Appraisal Tool. See Appendix B: Review Question(s) Search Log for more search results information.

### **Quality Appraisal**

The search strategy across 16 databases identified literature published primarily between 2018 and 2025, with selective inclusion of foundational sources when their theoretical or policy significance warranted consideration. The literature encompasses quantitative retrospective studies, qualitative implementation analyses, policy directives, and government oversight reports.

### **Scope and Characteristics of Included Literature**

The final sample included 20 sources examining diagnostic delays, access barriers, scheduling processes, referral coordination, staffing constraints, patient navigation, and policy-driven efforts to improve veterans' healthcare access. Donabedian's (1988) structure-process-outcome framework guided the organization and interpretation of findings, although it was not included as an empirical study. The

majority were published between 2021 and 2025, capturing the operational landscape during and following the COVID-19 pandemic as well as post-VA MISSION Act implementation (Mills et al., 2023; Politi et al., 2022). The literature addressed multiple VHA contexts, including diagnostic laboratory services, radiology, specialty referrals, surgical consults, emergency care, chronic pain care, mental health treatment initiation, outreach and enrollment barriers, and veterans' lived experiences navigating VA and community-based services.

The evidence base encompassed including retrospective analyses, cohort studies, and qualitative investigations. The majority consisted of Level III (17 sources) and qualitative studies, along with Level V (3 sources) descriptive data sources. Several studies employed extensive administrative, observational, or retrospective datasets to evaluate wait times and patterns of healthcare access. Feyman et al. (2021) contributed a substantial descriptive dataset of appointment wait times across both VA and community settings. In contrast, Feyman et al. (2022) further investigated regional and demographic variations in outpatient access. Geographic disparities were evident, with Feyman et al. (2022) demonstrating mean wait times exceeding 60 days in certain regions. Politi et al. (2022) reported that 41.7% of diagnostic delays occurred in outpatient settings.

Govier et al. (2023) evaluated changes associated with the implementation of the Community Care Network, and Friedl et al. (2023) compared surgical consult wait times between VA and community care. Jones et al. (2024) examined diagnostic discordance and uncertainty in pneumonia care across 115 VA hospitals, while Koenig et al. (2023) showed that inappropriate MRI utilization can consume diagnostic capacity and contribute to delays. Mills et al. (2023) and Politi et al. (2022) provided particularly

important patient safety evidence by identifying organizational causes and consequences of delays in diagnosis, treatment, and care transitions. Pounds et al. (2022) further demonstrated that staffing shortages can directly reduce diagnostic testing output and limit service capacity within VA settings.

Qualitative and mixed qualitative studies broadened the understanding of the problem by capturing the perspectives of veterans and staff. Moldestad et al. (2021) described scheduling pressures and competing operational demands among VA staff. Kintzle et al. (2024), Nevedal et al. (2023), Rossi et al. (2024), and Scorsone and Frank (2024) highlighted care navigation challenges, communication barriers, rural access issues, and administrative burdens that influence healthcare access. Bolton et al. (2024) documented coordination failures in lung cancer screening pathways, and Stryczek et al. (2023) examined outreach-related barriers that affect entry into care. Lee et al. (2024) added an important health equity perspective by showing that veterans' experiences of delays and access burdens differed across race and sex. Panaite et al. (2024) extended the access literature by identifying factors associated with delayed treatment initiation after diagnosis and illustrating how timeliness problems may persist even after veterans enter the care system.

Policy and oversight sources complemented these empirical studies by identifying system-level expectations and accountability gaps. VHA Directive 1234 (2023) formalized radiology scheduling expectations and urgency benchmarks, while the U.S. Government Accountability Office (2025) emphasized persistent deficiencies in timeliness monitoring and access oversight. Taken together, the 20 sources indicated that

diagnostic wait times within the VHA are influenced by interacting structural, procedural, policy, and patient-level factors that extend across the continuum of care.

### **Thematic Analysis of Literature**

Themes were developed through iterative refinement of initial codes, then organized into three major themes with subthemes representing specific operational strategies, summarized in Table 2.

**Table 2***Initial Themes and Subthemes*

Themes	Subthemes
Elimination of unnecessary diagnostic tests through telehealth	Avoid redundant imaging using data-sharing
	Evidence-based guidelines for test necessity
	Standardize referral protocols
	Audit and feedback loops for ordering
	Remote lab result reviews
Decentralizing diagnostic access	Virtual consultations for test interpretation
	Tele-screening for routine diagnostics
	Digital sharing of diagnostic results
	Home-based monitoring/testing kits
Triage to prioritize veterans	Severity-based triage protocols
	Time-to-diagnosis benchmarks
	AI/algorithms for case prioritization
	Rapid-response for urgent cases
	Patient-reported symptoms in triage

The initial thematic analysis yielded three broad themes with six subthemes each, which required refinement to meet the methodological standard of two to three subthemes per theme. Elimination of unnecessary diagnostic tests through telehealth was renamed address structural barriers affecting diagnostic to emphasize structural interventions, consolidating its six subthemes into two focused strategies: reduce geographic and

staffing-related barriers; strengthen scheduling capacity and system oversight. Decentralizing diagnostic access became standardize diagnostic ordering and coordination to align with Donabedian's process construct, with subthemes reduced to improve communication and referral workflows; reduce unnecessary or delayed diagnostic actions. Triage to prioritize Veterans was reframed as improve patient navigation and prioritization, with strengthening care navigation and outreach, and prioritizing veterans based on urgency and access risk, directly mapping to outcome measurement. Table 3 lists the final themes and subthemes.

**Table 3**

*Final Themes and Subthemes From Appendix D*

Themes	Subthemes
Structure: Address structural barriers affecting diagnostic access	Reduce geographic and staffing-related barriers; Strengthen scheduling capacity and system oversight
Process: Standardize diagnostic ordering and coordination	Improve communication and referral workflows Reduce unnecessary or delayed diagnostic actions
Outcome: Improve patient navigation and prioritization	Strengthen care navigation and outreach Prioritize veterans based on urgency and access risk

### Part 3: Presentation of Results and Interpretations of Findings

The thematic analysis of literature addressing strategies to reduce diagnostic wait times within the VHA yielded three major themes, each containing two subthemes. The themes represent distinct yet interconnected strategic approaches aligned with Donabedian's structure-process-outcome framework that healthcare administrators could deploy to address excessive diagnostic wait times.

#### **Presentation of Results**

##### **Structure: Address Structural Barriers Affecting Diagnostic Access**

Theme 1 highlighted the structural barriers within healthcare systems that limit veterans' access to timely diagnostic services. Structural barriers included workforce shortages, geographic access limitations, diagnostic equipment capacity, and scheduling infrastructure constraints. These system-level factors influence how efficiently diagnostic services can be delivered across VHA facilities. Several studies documented the relationship between healthcare system capacity and diagnostic access. Feyman et al. (2021) analyzed more than 41 million consult requests and demonstrated significant variation in diagnostic wait times across VA facilities, suggesting that local infrastructure and staffing capacity influence access to care. Similarly, Friedl et al. (2023) examined surgical consultation wait times and found that access varied across specialties, indicating that diagnostic and referral capacity differ across healthcare settings. Govier et al. (2023) also observed increased wait times following implementation of the Community Care Network, highlighting how structural changes in healthcare delivery models can affect access to care.

Workforce capacity represented another structural factor influencing diagnostic access. Pounds et al. (2022) examined staffing trends in vascular laboratory services and found that understaffed diagnostic units experienced a 23.7% reduction in completed studies, contributing to delays in post-diagnostic care. These findings demonstrated that staffing shortages directly influence diagnostic throughput and system capacity. Policy oversight reports further support the importance of structural capacity. The U.S. Government Accountability Office (2025) reported persistent challenges in monitoring healthcare timeliness within the Veterans Community Care Program, emphasizing the need for improved scheduling oversight and performance monitoring across VHA facilities.

#### ***Reduce Geographic and Staffing-Related Barriers***

Geographic barriers represented a major challenge for veterans living in rural or underserved areas. Rossi et al. (2024) found that rural veterans frequently reported transportation limitations and communication gaps when seeking healthcare services. Similarly, Scorsone and Frank (2024) described how veterans receiving chronic pain treatment experienced delays when navigating community care provider networks. These studies highlighted how geographic distance and limited local resources may delay access to diagnostic evaluation.

#### ***Strengthen Scheduling Capacity and System Oversight***

Operational oversight mechanisms are necessary to ensure that diagnostic services are scheduled within appropriate timeframes. VHA Directive 1234 established standardized scheduling targets for diagnostic imaging services and required performance monitoring to support timely access to care (Department of Veterans Affairs, 2023).

Policy oversight findings from the GAO (2025) further emphasized the importance of monitoring scheduling performance and implementing system-level accountability mechanisms to reduce delays in healthcare delivery. Together, these findings suggested that expanding diagnostic capacity and strengthening operational oversight can help healthcare administrators address structural barriers that contribute to diagnostic wait times.

### **Process: Standardize Diagnostic Ordering and Coordination**

Theme 2 focused on operational processes that influence how diagnostic services are ordered, scheduled, and coordinated within healthcare systems. Process-related barriers often occur when referral workflows are inconsistent, communication between providers is fragmented, or diagnostic procedures are delayed due to inefficient coordination. Studies included in this review consistently identified operational inefficiencies as major contributors to diagnostic wait times. Several studies identified workflow inefficiencies as significant contributors to diagnostic delays. Politi et al. (2022) analyzed root cause analysis reports from VA facilities and found that delays in diagnosis, treatment, and surgery frequently resulted from communication failures and inconsistent operational procedures. Similarly, Mills et al. (2023) examined patient safety event reports and found that diagnostic delays were frequently associated with breakdowns in communication, lost laboratory specimens, and unclear procedural guidance for follow-up care.

Coordination challenges also arose when referral processes are not standardized across healthcare providers. Bolton et al. (2023) documented coordination gaps in lung cancer screening pathways across VA and non-VA healthcare settings. The study found

that inconsistent processes for initiating referrals and transferring clinical information delayed the evaluation of abnormal screening results. Moldestad et al. (2021) similarly described operational challenges related to scheduling coordination within VA facilities, noting that competing organizational priorities and performance metrics can complicate efforts to provide timely care. Additional studies demonstrated that inefficient diagnostic ordering practices may contribute to unnecessary demand on limited diagnostic resources. Koenig et al. (2023) found that approximately 36.8% of knee magnetic resonance imaging (MRI) examinations reviewed at one VA medical center were considered inappropriate based on clinical guidelines. The overutilization of diagnostic imaging can create unnecessary demand for limited diagnostic resources, contributing to longer wait times for veterans with clinically indicated testing needs.

### ***Improve Communication and Referral Workflows***

Improving coordination between healthcare providers was essential to reducing delays in diagnostic testing. Studies examining care coordination within the VHA system emphasized the importance of improving communication pathways between primary care providers, specialists, and diagnostic departments. Nevedal et al. (2024) highlighted communication challenges encountered when veterans receive care across both VA and community healthcare systems, noting that unclear coordination processes can delay follow-up care. Similarly, Scorsone and Frank (2024) reported that veterans navigating community care networks often experienced delays due to administrative complexity and fragmented communication between providers.

### ***Reduce Unnecessary or Delayed Diagnostic Actions***

Another important process improvement strategy involved reducing unnecessary diagnostic testing and ensuring that clinically indicated procedures are performed without delay. Evidence-based diagnostic ordering protocols could help healthcare providers determine when imaging or laboratory testing is appropriate, thereby preventing overutilization of limited diagnostic resources. Mills et al. (2023) and Politi et al. (2022) both demonstrated that delays frequently occur when diagnostic procedures are ordered without clear coordination mechanisms or follow-up protocols. Implementing standardized diagnostic ordering guidelines may therefore help healthcare administrators improve efficiency and reduce unnecessary demand on diagnostic services. Collectively, these findings suggested that standardizing diagnostic workflows and strengthening coordination between healthcare providers could significantly reduce operational delays that contribute to diagnostic wait times.

### **Outcome: Improve Patient Navigation and Prioritization**

Theme 3 emphasized outcome-focused strategies that improve veterans' ability to navigate healthcare services and ensure that patients with the greatest clinical need receive timely diagnostic evaluation. While structural capacity and operational processes influence diagnostic service availability, patient-level barriers may also contribute to delays in accessing care. Several studies highlighted the importance of patient navigation and outreach programs in helping veterans access healthcare services. Stryczek et al. (2023) found that limited awareness of VA healthcare benefits and services may delay veterans' entry into the healthcare system. Veterans and healthcare providers participating

in outreach evaluations reported that improved communication and education about available services could help reduce delays in care utilization.

Patient experiences navigating healthcare systems may also influence access to diagnostic services. Kintzle et al. (2024) explored how veterans choose between VA and non-VA healthcare providers and found that administrative complexity and perceived barriers within the VA system sometimes discouraged veterans from seeking care. Similarly, Lee et al. (2024) examined veterans' experiences accessing healthcare services and found that long wait times and delays in obtaining care were frequently reported concerns among study participants. Additional research emphasized the importance of prioritizing patients based on clinical urgency. Jones et al. (2024) examined diagnostic discordance and uncertainty in pneumonia diagnoses across 115 VA hospitals, demonstrating that delays in diagnostic decision-making may influence treatment outcomes. Panaite et al. (2024) also found that delays in treatment initiation among veterans diagnosed with depression were associated with differences in patient characteristics and healthcare utilization patterns.

### ***Strengthen Care Navigation and Outreach***

Patient navigation and outreach programs may help veterans understand how to access healthcare services and complete diagnostic evaluations more efficiently. Studies examining veterans' healthcare experiences consistently highlighted communication challenges and administrative complexity as barriers to timely care. Rossi et al. (2024) reported that rural veterans frequently experienced challenges related to transportation, communication, and coordination between healthcare providers. Strengthening outreach

initiatives and patient education programs may therefore improve veterans' ability to navigate healthcare systems and access diagnostic services.

### ***Prioritize Veterans Based on Urgency and Access Risk***

Prioritization systems may help healthcare administrators allocate diagnostic resources to veterans with the greatest clinical need. Policy guidance from the VHA emphasizes the importance of scheduling diagnostic services in accordance with urgency benchmarks and of monitoring performance metrics related to healthcare access (Department of Veterans Affairs, 2023). Oversight findings from the U.S. Government Accountability Office (2025) further underscored the need for improved monitoring systems that track healthcare access performance and identify facilities experiencing delays in care delivery. Prioritizing diagnostic services based on clinical urgency and patient access risk can help healthcare systems ensure that veterans with potentially serious medical conditions receive timely evaluation and treatment.

### **Interpretation of the Findings**

This section interprets the findings of the integrative literature review in relation to healthcare administration practice, existing research, and Donabedian's conceptual framework. The interpretation is organized by theme and subtheme to illustrate how each component contributes to reducing diagnostic wait times within the VHA.

### **Structure: Address Structural Barriers Affecting Diagnostic Access**

Theme 1 aligned with Donabedian's structural domain, which encompassed organizational resources, staffing, and physical infrastructure that either facilitate or hinder healthcare delivery. The findings corroborated Donabedian's (1988) assertion that the structural characteristics of healthcare systems significantly determine the efficiency

of diagnostic service delivery (as cited in Feyman et al., 2022). The literature reviewed in this study underscored that structural barriers, such as workforce shortages, limited geographic access, and inadequate diagnostic capacity, contributed substantially to delays in care. Comprehensive administrative analyses of healthcare access within the VHA revealed substantial variation in diagnostic wait times across facilities and geographic regions. Feyman et al. (2021) examined national consult datasets and documented significant variation in wait times across VA facilities, suggesting that disparities in infrastructure and local capacity influence healthcare access. Similarly, Feyman et al. (2022) reported disparities in appointment wait times across demographic groups and geographic regions, emphasizing the role of structural factors in shaping healthcare access patterns. Additional studies highlighted how constraints on diagnostic capacity impact healthcare delivery. Pounds et al. (2022) discovered that staffing shortages in a VA vascular laboratory resulted in a substantial reduction in diagnostic testing capacity, ultimately delaying veterans' access to follow-up care. Friedl et al. (2023) also documented variability in surgical consultation wait times across specialties, indicating that diagnostic and specialty service capacity differ across healthcare settings. These findings supported Donabedian's contention that structural resources directly influence system performance.

### ***Reduce Geographic and Staffing-Related Barriers***

The literature underscored geographic barriers as a substantial structural impediment to veterans' access to healthcare services. Rural veterans frequently face long travel distances and limited access to specialized diagnostic services. Rossi et al. (2024) reported that rural veterans frequently identified transportation limitations and

communication barriers as obstacles to accessing healthcare services. Similarly, Scorsone and Frank (2024) discovered that veterans navigating community care networks occasionally encountered delays when seeking providers capable of delivering specialized services. These findings indicate that healthcare administrators must address geographic disparities when developing strategies to minimize diagnostic wait times.

### ***Strengthen Scheduling Capacity and System Oversight***

Strengthening scheduling oversight mechanisms was another structural strategy to improve diagnostic accessibility. Veterans' Health Administration Directive 1234 established standardized scheduling expectations and urgency benchmarks for radiology services, encompassing routine appointments within 28 days and urgent procedures within 14 days (Department of Veterans Affairs, 2023). Nevertheless, oversight analyses revealed inconsistencies in system-level monitoring mechanisms. The U.S. Government Accountability Office (2025) reported that the VHA lacks comprehensive metrics for monitoring healthcare timeliness across all care settings. These findings underscored the significance of fortifying performance-monitoring systems and administrative oversight to guarantee the consistent implementation of scheduling policies across facilities.

Concurrently, the findings associated with Theme 1 demonstrated that addressing structural barriers, such as staffing capacity, geographic accessibility, and scheduling infrastructure, was paramount to improving diagnostic access within the VHA system.

### **Process: Standardize Diagnostic Ordering and Coordination**

Theme 2 aligned with Donabedian's process domain, which encompassed the interactions, procedures, and workflows involved in healthcare delivery. Process improvements are crucial for reducing inefficiencies that hinder diagnostic services.

Numerous studies consistently demonstrated that communication failures, inconsistent referral protocols, and inefficient diagnostic ordering practices significantly contributed to delays in care. Research examining patient safety events within the VHA underscored the role of communication failures in diagnostic delays. Mills et al. (2023) identified that delays in laboratory results frequently stemmed from communication breakdowns, misplaced specimens, and unclear procedural guidance. Similarly, Politi et al. (2022) analyzed root cause analyses from VA facilities and identified inconsistent processes and poor communication between departments as major contributors to delays in diagnosis and treatment. Coordination challenges also arose when healthcare providers lacked standardized workflows for managing referrals and diagnostic procedures. Bolton et al. (2023) examined lung cancer screening coordination and discovered that inconsistent referral tracking systems and communication gaps delayed the evaluation of abnormal findings. Moldestad et al. (2021) similarly reported that competing organizational priorities and scheduling pressures frequently complicated care coordination within VA facilities.

### ***Improve Communication and Referral Workflows***

Improving communication channels between healthcare professionals was a pivotal strategy for mitigating diagnostic delays. Research on veterans' experiences in healthcare systems underscored the importance of effective communication among primary care providers, specialists, and diagnostic departments. Nevedal et al. (2024) identified frequent coordination challenges when veterans received care across both the Veterans Affairs (VA) and community healthcare systems. Scorsone and Frank (2024) similarly reported that administrative complexity and fragmented communication

frequently hindered access to specialized care. Consequently, optimizing referral coordination systems may reduce inefficiencies contributing to diagnostic wait times.

### ***Reduce Unnecessary or Delayed Diagnostic Actions***

Reducing superfluous diagnostic testing constituted another crucial process improvement strategy. The overutilization of diagnostic imaging could engender excessive demand on constrained resources, consequently prolonging wait times for patients undergoing clinically imperative procedures. Koenig et al. (2023) identified that more than one-third of knee MRI scans examined in their study were deemed inappropriate based on clinical guidelines. These findings elucidated how evidence-based diagnostic ordering protocols could facilitate resource allocation efficiency among healthcare providers. Standardized clinical guidelines and referral protocols could mitigate unnecessary testing and ensure that diagnostic resources are prioritized for patients with the most significant clinical needs.

### **Outcome: Improve Patient Navigation and Prioritization**

Theme 3 aligned with Donabedian's outcome domain, emphasizing outcomes of healthcare delivery, including patient access to care, clinical outcomes, and healthcare system performance. The literature reviewed in this study suggested that patient navigation barriers and inadequate prioritization systems may contribute to delays in diagnostic services. Several studies have highlighted how veterans' experiences navigating healthcare systems influence access to care. Kintzle et al. (2024) found that veterans' decisions to seek care within the VA or community healthcare systems were influenced by perceived barriers such as administrative complexity and limited communication. Similarly, Lee et al. (2024) reported that veterans frequently identified

long wait times and delays in care as major concerns affecting their healthcare experiences.

### ***Strengthen Care Navigation and Outreach***

Improving patient navigation programs could significantly improve veterans' ability to access healthcare services and complete diagnostic evaluations promptly. Stryczek et al. (2023) identified that limited knowledge of available healthcare services frequently hinders veterans' entry into the VA healthcare system. Consequently, outreach initiatives that educate veterans about healthcare benefits and available services could effectively enhance their access to care. Similarly, Rossi et al. (2024) underscored the paramount role of effective communication and coordination between healthcare providers and patients in facilitating timely access to care.

### ***Prioritize Veterans Based on Urgency and Access Risk***

Prioritizing patients by clinical urgency was another crucial strategy for improving diagnostic accessibility. Research on diagnostic uncertainty and treatment delays underscored the importance of prioritization systems that allocate healthcare resources in accordance with clinical necessity. Jones et al. (2024) identified that diagnostic uncertainty and discordance in pneumonia diagnoses can impede treatment decisions across VA hospitals. Panaite et al. (2024) similarly reported delays in treatment initiation among veterans diagnosed with depression, underscoring the importance of prioritization mechanisms that guarantee timely access to care for patients with pressing healthcare requirements.

### **Thematic Integration Across Donabedian's Framework**

The findings of this review indicated that enhancing diagnostic accessibility within the VHA necessitated coordinated interventions that address structural capacity, operational processes, and patient-centered outcomes. Govier et al. (2023) reported a 35.7-day increase in wait times following the implementation of the Community Care Network. This study underscored that process barriers could impede the effective utilization of expanded structural capacity. While structural investments in staffing and infrastructure may augment diagnostic capacity, process improvements are crucial to guarantee the efficient operation of diagnostic workflows. Similarly, optimizing patient navigation and prioritization mechanisms could facilitate the efficient allocation of diagnostic resources within healthcare systems.

The evidence suggested that interventions addressing only one component of the Donabedian framework were unlikely to yield sustained improvements in healthcare access. Consequently, healthcare administrators must implement integrated strategies that simultaneously address structural barriers, workflow coordination, and patient navigation challenges (Politi et al., 2022; VHA, 2023). Adopting a coordinated approach across these domains, healthcare systems could enhance diagnostic access and ensure that veterans receive timely and equitable healthcare services.

#### Part 4: Recommendation for Professional Practice and Implications for Social Change

##### **Recommendations for Professional Practice**

The thematic analysis of literature addressing strategies to reduce diagnostic wait times within the VHA identified three major themes that directly translate into actionable recommendations for healthcare administrators. These recommendations were grounded in the empirical findings of this review and aligned with Donabedian's (1988) structure-process-outcome framework. Collectively, the recommendations addressed structural barriers, operational workflow inefficiencies, and patient-centered navigation challenges that contribute to delays in diagnostic services within the VHA system. The three recommendations are implementing clinical decision support systems to address structural barriers to diagnostic access, standardizing diagnostic ordering and coordination processes, and improving patient navigation and prioritizing care. These recommendations collectively targeted the structural, procedural, and outcome-related factors that influence diagnostic wait times and healthcare access for veterans.

##### **Recommendation 1: Address Structural Barriers Affecting Diagnostic Access**

Healthcare administrators should expand diagnostic capacity and reduce structural barriers affecting access to care. Evidence across the literature has demonstrated that geographic disparities, staffing shortages, and limited scheduling capacity contributed significantly to delays in diagnostic services (Feyman et al., 2021; Feyman et al., 2022; Pounds et al., 2022). Strengthening workforce capacity, improving resource allocation, and optimizing scheduling systems could enhance access to timely diagnostic services.

**Recommendation 2: Standardize Diagnostic Ordering and Coordination**

Healthcare administrators should standardize diagnostic workflows and coordination processes to reduce inefficiencies in care delivery. Studies have consistently identified communication breakdowns, referral inefficiencies, and inconsistent processes as major contributors to delays (Bolton et al., 2023; Moldestad et al., 2021; Politi et al., 2022). Implementing standardized referral protocols, improving interdepartmental communication, and reducing unnecessary diagnostic testing could improve workflow efficiency and reduce delays.

**Recommendation 3: Improve Patient Navigation and Prioritization**

Healthcare administrators should implement patient-centered navigation and risk-based prioritization systems to improve access and ensure timely care delivery. Evidence has demonstrated that veterans often experienced delays due to administrative complexity, poor care coordination, and a lack of prioritization based on clinical urgency (Kintzle et al., 2024; Stryczek et al., 2023). Strengthening care navigation programs and implementing prioritization strategies based on urgency and access risk could improve patient outcomes and enhance system efficiency.

**Implications for Social Change**

The findings of this integrative literature review hold significant implications for social transformation at the individual, organizational, and societal levels. Veterans are a population who have rightfully earned access to timely, high-quality healthcare through their service to the nation. However, persistent delays in diagnostic procedures within the VHA jeopardize this social obligation. These delays can result in delayed diagnoses,

limited treatment options, and an increased likelihood of preventable health complications. (Feyman et al., 2022; Mills et al., 2023)

Implementing the evidence-based strategies identified in this review, including addressing structural barriers to diagnostic access, improving diagnostic ordering and coordination processes, and strengthening patient navigation and prioritization, may help restore timely healthcare access for veterans and improve health outcomes.

At the individual level, reducing diagnostic wait times can significantly improve health outcomes and quality of life for veterans managing both acute and chronic health conditions. Prolonged delays in diagnostic testing may allow diseases to progress before appropriate treatment can commence. (Politi et al., 2022) documented that delays in diagnosis and treatment were frequently associated with procedural inefficiencies and communication failures within healthcare systems. Similarly, Mills et al. (2023) reported that delays in laboratory results and diagnostic procedures often resulted in downstream delays in treatment and patient transfers, occasionally contributing to preventable harm. Reducing diagnostic delays could therefore enhance patient safety, reduce diagnostic uncertainty, and assist veterans in maintaining their physical functioning and independence.

At the organizational level, the strategies identified in this review possess the potential to revolutionize the management of diagnostic services and healthcare access within the VHA. As the largest integrated healthcare system in the United States, the VHA serves millions of veterans annually. Improving structural capacity, standardizing diagnostic workflows, and fortifying patient navigation systems could help healthcare

administrators effectively mitigate scheduling backlogs and optimize operational efficiency across healthcare facilities.

Empirical studies conducted within the VHA have revealed that communication breakdowns, inconsistent referral processes, and limited diagnostic capacity significantly contribute to delays in care delivery. These findings aligned with research conducted by (Bolton et al. 2023; Moldestad et al. 2021; Politi et al. 2022). Implementing standardized coordination systems and strengthening operational oversight mechanisms empowers healthcare administrators to enhance scheduling efficiency and facilitate more effective healthcare delivery.

At the societal level, improving diagnostic access within the VHA could contribute to broader advancements in healthcare equity and accessibility. Geographic disparities and healthcare access disparities persistently impact veterans residing in rural or underserved communities. Rossi et al. (2024) identified that rural veterans frequently encountered challenges related to transportation, communication barriers, and limited access to specialized healthcare providers. Similarly, Lee et al. (2024) documented disparities in healthcare experiences among veterans attributable to demographic factors such as race and gender. Strategies that address structural barriers to diagnostic access, such as optimizing service distribution, strengthening referral coordination, and expanding community care partnerships, could effectively reduce healthcare disparities affecting vulnerable veteran populations.

The findings of this review could also inform healthcare policy and administrative decision-making beyond the VHA system. Many healthcare organizations encounter similar challenges related to diagnostic delays, workforce shortages, and coordination

obstacles. Strategies designed to enhance diagnostic accessibility within the VHA, such as strengthening scheduling oversight, standardizing diagnostic ordering protocols, and improving patient navigation systems, could therefore serve as models for other large healthcare systems seeking to improve access to care and operational efficiency.

Furthermore, improving diagnostic access within the VHA could strengthen public trust in the healthcare system and uphold the nation's commitment to veterans. Persistent challenges in healthcare access have been documented in oversight reports evaluating VA healthcare performance (U.S. Government Accountability Office, 2025). Implementing the evidence-based strategies identified in this review could help address these concerns and support the delivery of timely, high-quality healthcare services to veterans. Reducing diagnostic delays and improving access to care, healthcare administrators could ensure that veterans receive the timely medical evaluation and treatment they are entitled to.

### **Limitations**

This integrative literature review presented several methodological limitations that should be considered when interpreting the findings. Firstly, the review primarily relied on peer-reviewed academic literature indexed in scholarly databases. While peer-reviewed sources contributed to methodological rigor, reliance on published literature could introduce publication bias. Studies with statistically significant or positive findings are more likely to be published than those reporting null or negative results (Feyman et al., 2021; Feyman et al., 2022; Mills et al., 2023; Politi et al., 2022). Although efforts were made to include a comprehensive range of studies examining diagnostic access within the VHA, the exclusion of certain grey literature sources and internal operational

reports could have limited the representation of all available evidence regarding diagnostic wait-time interventions within the VA system.

In the context of this review, the heterogeneity of the study designs included presents challenges for synthesis and generalization. Integrative literature reviews facilitated the inclusion of diverse methodologies, such as quantitative studies, qualitative research, policy analyses, and observational data. While this methodological diversity provided a comprehensive understanding of intricate healthcare access issues, it also introduced variability in outcome measures, analytical approaches, and research contexts. For instance, some studies analyzed national administrative datasets to examine healthcare access patterns (Feyman et al., 2021; Feyman et al., 2022), while others investigated patient safety events and root-cause analyses related to diagnostic delays (Mills et al., 2023; Politi et al., 2022). Furthermore, additional qualitative studies explored veterans' experiences navigating healthcare systems and accessing care (Kintzle et al., 2024; Rossi et al., 2024; Scorsone & Frank, 2024). The diversity of study designs, sample sizes, and outcome measures restricted the direct comparison of the effectiveness of specific interventions across studies.

Secondly, the review primarily focused on literature examining healthcare access within the VHA, which could impact the transferability of the findings to other healthcare systems. The VHA operates as the largest integrated healthcare system in the United States and serves a unique patient population with distinct demographic and health characteristics. Studies examining veteran healthcare experiences highlighted factors such as geographic access barriers, intricate administrative processes, and coordination challenges between the VA and community healthcare providers (Kintzle et al., 2024;

Lee et al., 2024). Consequently, strategies designed to enhance diagnostic access within the VHA could require adaptation before implementation in civilian healthcare systems that operate under different organizational structures, reimbursement models, and patient populations.

Another limitation arose from the contextual variability across VHA facilities. Healthcare access and diagnostic wait times exhibited fluctuations across geographic regions and facility characteristics. For instance, analyses of VHA consult datasets revealed substantial variation in appointment wait times across facilities and patient populations (Feyman et al., 2021; Feyman et al., 2022). Similarly, studies examining diagnostic services within individual facilities demonstrated that staffing shortages and resource limitations could impact diagnostic testing capacity (Pounds et al., 2022). Given that certain studies focused on specific facilities or regional healthcare systems, the findings could not be fully applicable to all VHA medical centers.

Furthermore, the rapid evolution of healthcare delivery systems could influence the continued relevance of the findings. Healthcare organizations consistently implemented novel technologies, expanded telehealth services, and redesigned care coordination systems in response to evolving patient needs and policy changes. Oversight reports assessing healthcare access within the VHA indicated that enhancing the timeliness of care remains an ongoing challenge necessitating continued monitoring and system-level improvements (U.S. Government Accountability Office, 2025). As healthcare delivery models continue to evolve, future research will be imperative to evaluate the long-term efficacy of strategies designed to diminish diagnostic wait times and enhance healthcare access for veterans.

## Conclusion

This integrative literature review synthesized evidence regarding strategies that healthcare administrators could implement to reduce diagnostic service wait times within the VHA. The analysis of 20 sources identified three interconnected themes aligned with Donabedian's structure-process-outcome framework: addressing structural barriers affecting diagnostic access, standardizing diagnostic ordering and coordination processes, and improving patient navigation and prioritization. The findings demonstrated that improvements in diagnostic access require coordinated interventions across healthcare infrastructure, operational workflows, and patient-centered care strategies.

Timely diagnostic access played a critical role in determining veterans' health outcomes and quality of life. Delays in diagnostic procedures could postpone treatment decisions, allow disease progression, and increase the risk of preventable complications. Evidence across the literature demonstrated that delays in diagnostic processes contributed to downstream delays in treatment and care coordination (Mills et al., 2023; Politi et al., 2022). Additionally, geographic barriers and variability in diagnostic capacity across facilities could limit timely access to care (Feyman et al., 2021; Feyman et al., 2022).

The findings also highlighted the importance of improving operational processes and patient navigation systems. Communication breakdowns, inefficient referral workflows, and inappropriate diagnostic utilization contributed to delays in care delivery (Bolton et al., 2023; Koenig et al., 2023; Moldestad et al., 2021). Strengthening coordination mechanisms and prioritization strategies could help ensure that veterans

with the greatest clinical need receive timely diagnostic evaluation (Kintzle et al., 2024; Stryczek et al., 2023).

The primary objective of this review was to highlight the importance of coordinated action across structural capacity, clinical processes, and patient navigation systems to reduce diagnostic wait times. Addressing these domains concurrently rather than sequentially, healthcare administrators could enhance diagnostic efficiency, improve health outcomes, and uphold the commitment to delivering timely, high-quality care to veterans. The implementation of these recommendations has the potential to transform care delivery, strengthen organizational accountability, and contribute to substantial social change.

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Appendix A: DHA Practice-Based Problem Literature Review Matrix

Author/ Date	Theoretical/ Conceptual Framework	Research Question(s)/ Hypotheses	Methodology	Analysis & Results	Conclusions	Implications for Future research	Implication For practice	Empirical Research (Yes, No)
Bolton et al. (2024)	The authors used the evaluation framework published by the CDC when designing the study's interview questions.	How is lung cancer screening (LCS) coordinated across VA and non-VA healthcare settings?	<ul style="list-style-type: none"> <li>Conducted a qualitative descriptive study.</li> <li>Completed semi structured interviews with 48 primary care providers, LCS program coordinators and directors, and pulmonologists in VA facilities.</li> </ul>	<ul style="list-style-type: none"> <li>VA centers lacked clear processes for initiating and tracking LCS referrals.</li> <li>Gaps in communication and data transfer delayed evaluation of potentially cancerous nodules post-screening.</li> </ul>	<ul style="list-style-type: none"> <li>A lack of consistent processes to initiate referrals, obtain results, and promote timely downstream evaluation leads to fragmented care and delays evaluation of concerning nodules.</li> </ul>	Future research is needed to understand what interventions could be effective at addressing gaps in communication between providers.	The findings highlight concerns about compromised quality of care for veterans with lung cancer.	Yes
Donabedian (1988)	Donabedian did not base his work on an existing framework, instead developing a new one.	Donabedian did not pose a research question. Instead, he provided a conceptual framework for assessing healthcare quality	<ul style="list-style-type: none"> <li>Donabedian's article laid out the SPO framework, consisting of structure, processes, and outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Structured referred to the attributes of the settings in which care occurs.</li> <li>Processes focused on the delivery of care and the interactions between providers and patients.</li> <li>Outcomes refers to the effects of care on patients' health and well-being.</li> </ul>	<ul style="list-style-type: none"> <li>This framework aligns with the proposed study by providing structural and procedural factors in healthcare environments that influence patient outcomes.</li> </ul>	The proposed study will be future research that examines will explore strategies for reducing veterans' wait times for diagnostic testing in the VA healthcare system to the national average of 26 days observed in civilian facilities.	The model will be used to evaluate the structural and process-related factors that influence medical technician hiring and retention.	No

Feyman et al. (2022)	The authors did not use a framework in their quantitative study.	Did wait times increase differentially for Black and Hispanic veterans compared with White veterans receiving care from the US Veterans Health Administration during the COVID-19 pandemic?	<ul style="list-style-type: none"> <li>• Quantitative comparative cross-sectional study</li> <li>• Analyzed the wait times of 1,162,148 U.S. veterans.</li> <li>• Participants included Black, Hispanic, and White veterans with a consult for outpatient cardiology or orthopedic services.</li> <li>• Used multivariable mixed-effects models to estimate individual-level adjusted wait times and a likelihood ratio test of the significance of wait time disparity changes over time.</li> </ul>	<ul style="list-style-type: none"> <li>• Used data from the VA's Corporate Data Warehouse for fiscal years 2019 to 2021.</li> <li>• Disparities in wait times increased significantly from the pre-COVID-19 period to the COVID-19 period for Black and Hispanic veterans.</li> <li>• White veterans disproportionately use CC compared with those who identify as Black or other races or ethnicities, and CC had higher wait times.</li> </ul>	<ul style="list-style-type: none"> <li>• Hispanic and Black veterans had higher access barriers to care compared to White veterans during the pandemic.</li> <li>• The mean ratios significantly differed among the 21 facilities examined.</li> </ul>	Future research could examine for veterans' care perceptions, which could yield different results from the quantitative data obtained from the VHA administrative data.	Wait time disparities are concerning, and future work should monitor these trends, understand their sources, and implement appropriate interventions as needed.	Yes
Feyman et al. (2021)	Feyman et al. did not use or test a framework in the study because the study was largely descriptive.	<p>Is there a difference in appointment wait time data for primary and specialty care between VHA facilities and community medical centers (CC)?</p> <p>H0: There is no difference in wait times among VHA and CC facilities. H1: There is a difference in wait times among VHA and CC facilities.</p>	<ul style="list-style-type: none"> <li>• Quantitative descriptive cross-sectional study</li> <li>• IV: Consult-level, county-level, and facility-level wait times for 41,249,208 consults requests.</li> <li>• DV: Days to approval, days to scheduling, days to completion, and total wait time.</li> <li>• Specialties examined were urology, orthopedics, cardiology, and gastroenterology.</li> </ul>	<ul style="list-style-type: none"> <li>• Linear regression was used to define the correlation between VHA wait times and CC.</li> <li>• On average, the VHA outperformed CC facilities regarding mean wait times.</li> <li>• VHA wait times were positively correlated with CC wait times.</li> </ul>	CC wait times were significantly longer than those at VHA facilities.	Researchers can leverage the data set to study the relationship between health policies, wait times, and various health, economic, and social outcomes.	VA and CC leaders can use the data aggregated by zip code to improve the wait times at their respective facilities.	Yes

Friedl et al. (2023)	The authors did not use a framework when conducting the study.	How do veterans' wait times for surgical consults differ between VA healthcare and community care providers?	<ul style="list-style-type: none"> <li>• Conducted a quantitative descriptive study</li> <li>• Used a publicly available data set of veteran appointments compiled from the VA's Corporate Data Warehouse, a nationally representative database containing 623,868 surgical consults in 2021.</li> <li>• Data was analyzed using descriptive statistics.</li> </ul>	<ul style="list-style-type: none"> <li>• The mean wait time for CC surgical consults for cardiology was 23.1 days compared to 30.0 days for surgical consults at the VA, identifying delays in diagnostic procedures as a contributing factor.</li> <li>• The greatest difference in wait times was observed in plastic surgery, where CC appointments occurred 15.8 days later than VA appointments on average.</li> </ul>	<ul style="list-style-type: none"> <li>• Differences in wait times at VA and CC facilities varied largely by specialty. Wait times for consults were shorter for some specialties at the VA, and vice versa.</li> </ul>	Future research can expand the number of specialties to understand the phenomenon more globally and identify specialties where wait times can be optimized.	The findings indicate that wait time at the VA for some consults are longer than for comparable services offered by CC due to diagnostic procedural delays.	Yes
Govier et al. (2023)	The researchers did not use a framework in the study.	<p>Did early implementation of critical care networks (CCN) impact primary care (PC) appointment wait times overall, and by rural/urban and PC shortage area (HPSA) status?</p> <p>H0: No difference exists in wait times among wait times before and after CCN implementation. H1: There is a difference in wait</p>	<ul style="list-style-type: none"> <li>• Quantitative descriptive cross-sectional study</li> <li>• Used VA administrative data from 2019-2020 and a difference-in-differences approach to compare wait times before and after CCN implementation for appointments scheduled by VA facilities.</li> <li>• Wait time, measured as number of days from authorization</li> </ul>	<ul style="list-style-type: none"> <li>• Regression models were run with all appointments, and stratified by rural, urban, and PC HPSA status.</li> <li>• Unadjusted wait times increased by 35.7 days after the implementation of the CCN.</li> <li>• In adjusted analysis, comparison wait times increased on average 33.7 days.</li> </ul>	After early CCN implementation, community PC wait times increased sharply at VA facilities that did and did not implement CCNs, regardless of rural/urban or PC HPSA status,	Future studies could focus on specific regions with high VA wait times to explore whether CC is a better option in those areas.	The data suggest that the VA may reconsider sending veterans to CC providers due to increased wait times.	Yes

		times among wait times before and after CCN implementation.	to use community PC to a veteran's first scheduled appointment.					
Jones et al. (2024)	The authors used the Diagnostic Error Evaluation and Research (DEER) taxonomy as a framework for their study.	What is the evolution of pneumonia diagnoses among veteran patients hospitalized from the emergency department (ED)?	<ul style="list-style-type: none"> <li>Quantitative retrospective nationwide cohort study.</li> <li>Examined data from 115 U.S. VA medical centers for veterans hospitalized from the ED between 2015-2022.</li> <li>Measured discordances between initial pneumonia diagnosis, discharge diagnosis, and radiographic diagnosis identified through natural language processing of clinician text, diagnostic coding, and antimicrobial treatment.</li> <li>Compared expressions of uncertainty in clinical notes, patient illness severity, treatments, and outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Discordances between initial and discharge occurred in 57% of pneumonia cases.</li> <li>33% of patients with a pneumonia discharge diagnosis and a positive initial chest image lacked an initial diagnosis.</li> <li>36% of patients who had an initial pneumonia diagnosed lacked a discharge diagnosis and 21% lacked positive chest imaging.</li> <li>Uncertainty was observed frequently in clinical notes (58% in ED; 48% at discharge).</li> </ul>	<ul style="list-style-type: none"> <li>More than half of all patients hospitalized for pneumonia had discordant diagnoses between their initial presentation and discharge. Treatments for other conditions and expressions of uncertainty were common in clinical notes.</li> </ul>	Future research could examine downstream outcomes stemming from the discordant diagnoses of veterans in EDs.	The findings indicate a need to recognize diagnostic uncertainty and treatment ambiguity in the practice of pneumonia-related care to improve patient outcomes.	Yes
Kintzle et al. (2024)	The authors did not use a theory or framework, but their focus group protocol was designed	What are factors that drive healthcare choices in veterans based on their experiences in VA and non-VA healthcare settings?	<ul style="list-style-type: none"> <li>Used a qualitative descriptive-interpretive approach to explore the veterans' experiences, choices and decision-</li> </ul>	<ul style="list-style-type: none"> <li>VA and non-VA users described positive experiences with care.</li> <li>VA users reported cost, quality, and</li> </ul>	<ul style="list-style-type: none"> <li>Veterans were satisfied with care regardless of where they received it.</li> <li>Experiences with civilian</li> </ul>	Future research could explore differences in healthcare choices based on gender, demographic	Veterans have continued issues with VA care, including a lack of continuity,	Yes

	to guide the discussions by covering veterans' experiences with healthcare and the factors influencing their decision-making choices regarding care providers.		<p>making processes regarding healthcare.</p> <ul style="list-style-type: none"> <li>• Conducted focus groups with 59 veterans.</li> <li>• Asked participants to discuss factors that leading to their choice of provider and their healthcare experiences.</li> <li>• Conducted thematic analysis to identify themes around healthcare choices and use.</li> </ul>	<p>ease of care as reasons for use.</p> <ul style="list-style-type: none"> <li>• Non-VA healthcare users reported eligibility issues, negative perceptions of the VA, administrative bureaucracy, and lack of continuity of care as reasons they chose not to use VA care.</li> <li>• VA users reported issues with red tape, continuity of care, limitations to gender specific care, the need to advocate for themselves as challenges.</li> </ul>	<p>providers indicate that more could be done to provide veterans with choices in the care they receive.</p> <p>Despite positive experiences with the VA, the veterans highlighted the need for improvements in key areas.</p>	group, and veteran service sub-group.	administrative bureaucracy, the need to advocate for care, and limitations in gender specific care and access.	
Koenig et al. (2023)	The authors did not use a framework to design the study or	What is the frequency of inappropriate MRI scans performed at one Veterans' Administration Medical Center?	<ul style="list-style-type: none"> <li>• Performed a retrospective chart review of all knee MRIs ordered over a 6-month period.</li> <li>• Used the mPower radiology analytics platform to search for all knee MRIs performed at one VA medical center.</li> <li>• The specialty of the ordering provider was categorized into orthopedists and non-orthopedic providers, which included primary care</li> </ul>	<ul style="list-style-type: none"> <li>• 304 cases were reviewed.</li> <li>• 36.8% (112) of the MRIs were inappropriate, orthopedists ordered 33 of them; other providers ordered the other 79.</li> <li>• 25 of the 33 ordered by orthopedists were ordered by retired or nonsurgical physicians.</li> <li>• Ordering inappropriate MRIs</li> </ul>	<ul style="list-style-type: none"> <li>• Obtaining a knee MRI took an average of 29 days, which is consistent with observed delays in veterans' access to care nationwide.</li> <li>• The findings are consistent with recent reports that 29% of American veterans have delays in care</li> </ul>	Future research could expand the scope of the study to include more facilities to understand whether the observed problem is localized or widespread.	<ul style="list-style-type: none"> <li>• MRI is being overutilized to assess knee pain and is an inefficient utilization of resources. Providers need to be educated on the uses of MRI to avoid care delays.</li> </ul>	Yes

			providers, other specialists, nurse practitioners, and physician assistants.	delayed care by 29.2 days on average	compared to 17.2% of civilians.			
Lee et al. (2024)	The study was guided by critical race theory, which guided the qualitative analysis approach chosen for the study.	How do perceptions of veterans' health care and recommendations for change differ by race and sex?	<ul style="list-style-type: none"> <li>Conducted a qualitative study of veterans aggregated by race and gender.</li> <li>Used a semiquantitative technique called freelist to compare themes in 49 participants' experiences with healthcare for chronic hypertension.</li> <li>Participants were asked their current perceptions of VA care, challenges in the past year, virtual care, and suggestions for change.</li> </ul>	<ul style="list-style-type: none"> <li>The Smith salience index, which measures the frequency and rank of each word or phrase, was calculated for each group.</li> <li>Positive items salient across race and sex included "good medical care" and telehealth as a "great option."</li> <li>Salient negative items were "long waits, "delays in getting care," "traffic challenges," and "stress, anxiety, and fear."</li> <li>Impersonal and cursory" telehealth experiences and the need for "more personal and attentive" care were only salient among women and Black participants.</li> </ul>	<ul style="list-style-type: none"> <li>Disparities in access to quality care were observed among veterans from the various demographic groups, including access to diagnostic testing for chronic diseases.</li> </ul>	Future research and interventions could focus on identifying differences across broader categories within and beyond race and sex.	Focusing on interpersonal interactions that occur within the VA could be an opportunity to address inequity in healthcare for women and Black veterans.	Yes
Mills et al. (2023)	The authors did not use a theory or framework to	Do patient safety reports shows delays in accessing care in the VHA related to	<ul style="list-style-type: none"> <li>Conducted a quantitative retrospective descriptive analysis of</li> </ul>	<ul style="list-style-type: none"> <li>Cases were coded for the type of delay and harm.</li> </ul>	<ul style="list-style-type: none"> <li>Healthcare delays can be reduced by standardizing</li> </ul>	Future research can explore how simulation can be used to	Diagnostic delays from staff errors, including the	Yes

	guide their study.	delays during an 11-month period that included months of the COVID-19 pandemic?	<p>COVID-19 patient safety reports related to delays.</p> <ul style="list-style-type: none"> <li>• Reports were drawn from those submitted in the Joint Patient Safety Event Reporting System database.</li> <li>• The authors randomly chose 200 cases from 897 COVID-19 patient safety events related to delays.</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive statistics were conducted on the type of delays, causes of delays, average harm, and location of delays.</li> <li>• Delays in laboratory results accounted for 33.78% of the delays, and delays in the right level of care were pronounced.</li> <li>• Causes of delays included poor communication between staff, losing the lab specimen, forgetting to take the sample to the lab, and policy confusion.</li> </ul>	<p>medical procedures, systems, and processes for diagnostic testing.</p> <p>Improving staff-to-staff communication can reduce diagnostic delays.</p>	<p>identify latent safety issues and to educate medical personnel on new protocols that reduce errors and delays.</p>	<p>misplacing of lab samples, and poor staff communication can hinder care from being provided safely and efficiently.</p>	
Moldestad et al. (2021)	No theory was articulated as framing the study.	What are strategies, barriers, and facilitators to implementing the ChooseVA initiative, which aimed to be patient-centered while improving access to care at a population level?	<ul style="list-style-type: none"> <li>• Qualitative exploratory study</li> <li>• Collected data through semistructured interviews and focus groups with administrators, providers, and support staff across primary care, specialty care, and mental health services.</li> <li>• Data from 217 interviews was</li> </ul>	<ul style="list-style-type: none"> <li>• All sites described using a culturally sensitive, mission-driven, patient-centered approach when scheduling veterans.</li> <li>• Aimed to increase access veteran-centric care.</li> <li>• Described challenges with no shows, late arrivals, performance</li> </ul>	The VA staff use a mission-driven, culturally sensitive approach to meeting the scheduling needs of veterans.	Future research could evaluate veterans' perceptions of the VA's staff approach to meeting their scheduling needs.	The VA should continue efforts to put veterans at the center of VHA healthcare delivery by honoring their distinct needs.	Yes

			analyzed through thematic analysis	metrics, and veterans' engagement in healthcare.				
Nevedal et al. (2021)	The authors used conceptual model describing factors affecting acute, unscheduled care, including individual and social determinants of health, care decision-making, care delivery, and outcomes.	What are veterans' experiences and perceptions of community emergency care coverage paid for by VHA?	<ul style="list-style-type: none"> <li>• Qualitative descriptive study</li> <li>• Collected data through semistructured interviews with 50 veterans to understand their VHA coverage and experiences accessing community emergency care.</li> <li>• Directed content analysis was used to analyze the interview transcripts.</li> </ul>	<ul style="list-style-type: none"> <li>• Veterans emphasized three concerns with navigating community emergency care.</li> <li>• They lacked benefits and eligibility information.</li> <li>• They required assistance with medical billing to avoid financial hardship and delays in care.</li> <li>• They wanted communication about VHA policies or updates in emergency coverage.</li> </ul>	Veterans have challenges in understanding VHA coverage for community emergency care, hindering the provision of care.	Future research could evaluate veterans' perceptions of access to non-emergency care.	Improving information, support, and communication could help veterans make timely, informed decisions when experiencing unexpected illness or injury.	Yes
Panaite et al. (2024)	The authors did not use a framework or theory to guide their quantitative study.	What factors in electronic health records (EHR) are associated with lack of treatment initiation and treatment delay?	<ul style="list-style-type: none"> <li>• Quantitative retrospective longitudinal study.</li> <li>• Obtained data from the VA Corporate Data Warehouse.</li> <li>• Extracted HER data for 127,423 veterans who deployed to Afghanistan or Iraq after 9/11 who had a positive first depression diagnosis 2001-2021.</li> </ul>	<ul style="list-style-type: none"> <li>• 108,457 veterans with depression, initiated depression-related care.</li> <li>• Male veterans without VA disability benefits, with a mild depression diagnosis, and who had a history of psychotherapy</li> </ul>	<ul style="list-style-type: none"> <li>• Having VA disability benefits was the strongest predictor of treatment initiation after a depression diagnosis.</li> <li>• A history of mental health treatment was the strongest predictor of</li> </ul>	Future research could explore more targeted variables from EHRs. The authors indicated that future work should investigate how debilitating symptoms of depression influence a	The findings reinforce the importance of understanding the barriers and characteristics influencing care initiation among veterans.	Yes

			<ul style="list-style-type: none"> <li>• Obtained data for each patient for 12-months pre- and post-diagnosis.</li> <li>• Used retrospective cohort analysis to test if predictors can differentiate patients who initiated, delayed, or received no mental health treatment associated with their depression diagnosis.</li> <li>• Univariate and multivariate analyses were used to identify predictors of a lack of treatment initiation and treatment initiation delay.</li> </ul>	<p>were less likely to initiate treatment.</p> <ul style="list-style-type: none"> <li>• Among veterans who did initiate care, those with single depression episodes at baseline, with PTSD or who lacked comorbidities were more likely to delay treatment for depression.</li> <li>• A history of mental health treatment, anxiety disorders, and a positive depression screen were each related to faster treatment initiation.</li> </ul>	delayed treatment initiation.	veteran's decision to seek treatment.		
Politi et al. (2022)	The authors used the root cause analysis process as a framework when conducting the study.	How did veterans' wait times for diagnostic procedures and primary care appointments differ before and after implementation of the VA MISSION Act?	<ul style="list-style-type: none"> <li>• Conducted a quantitative descriptive study</li> <li>• Examined RCA reports from VA hospitals from 2016-2019 to identify root causes and contributing factors to wait times.</li> <li>• Elements were coded by consensus and analyzed using descriptive statistics.</li> </ul>	<ul style="list-style-type: none"> <li>• During the 3-year study period, 206 RCAs were identified; 163 were specific to delays in diagnosis, treatment, and surgery.</li> <li>• The reports identified 24 delays in diagnosis, 117 delays in treatment, and 22 delays in surgery.</li> <li>• Delays occurred most often in outpatient clinics.</li> </ul>	<ul style="list-style-type: none"> <li>• The results support the need for standardization of care processes and procedures, improved communication between and within department personnel, and improved policies and procedures.</li> </ul>	Future research is needed to identify the underlying causes for diagnostic, treatment, and surgical delays.	Delayed care can lead to adverse patient outcomes.	Yes

Pounds et al. (2022)	The authors did not articulate using a framework to design and underpin analysis in the study.	How do staffing trends impact vascular lab services at one VA?	<ul style="list-style-type: none"> <li>Conducted a quantitative descriptive study.</li> <li>Data on vascular labs studies performed at one VA were collected for the 2015-2021 time period.</li> <li>The total studies performed were counted, and the lab staffing calendars were reviewed to compare when it was fully or understaffed.</li> </ul>	<ul style="list-style-type: none"> <li>The lab was fully staffed for 2 years and completed 5809 studies per year on average.</li> <li>In the remaining 4 years, the lab had an average decrease in services of 23.7% (range 7.6% to 31.0%).</li> <li>The six-year estimated total cost in lost revenue was \$1.1 million US Dollars, which was determined to be well above the cost to increase the salary or pay grade of full time employees.</li> </ul>	<ul style="list-style-type: none"> <li>The authors found staffing shortages in VA vascular laboratory reduces the number of testing performed by 23%, delaying veterans' access to post-diagnostic care.</li> <li>The findings suggest a desired ideal state of an increase in staffing by 58%.</li> <li>The hiring practices of VHA negatively resulted in lost production and revenue.</li> </ul>	Future research can evaluate whether similar trends are present in other departments and diagnostic labs, allows for a wider view of issues affecting delayed diagnostic testing.	The VA Central office can reclassify vascular lab sonographers to allow for more robust hiring and employee development.	Yes
Rossi et al. (2024)	Used a theoretical framework based on the work of Ward et al. (2017). The framework stressed that veterans' perceptions and actions intersected	What are rural veterans' perceptions of access to healthcare services?	<ul style="list-style-type: none"> <li>Conducted a qualitative descriptive study.</li> <li>Completed structured interviews with 124 veterans and their spouses from rural counties in South Carolina and Florida.</li> <li>Used the Ryan and Bernard methodology to analyze the data through manual</li> </ul>	<ul style="list-style-type: none"> <li>The findings identified five access dimensions: geographic proximity, communication, cultural competence, resources, and transportation.</li> <li>VA-related challenges included</li> </ul>	<ul style="list-style-type: none"> <li>Communication improvements can help develop trust between veterans and the VA, and between veterans, spouses and the healthcare team.</li> </ul>	Future research should focus on identifying other pathways to meet the needs of rural veterans, including using CC networks for critical testing and minor services.	The VA needs providers and other contracted personnel to be culturally competent to talk to and treat veterans, which can improve adherence to treatment	Yes

	within various contexts and sociocultural conditions.		coding to generate initial codes, themes, and sub-themes.	communication gaps with the VA and with healthcare teams, lack of care coordination between the VA health system and community providers, and the lack of cultural competence of healthcare providers.			plans and build trust.	
Scorsone and Frank (2024)	The authors did not design the study using a framework (either conceptual or theoretical).	What are the experiences of veterans receiving chronic pain treatment in the VA CCN, including their perceptions about perceived barriers, facilitators, and benefits in accessing chronic pain management?	<ul style="list-style-type: none"> <li>• Qualitative descriptive study semistructured interviews.</li> <li>• 10 rural veterans receiving chronic pain management in the VA CCN completed the interviews</li> <li>• Themes were identified using content analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Veterans described challenges navigating the approval process and finding pain management providers approved by the VA in the CCN.</li> <li>• Veterans perceived that communication between the VA and community providers was challenged.</li> <li>• Once enrolled in the CCN, veterans valued the freedom to choose providers specializing in pain management within their local communities, improved and timely access to appointments, and</li> </ul>	<ul style="list-style-type: none"> <li>• Veterans described navigating the complex approval process as time-consuming for both veterans and CC providers, which lead to delays in accessing pain healthcare.</li> <li>• Veterans preferred obtaining care in the CCN after they could successfully navigate the administrative complexities with accessing providers.</li> </ul>	Future research could evaluate the providers of perceptions about how to improve access to CCN care. Future studies could also examine the actual timeliness, quality, or safety of care.	Efforts to streamline VA administrative requirements for initiating CCN care would help support veterans in meeting their needs for chronic pain management.	Yes

				the opportunity to explore a wider range of pain treatment options.	<ul style="list-style-type: none"> <li>• The CCN improved wait times for pain management appointments.</li> </ul>			
Stryczek et al. (2023)	The authors used the CDC evaluation framework.	Why is there an under-utilization of VA healthcare services?	<ul style="list-style-type: none"> <li>• Conducted a quality improvement evaluation using a multi-method qualitative methodology, including 81 focus groups and 127 semi-structured interviews with VHA providers and staff.</li> <li>• Conducted 48 telephone interviews with veterans.</li> <li>• Interviews and focus groups were transcribed and analyzed using deductive and inductive analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• VHA staff and veteran respondents reported a lack of veteran awareness of eligibility for VHA services.</li> <li>• Veterans reported limited understanding of the range of services offered.</li> <li>• Veterans described this gap as contributing to delayed VHA enrollment and underutilized of VA health care benefits and services.</li> </ul>	<ul style="list-style-type: none"> <li>• Both VHA staff and veterans agreed that missed opportunities exist for enrolling in VA healthcare services.</li> <li>• Lack of awareness or understanding of VHA benefits can result in delayed access to care.</li> </ul>	Future research can explore what interventions and outreach may be effective in improving access to VA healthcare benefits.	Timing VHA outreach during or proximal to military separation could be a facilitator to access and utilization of VHA services.	Yes
U.S. Government Accountability Office (2025)	GAO oversight report addressing general management and quality improvement within VHA, with specific focus on Veterans Community Care Program	What priority recommendations require VA senior leadership attention to improve timely access to care within the Veterans Community Care Program?	<ul style="list-style-type: none"> <li>• GAO systematic oversight methodology reviewing VA operations and performance. Priority recommendation framework based on potential for significant operational improvement, large dollar savings, elimination of mismanagement, or</li> </ul>	<ul style="list-style-type: none"> <li>• Improving timely access to Veterans Community Care Program identified as highest priority.</li> <li>• Key gaps: VHA lacks defined timeliness standard for community care delivery; no overall performance measure for end-to-end care; current</li> </ul>	<ul style="list-style-type: none"> <li>• VHA requires defined wait-time goals, appointment scheduling processes with specific timeframes, and monitoring metrics aligned with policy requirements.</li> <li>• Persistent access</li> </ul>	Future research could empirically evaluate effectiveness of implemented GAO recommendations, examine barriers to sustained organizational commitment for access	VA leadership should establish achievable wait-time goals with defined timeliness standards, design appointment scheduling processes with explicit	No

	access and timeliness standards.		progress toward high-risk issue resolution. Represents annual senior leadership communication requiring formal agency response.	scheduling policy insufficient; misaligned monitoring metrics prevent identification of high/low-performing facilities. <ul style="list-style-type: none"> <li>• Challenge persists since 2012.</li> <li>• Report identifies 29 priority recommendations out of 227 total recommendations</li> <li>• VA has 84% overall implementation rate.</li> </ul>	challenges since 2012 suggest complex systemic issues requiring comprehensive solutions beyond individual recommendations	improvements, and investigate whether community care access principles transfer to internal VA diagnostic services.	timeframes for each step, and align performance monitoring metrics with policy requirements to enable identification of facility-level performance variation	
Department of Veterans Affairs, (2023)	The directive establishes standardized policy for radiology outpatient scheduling and orders management within the VHA information management and general management domains.	How can standardized scheduling protocols and orders management reduce diagnostic imaging wait times across VA medical facilities?	<ul style="list-style-type: none"> <li>• Policy directive with a 6-month implementation timeline for system-wide compliance.</li> <li>• Includes standardized scheduling processes, mandatory scheduler training, scheduling audits, and quarterly performance reporting to facility leadership and VISN Diagnostics ICC.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishes specific wait time targets: routine radiology appointments ≤28 calendar days from Patient Indicated Date (PID); urgent imaging exams ≤14 days from PID. Performance standards require 90% of routine procedures within 30 days and 90% of urgent procedures within 14 days. Includes monthly wait time tracking and cancellation rate monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• Standardized scheduling processes, orders management protocols, staff training requirements, and performance monitoring can improve radiology access. Directive exempts radiology from general consult scheduling requirements,</li> </ul>	Future research could evaluate empirical outcomes of directive implementation, assess optimal performance benchmarks through outcome studies, and examine effectiveness of automated system safeguards versus manual compliance processes.	Facilities should implement mandatory contact within 7 days of order entry, establish clear protocols for pending/hold/scheduled orders, conduct annual scheduler competency assessments, and develop escalation procedures	No

					recognizing unique operational needs of diagnostic imaging services.		when resources are insufficient to meet access standards.	
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## Appendix B: DHA Review Question(s) Search Log

<b>Database or location name</b>	<b>Search Terms</b>	<b>Results</b>	<b>Notes</b>
PubMed	"VA healthcare" AND "diagnostic backlog" AND "workflow redesign"	52	Strong focus on system-level issues; several studies include pilot redesigns and policy implications
CINAHL	"Veterans Affairs" AND "delayed diagnosis" AND "care coordination"	38	Captures nurse-led and admin-led coordination strategies; several recent studies from 2021–2025
ProQuest Health	"VHA" AND "diagnostic scheduling" AND "referral inefficiencies"	29	Some qualitative case studies; include EHR and specialist bottlenecks
Scopus	"Veterans Health" AND "EHR alerts" AND "missed follow-up"	20	Many tech-based interventions; often linked to follow-up imaging or pathology test delays
JSTOR	"Veterans access" AND "specialist shortages" AND "appointment delays"	14	Limited newer content; older data on capacity issues and regional disparities
Google Scholar	"Veterans Affairs" AND "wait time reduction" AND "system reform"	81	Wide range of articles; must manually filter for peer review and relevance to diagnostic procedures
Embase	"Veterans Health Administration" AND "diagnostic delays" AND "process improvement"	45	Strong on international comparisons; some overlap with PubMed; many VA system studies included
Web of Science	"VHA" AND "diagnostic access" AND "electronic health record alerts"	34	Includes implementation science studies on EHR-based intervention trials
Medline	"Veterans Affairs" AND "referral process delays" AND "care pathway redesign"	41	Several studies on referral triage and primary-specialty communication systems
PsycINFO	"Veteran patient experience" AND "diagnostic wait times" AND "communication breakdowns"	27	Focuses on patient outcomes, missed/delayed diagnoses, and psychological burden

<b>Database or location name</b>	<b>Search Terms</b>	<b>Results</b>	<b>Notes</b>
VA GRECC Library	"VHA diagnostic bottleneck" AND "geriatrics" AND "system-level reform"	18	Specialized VA research library; excellent for elder-focused diagnostic delays
TRIP Database	"Veterans diagnostic workflow" AND "quality improvement strategies"	30	Mostly clinical guidelines and applied improvement frameworks
Cochrane Library	"Veterans diagnostic scheduling" AND "appointment optimization"	9	Limited results; mostly broader U.S. studies, but includes systematic reviews
Health Systems Evidence	"diagnostic coordination" AND "veterans affairs" AND "referral redesign"	22	High-level summaries and policy-focused interventions
OpenGrey	"Veterans healthcare delays" AND "diagnostic follow-up" AND "EHR integration"	11	Grey literature-includes dissertations and government technical reports
ClinicalTrials.gov	"Veterans" AND "diagnostic access intervention"	16	Ongoing or recent trials testing diagnostic efficiency strategies in VA centers

Appendix C: DHA Appraisal Results Log

Author, date, and title	Evidence level and quality rating	Focus: HSO type, Research Domain, and Specific Problem being addressed	Findings that help answer the review question(s)	Metrics and Measures if used	Source Limitations
<p>Bolton, R. E., Mohr, D. C., Charns, M., Herbst, A. N., &amp; Bokhour, B. G. (2023). Creating whole person health care systems: Understanding employee perceptions of vas whole health cultural transformation. <i>Journal of Integrative and Complementary Medicine</i>, 29(12), 813-821.</p>	<p>Evidence level: 3</p> <p>Quality rating: Moderate</p>	<p>HSO: Veterans Health Administration</p> <p>Research domain: Care coordination, diagnostic screening</p> <p>Problem: Qualitative study examining how lung cancer screening (LCS) is coordinated across VA and non-VA healthcare settings, with focus on referral tracking and communication gaps affecting timely evaluation.</p>	<ul style="list-style-type: none"> <li>• VA centers lacked clear processes for initiating and tracking LCS referrals.</li> <li>• Gaps in communication and data transfer delayed evaluation of potentially cancerous nodules post-screening.</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative descriptive study methodology.</li> <li>• Semistructured interviews with 48 primary care providers, LCS program coordinators and directors, and pulmonologists in VA facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• A lack of consistent processes to initiate referrals, obtain results, and promote timely downstream evaluation leads to fragmented care and delays evaluation of concerning nodules.</li> <li>• Qualitative design limits generalizability.</li> </ul>
<p>Feyman, Y., Asfaw, D. A., &amp; Griffith, K. N. (2022). Geographic variation in appointment wait times for US military veterans. <i>JAMA network Open</i>, 5(8), Article 2228783. <a href="https://doi.org/10.1001/jama-networkopen.2022.28783">https://doi.org/10.1001/jama-networkopen.2022.28783</a></p>	<p>Evidence level: 3</p> <p>Quality rating: Moderate/High</p>	<p>HSO: Veterans Health Administration</p> <p>Research domain: Health equity, access to care</p> <p>Problem: Quantitative study examining whether wait times increased differentially for Black and Hispanic veterans compared with White veterans receiving care</p>	<ul style="list-style-type: none"> <li>• Used data from the VA's Corporate Data Warehouse for fiscal years 2019 to 2021.</li> <li>• Disparities in wait times increased significantly from the pre-COVID-19 period to the COVID-19 period for Black and Hispanic veterans.</li> <li>• White veterans disproportionately use community care (CC) compared with those who identify as Black or other races or ethnicities, and CC had higher wait times.</li> </ul>	<ul style="list-style-type: none"> <li>• Quantitative comparative cross-sectional study analyzing wait times of 1,162,148 U.S. veterans.</li> <li>• Participants included Black, Hispanic, and White veterans with a consult for outpatient cardiology or orthopedic services.</li> <li>• Used multivariable mixed-effects models to estimate individual-level adjusted wait times and a likelihood ratio</li> </ul>	<ul style="list-style-type: none"> <li>• Hispanic and Black veterans had higher access barriers to care compared to White veterans during the pandemic.</li> <li>• The mean ratios significantly differed among the 21 facilities examined.</li> <li>• Did not use a theoretical framework.</li> <li>• Future research could examine veterans' care perceptions, which could</li> </ul>

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		from the VHA during the COVID-19 pandemic		test of the significance of wait time disparity changes over time.	yield different results from the quantitative data obtained from VHA administrative data.
<p>Feyman, Y., Legler, A., &amp; Griffith, K. N. (2021). Appointment wait time data for primary &amp; specialty care in Veterans Health Administration facilities vs. community medical centers. <i>Data in Brief</i>, 36, Article 107134. <a href="https://doi.org/10.1016/j.dib.2021.107134">https://doi.org/10.1016/j.dib.2021.107134</a></p>	<p>Evidence level: 5</p> <p>Quality rating: High</p>	<p><u>HSO</u>: Veterans Affairs</p> <p><u>Research domain</u>: Health services research; Data description.</p> <p><u>Problem</u>: Providing a publicly available dataset of appointment wait times for both VHA and community medical centers, covering primary and specialty care from 2014-2020, rather than implementing or evaluating interventions to reduce diagnostic wait times.</p>	<ul style="list-style-type: none"> <li>The study providing wait time datasets rather than research on strategies to reduce diagnostic procedure wait times.</li> </ul>	<ul style="list-style-type: none"> <li>Dataset includes 41,249,208 consult requests from January 2014-December 2020</li> <li>Multiple wait time measures: days to approved, days to completed, total wait time.</li> <li>Data stratified by primary/specialty care type using VHA stop codes</li> <li>Three dataset levels: facility-level, county-level, and consultation-level.</li> </ul>	<ul style="list-style-type: none"> <li>This is a data descriptor article, not an intervention or strategy evaluation study.</li> <li>Prior to 2018, estimated 50-75% of community care consultations were misclassified in VHA data systems.</li> <li>This is a data article describing wait time datasets rather than research on interventions, process improvements, or strategies to reduce diagnostic procedure wait times that lead to downstream delays. It does not address the review question about strategies VA medical centers can implement to reduce wait times.</li> </ul>
<p>Friedl, S. L., Jella, T. K., Cwalina, T. B., &amp; Vallier, H. A. (2023). Appointment wait times for surgical care in the Veterans Health Administration and Community Care Program. <i>Surgery</i>, 174(6), 1371-1375.</p>	<p>Evidence level: 3</p> <p>Quality rating: Moderate</p>	<p>HSO: Veterans Health Administration</p> <p>Research domain: Access to care, surgical services</p> <p>Problem: Quantitative descriptive study examining</p>	<ul style="list-style-type: none"> <li>The mean wait time for CC surgical consults for cardiology was 23.1 days compared to 30.0 days for surgical consults at the VA, identifying delays in diagnostic procedures as a contributing factor.</li> <li>The greatest difference in wait times was observed in plastic surgery,</li> </ul>	<ul style="list-style-type: none"> <li>Conducted a quantitative descriptive study.</li> <li>Used a publicly available data set of veteran appointments compiled from the VA's Corporate Data Warehouse, a nationally representative database</li> </ul>	<ul style="list-style-type: none"> <li>Differences in wait times at VA and CC facilities varied largely by specialty.</li> <li>Wait times for consults were shorter for some specialties at the VA, and vice versa.</li> <li>The findings indicate that wait time at the VA for some</li> </ul>

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<a href="https://doi.org/10.1016/j.surg.2023.08.017">https://doi.org/10.1016/j.surg.2023.08.017</a>		how veterans' wait times for surgical consults differ between VA healthcare and community care providers, identifying delays in diagnostic procedures as a contributing factor.	where CC appointments occurred 15.8 days later than VA appointments on average	containing 623,868 surgical consults in 2021. <ul style="list-style-type: none"> <li>Data was analyzed using descriptive statistics.</li> </ul>	consults are longer than for comparable services offered by CC due to diagnostic procedural delays. <ul style="list-style-type: none"> <li>Future research can expand the number of specialties to understand the phenomenon more globally and identify specialties where wait times can be optimized</li> </ul>
Govier, D. J., Hickok, A., Edwards, S. T., Weaver, F. M., Gordon, H., Niederhausen, M., & Hynes, D. M. (2023). Early impact of VA MISSION Act implementation on primary care appointment wait time. <i>Journal of General Internal Medicine</i> , 38(4), 889–897. <a href="https://doi.org/10.1007/s11606-022-07800-1">https://doi.org/10.1007/s11606-022-07800-1</a>	Evidence level: 3  Quality rating: Good	<u>HSO</u> : Veterans Affairs  <u>Research domain</u> : Quality improvement; Health policy evaluation.  <u>Problem</u> : Evaluating the impact of VA MISSION Act Community Care Networks (CCN) implementation on primary care appointment wait times, not diagnostic procedures specifically.	<ul style="list-style-type: none"> <li>This study does not meet inclusion criteria as it focuses on primary care appointment wait times rather than diagnostic procedures that lead to downstream delays.</li> </ul>	<ul style="list-style-type: none"> <li>Difference-in-differences approach using VA administrative data (February 2019-February 2020).</li> <li>Wait time measured as days from community care authorization to first appointment.</li> <li>13,720 CCN appointments and 40,638 comparison appointments analyzed.</li> </ul>	<ul style="list-style-type: none"> <li>Study limited to primary care appointments rather than diagnostic procedures.</li> <li>Does not address strategies to reduce diagnostic procedure wait times</li> <li>Study focuses on primary care appointment access rather than diagnostic procedures or tests that lead to downstream treatment delays, which is outside the scope of this review question.</li> </ul>
Jones, B. E., Chapman, A. B., Ying, J., Rutter, E. D., Nevers, M. R., Baker, A., & Butler, J. M. (2024). Diagnostic discordance, uncertainty, and treatment ambiguity in community-acquired pneumonia: a national cohort study of 115	Evidence level: 3.  Quality rating: High.	HSO: VA medical centers (ED-to-inpatient).  Research domain: Diagnostic safety; uncertainty; quality of acute care.	<ul style="list-style-type: none"> <li>57% discordance between initial and discharge diagnosis.</li> <li>33% had discharge pneumonia + positive initial imaging but lacked an initial diagnosis.</li> <li>Uncertainty commonly documented (58% ED; 48% discharge).</li> <li>High uncertainty and discordance suggest diagnostic process gaps.</li> </ul>	<ul style="list-style-type: none"> <li>Nationwide cohort across 115 VA medical centers (2015–2022).</li> <li>NLP + diagnostic coding + antimicrobial treatment markers.</li> <li>Uncertainty frequency in notes.</li> </ul>	<ul style="list-style-type: none"> <li>Retrospective data cannot fully adjudicate “true” diagnosis without chart review gold standard.</li> <li>NLP/coding proxies may misclassify cases.</li> <li>Generalizability limited to VA acute care workflows.</li> </ul>

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US Veterans Affairs Hospitals. <i>Annals of Internal Medicine</i> , 177(9), 1179-1189.		Problem: Measuring discordance among initial diagnosis, imaging evidence, and discharge diagnosis for pneumonia.			
Kintzle, S., Alday, E., Sutherland, A., & Castro, C. A. (2024). Drivers of veterans' healthcare choices and experiences with Veterans Affairs and civilian healthcare. <i>Healthcare</i> , 12(18), Article 1852.	Evidence level: 3.  Quality rating: High.	HSO: VA and non-VA healthcare settings.  Research domain: Patient experience; decision-making; access barriers.  Problem: Identifying factors that drive veterans' care setting choices and how system experiences shape utilization.	<ul style="list-style-type: none"> <li>• VA users cited cost, quality, and ease as reasons for use.</li> <li>• Non-VA users cited eligibility issues, bureaucracy, poor continuity, and negative perceptions as reasons for nonuse.</li> <li>• Even VA users reported red tape, self-advocacy burden, and gender-specific care gaps.</li> </ul>	<ul style="list-style-type: none"> <li>• Focus groups (n=59).</li> <li>• Thematic analysis of experience/choice drivers.</li> </ul>	<ul style="list-style-type: none"> <li>• Focus group composition may shape responses (dominant voices).</li> <li>• Not designed to estimate prevalence of each barrier.</li> <li>• Findings may vary across regions and veteran subgroups.</li> </ul>
Koenig, S., Morcos, G., Gopinath, R., Wang, K., Henn 3rd, F., & Leong, N. L. (2023). Is MRI overutilized for evaluation of knee pain in veterans?. <i>The Journal of Knee Surgery</i> , 36(03), 305-309. <a href="https://doi.org/10.1055/s-0041-1733880">https://doi.org/10.1055/s-0041-1733880</a>	Evidence level: 3  Quality rating: High	HSO: Veterans Health Administration  Research domain: Diagnostic imaging, resource utilization  Problem: Retrospective chart review examining the frequency of inappropriate MRI scans performed at one VA Medical Center, with implications for diagnostic wait times and resource efficiency.	<ul style="list-style-type: none"> <li>• 304 cases were reviewed. • 36.8% (112) of the MRIs were inappropriate.</li> <li>• Orthopedists ordered 33 of them; other providers ordered the other 79.</li> <li>• Obtaining a knee MRI took an average of 29 days, which is consistent with observed delays in veterans' access to care nationwide.</li> </ul>	<ul style="list-style-type: none"> <li>• Retrospective chart review of all knee MRIs ordered over a 6-month period.</li> <li>• Used the mPower radiology analytics platform to search for all knee MRIs performed at one VA medical center.</li> <li>• Specialty of ordering provider categorized into orthopedists and non-orthopedic providers (primary care, other specialists, nurse practitioners, physician assistants).</li> </ul>	<ul style="list-style-type: none"> <li>• MRI is being overutilized to assess knee pain and is an inefficient utilization of resources.</li> <li>• 25 of the 33 ordered by orthopedists were ordered by retired or nonsurgical physicians.</li> <li>• Ordering inappropriate MRIs delayed care by 29.2 days on average.</li> <li>• Single-site study limits generalizability.</li> <li>• Future research could expand scope to more facilities to understand whether the</li> </ul>

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					problem is localized or widespread.
<p>Lee, N. S., Keddem, S., Sorrentino, A. E., Jenkins, K. A., &amp; Long, J. A. (2024). Health equity in the Veterans Health Administration from veterans' perspectives by race and sex. <i>JAMA Network Open</i>, 7(2), e2356600. <a href="https://doi.org/10.1001/jama-networkopen.2023.56600">https://doi.org/10.1001/jama-networkopen.2023.56600</a></p>	<p>Evidence level: 3 Quality rating: Moderate</p>	<p>HSO: VHA  Research domain: Health equity, patient experience  Problem: Qualitative study guided by critical race theory examining how perceptions of veterans' health care and recommendations for change differ by race and sex</p>	<ul style="list-style-type: none"> <li>• Positive items salient across race and sex included "good medical care" and telehealth as a "great option."</li> <li>• Salient negative items were "long waits," "delays in getting care," "traffic challenges," and "stress, anxiety, and fear."</li> <li>• "Impersonal and cursory" telehealth experiences and the need for "more personal and attentive" care</li> </ul>	<ul style="list-style-type: none"> <li>• Conducted a qualitative study of veterans aggregated by race and gender.</li> <li>• Used a semiquantitative technique called freelist to compare themes in 49 participants' experiences with healthcare for chronic hypertension.</li> <li>• The Smith salience index, which measures the frequency and rank of each word or phrase, was calculated for each group.</li> </ul>	<ul style="list-style-type: none"> <li>• Disparities in access to quality care were observed among veterans from various demographic groups, including access to diagnostic testing for chronic diseases.</li> <li>• Findings are consistent with recent reports that 29% of American veterans have delays in care compared to 17.2% of civilians.</li> <li>• Future research and interventions could focus on identifying differences across broader categories within and beyond race and sex.</li> </ul>
<p>Mills, P., Louis, R. P., &amp; Yackel, E. (2023). Delays in care during the COVID-19 pandemic in the Veterans Health Administration. <i>The Journal for Healthcare Quality</i>, 45(4), 242–253. <a href="https://doi.org/10.1097/JHQ.0000000000000383">https://doi.org/10.1097/JHQ.0000000000000383</a></p>	<p>Evidence level: 3 Quality rating: High</p>	<p>HSO: Veterans Affairs  <u>Research domain:</u> Quality improvement; Risk management; Patient safety  <u>Problem:</u> Analyzing patient safety reports to identify types, causes, and impacts of care delays in the VHA during an 11-month period including COVID-19</p>	<ul style="list-style-type: none"> <li>• Laboratory result delays accounted for 33.78% (n=50) of all care delays, representing the largest single category of diagnostic-related delays that led to downstream care impacts</li> <li>• In 40% (n=20) of laboratory delays, secondary delays were identified, including delays in cardiac procedures, surgery starts, and level of care transfers</li> <li>• Root causes of laboratory delays included staff forgetting, losing, or</li> </ul>	<ul style="list-style-type: none"> <li>• Retrospective descriptive analysis of 200 randomly selected cases from 897 total COVID-19 patient safety events related to delays</li> <li>• Cases coded by delay type, harm level (0-4 scale), location, hours delayed, and causative factors using VHA Joint Patient Safety Event Reporting System database</li> </ul>	<ul style="list-style-type: none"> <li>• VHA JPSR system relies on voluntary self-reporting of adverse events; authors acknowledged likely underreporting of actual incidents.</li> <li>• Reports were deidentified, preventing demographic analysis of affected patient populations.</li> <li>• Study period coincided with COVID-19 pandemic,</li> </ul>

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		pandemic months, with specific focus on how delays in laboratory results and appropriate care levels contributed to patient harm and downstream treatment delays.	<p>misplacing lab specimens, poor communication between staff, and policy confusion about COVID-19 testing protocols.</p> <ul style="list-style-type: none"> <li>Delays in obtaining appropriate level of care (23 cases) averaged 72.46 hours, primarily due to communication problems and misunderstanding of COVID-19 rules.</li> <li>The study identified systematic patterns where diagnostic procedure delays created cascading effects on treatment timing and patient safety outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Interrater reliability testing achieved kappa coefficient of 0.92 between authors.</li> <li>Descriptive statistics conducted on delay categories, average delay times, and harm outcomes.</li> </ul>	<p>creating potentially atypical operational conditions that may limit generalizability to normal VA operations.</p> <ul style="list-style-type: none"> <li>Limited to VHA system serving veterans, so results may not be generalizable to other healthcare populations or systems.</li> </ul>
<p>Moldestad, M., Stryczek, K. C., Haverhals, L., Kenney, R., Lee, M., Ball, S., &amp; Young, J. (2021). Competing demands: scheduling challenges in being veteran-centric in the setting of health system initiatives to improve access. <i>Military Medicine</i>, 186(11-12), e1233-e1240.</p>	<p>Evidence level: 3.</p> <p>Quality rating: Moderate-High.</p>	<p>HSO: Veterans Health Administration. Research domain: Implementation science; access improvement; patient-centered scheduling. Problem: Identifying strategies, barriers, and facilitators to implementing ChooseVA to improve access while staying veteran-centered.</p>	<ul style="list-style-type: none"> <li>Sites reported culturally sensitive, mission-driven approaches to scheduling veterans.</li> <li>Barriers included no-shows, late arrivals, performance metric pressure, and engagement challenges.</li> <li>Operational constraints contributed to access friction even when patient-centered intent was present.</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative semistructured interviews and focus groups.</li> <li>Thematic analysis of 217 interviews across services (PC, specialty, mental health).</li> </ul>	<ul style="list-style-type: none"> <li>Findings may be context-specific to participating sites and roles.</li> <li>Self-report may bias toward socially desirable descriptions of veteran-centered care.</li> <li>Does not quantify magnitude of access improvement or wait-time change.</li> </ul>
<p>Nevedal, A. L., Widerquist, M. A. O., Reardon, C. M., Arasim, M., Jackson, G. L., White, B., &amp; Damschroder, L. J. (2024). Understanding pathways from implementation to</p>	<p>Evidence level: 3.</p> <p>Quality rating: High.</p>	<p>HSO: VHA and community emergency departments.</p> <p>Research domain: Care navigation; coverage literacy;</p>	<ul style="list-style-type: none"> <li>Veterans lacked clear benefits/eligibility information.</li> <li>Veterans needed billing assistance to avoid financial hardship and delays.</li> <li>Veterans wanted clearer communication on policy changes and coverage rules.</li> </ul>	<ul style="list-style-type: none"> <li>Semistructured interviews (n=50).</li> <li>Directed content analysis of transcripts.</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative design limits generalizability.</li> <li>Recall bias likely, especially around billing/coverage events.</li> </ul>

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sustainment: A longitudinal, mixed methods analysis of promising practices implemented in the Veterans Health Administration. <i>Implementation Science</i> , 19(1), 34.		coordination/communication  Problem: Understanding veterans' experiences using VHA-paid community emergency care and barriers that may delay care.			<ul style="list-style-type: none"> <li>• Does not measure wait times directly, only perceived barriers and consequences.</li> </ul>
Panaite, V., Cohen, N. J., Luther, S. L., Finch, D. K., Alman, A., Schultz, S. K., & Pfeiffer, P. N. (2024). Mental health treatment utilization patterns among 108,457 Afghanistan and Iraq veterans with depression. <i>Psychological Services</i> , 21(3), 665.	Evidence level: 3.  Quality rating: High.	HSO: Veterans Health Administration.  Research domain: Behavioral health access; timeliness; informatics/EHR risk prediction.  Problem: Identifying EHR factors associated with no treatment initiation and delayed initiation after depression diagnosis.	<ul style="list-style-type: none"> <li>• VA disability benefits were the strongest predictor of initiating treatment.</li> <li>• Male veterans without disability benefits and those with mild depression were less likely to initiate.</li> <li>• PTSD and fewer comorbidities were linked to delayed initiation among initiators.</li> <li>• Prior MH treatment history and positive screens were linked to faster initiation.</li> </ul>	<ul style="list-style-type: none"> <li>• VA Corporate Data Warehouse.</li> <li>• Cohort: 127,423 post-9/11 Afghanistan/Iraq veterans, 2001–2021 first depression dx.</li> <li>• Retrospective cohort with uni-/multivariate modeling.</li> </ul>	<ul style="list-style-type: none"> <li>• EHR data cannot capture motivation, stigma, transportation, or trust.</li> <li>• Documentation variability may bias predictors.</li> <li>• Observational modeling risks omitted-variable bias.</li> </ul>
Politi, R. E., Mills, P. D., Zubkoff, L., & Neily, J. (2022). Delays in diagnosis, treatment, and surgery: Root causes, actions taken, and recommendations for healthcare improvement. <i>Journal of Patient Safety</i> , 18(7), e1061–e1066. <a href="https://doi.org/10.1097/PTS.0000000000001016">https://doi.org/10.1097/PTS.0000000000001016</a>	Evidence level: 3  Quality rating: High	HSO: Veterans Affairs  <u>Research domain:</u> Quality improvement; Risk management; Patient safety.  <u>Problem:</u> Reviewing root cause analysis (RCA) reports from VA hospitals (October 2016-September 2019) to identify root	<ul style="list-style-type: none"> <li>• During the 3-year study period, 206 RCAs were identified; 163 were analyzed that were specific to delays in diagnosis, treatment, and surgery</li> <li>• The reports identified 24 delays in diagnosis, 117 delays in treatment, and 22 delays in surgery, with delays occurring most often in outpatient settings (41.7%)</li> <li>• Of the 24 delays in diagnosis, 10 (41.7%) resulted from delays in diagnostic procedures, representing a</li> </ul>	<ul style="list-style-type: none"> <li>• Retrospective descriptive analysis of RCA reports from VHA hospitals using Primary Analysis and Categorization (PAC) codes for "delay".</li> <li>• Interrater reliability testing achieved κ coefficient of 0.81 between two independent reviewers.</li> <li>• Elements coded by consensus and analyzed using descriptive statistics,</li> </ul>	<ul style="list-style-type: none"> <li>• RCA reporting occurs in a voluntary system, so all delay events may not be captured in the database</li> <li>• Authors were unable to examine facility characteristics such as complexity, presence of patient safety expertise, or staffing issues that may influence delay patterns.</li> <li>• Study limited to VHA RCA database, so findings may not</li> </ul>

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		causes and contributing factors of delays in diagnosis, treatment, and surgery, with specific emphasis on diagnostic procedure delays that contribute to downstream care delays and adverse patient outcomes.	<p>significant contributor to downstream care delays</p> <ul style="list-style-type: none"> <li>• Most common root causes across all delay types were lack of standardized processes for procedures (20% for treatment delays), policies/procedures not followed correctly (9-18% across delay types), and poor communication between departments (10% for treatment delays).</li> <li>• For diagnostic delays specifically, root causes were related to rules, policies, and procedure processes, with lack of standardized processes and inadequate communication being primary factors.</li> </ul>	<p>including delay type, location, and contributory factors</p> <ul style="list-style-type: none"> <li>• Data categorized into specific delay types: diagnostic procedures, treatment delays, and surgical delays with frequency analysis.</li> </ul>	<p>be generalizable to non-VA healthcare organizations or systems.</p> <ul style="list-style-type: none"> <li>• RCA reports focus on events that resulted in severe/catastrophic harm or have potential for severe harm, so may not represent overall rate of delay events in routine care.</li> </ul>
<p>Pounds, L. C., Hart, A., Brahmhatt, R. R., &amp; Sideman, M. J. (2022). Staffing shortages in a veterans affairs vascular lab results in decreased studies performed with resultant loss of revenue and increased cost. <i>Journal of the American College of Surgeons</i>, 235(5), S106-S107.  <a href="https://doi.org/10.1097/01.XCS.0000896664.56282.7a">https://doi.org/10.1097/01.XCS.0000896664.56282.7a</a></p>	<p>Evidence level: 3  Quality rating: Moderate</p>	<p>HSO: Veterans Health Administration</p> <p>Research domain: Staffing, diagnostic services</p> <p>Problem: Quantitative descriptive study examining how staffing trends impact vascular lab services at one VA, with implications for diagnostic testing delays and veterans' access to post-diagnostic care.</p>	<ul style="list-style-type: none"> <li>• The lab was fully staffed for 2 years and completed 5809 studies per year on average.</li> <li>• In the remaining 4 years, the lab had an average decrease in services of 23.7% (range 7.6% to 31.0%).</li> <li>• The six-year estimated total cost in lost revenue was \$1.1 million US Dollars, which was determined to be well above the cost to increase the salary or pay grade of full time employees.</li> </ul>	<ul style="list-style-type: none"> <li>• Conducted a quantitative descriptive study.</li> <li>• Data on vascular labs studies performed at one VA were collected for the 2015-2021 time period.</li> <li>• The total studies performed were counted, and the lab staffing calendars were reviewed to compare when it was fully or understaffed.</li> </ul>	<ul style="list-style-type: none"> <li>• The authors found staffing shortages in VA vascular laboratory reduces the number of testing performed by 23%, delaying veterans' access to post-diagnostic care.</li> <li>• The findings suggest a desired ideal state of an increase in staffing by 58%.</li> <li>• The hiring practices of VHA negatively resulted in lost production and revenue.</li> <li>• Single-site study; future research can evaluate whether similar trends are present in other departments and diagnostic labs, allows for a</li> </ul>

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					wider view of issues affecting delayed diagnostic testing.
Rossi, M. M., Radunovich, H. L., & Parisi, M. A. (2024). Rural veteran perception of healthcare access in South Carolina and Florida: a qualitative study. <i>BMC Health Services Research</i> , 24(1), 826.	Evidence level: 3.  Quality rating: Moderate–High.	HSO: Rural veteran households interacting with VA and community care.  Research domain: Rural access; coordination; cultural competence; transportation.  Problem: Identifying access dimensions and perceived barriers for rural veterans and spouses.	<ul style="list-style-type: none"> <li>• Five access dimensions: proximity, communication, cultural competence, resources, transportation.</li> <li>• VA-related barriers: communication gaps, poor coordination with community providers, lack of cultural competence.</li> <li>• Trust-building depends heavily on communication quality across VA and community settings.</li> </ul>	<ul style="list-style-type: none"> <li>• Structured interviews (n=124 veterans/spouses).</li> <li>• Manual coding to themes/subthemes.</li> </ul>	<ul style="list-style-type: none"> <li>• Two-state rural sample limits transferability.</li> <li>• Self-report cannot quantify system contribution vs personal constraints.</li> <li>• Does not link perceptions to measured wait times.</li> </ul>
Scorsone, K. L., & Frank, J. W. (2024). Exploring veterans' experiences accessing chronic pain treatment in the VA community care network. <i>Journal of General Internal Medicine</i> , 39(16), 3190-3195. <a href="https://doi.org/10.1007/s11606-024-09023-y">https://doi.org/10.1007/s11606-024-09023-y</a>	Evidence level: 3  Quality rating: Moderate	HSO: Veterans Health Administration  Research domain: Community care, chronic pain management  Problem: Qualitative descriptive study examining the experiences of veterans receiving chronic pain treatment in the VA Community Care Network (CCN), including perceptions about barriers, facilitators, and benefits in	<ul style="list-style-type: none"> <li>• Veterans described challenges navigating the approval process and finding pain management providers approved by the VA in the CCN.</li> <li>• Veterans perceived that communication between the VA and community providers was challenged.</li> <li>• Once enrolled in the CCN, veterans valued the freedom to choose providers specializing in pain management within their local communities, improved and timely access to appointments, and the opportunity to explore a wider range of treatment options.</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative descriptive study using semistructured interviews.</li> <li>• 10 rural veterans receiving chronic pain management in the VA CCN completed the interviews.</li> <li>• Themes were identified using content analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Veterans described navigating the complex approval process as time-consuming for both veterans and CC providers, which lead to delays in accessing pain healthcare.</li> <li>• Veterans preferred obtaining care in the CCN after they could successfully navigate the administrative complexities with accessing providers.</li> <li>• The CCN improved wait times for pain management.</li> <li>• Small sample size (n=10).</li> <li>• Future research could evaluate providers' perceptions about</li> </ul>

Author, date, and title	Evidence level and quality rating	Focus: HSO type, Research Domain, and Specific Problem being addressed	Findings that help answer the review question(s)	Metrics and Measures if used	Source Limitations
		accessing chronic pain management			how to improve access to CCN care, and examine the actual timeliness, quality, or safety of care.
Stryczek, K. C., Honsberger, M., Ball, S. L., Barnard, J. G., Young, J. P., Felker, B., & Sayre, G. G. (2023). VA outreach is an essential area for improving veterans' health care accessibility. <i>Military Medicine</i> , 188(7-8), e2439-e2447. <a href="https://doi.org/10.1093/milmed/usad019">https://doi.org/10.1093/milmed/usad019</a>	Evidence level: 3  Quality rating: Moderate	HSO: Veterans Health Administration  Research domain: Quality improvement, access to care  Problem: Quality improvement evaluation examining why there is under-utilization of VA healthcare services, with focus on veteran awareness, enrollment barriers, and delayed access to care.	<ul style="list-style-type: none"> <li>• VHA staff and veteran respondents reported a lack of veteran awareness of eligibility for VHA services.</li> <li>• Veterans reported limited understanding of the range of services offered.</li> <li>• Veterans described this gap as contributing to delayed VHA enrollment and underutilized of VA health care benefits and services.</li> </ul>	<ul style="list-style-type: none"> <li>• Conducted a quality improvement evaluation using a multi-method qualitative methodology, including 81 focus groups and 127 semi-structured interviews with VHA providers and staff.</li> <li>• Conducted 48 telephone interviews with veterans.</li> <li>• Interviews and focus groups were transcribed and analyzed using deductive and inductive analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Both VHA staff and veterans agreed that missed opportunities exist for enrolling in VA healthcare services.</li> <li>• Lack of awareness or understanding of VHA benefits can result in delayed access to care.</li> <li>• Future research can explore what interventions and outreach may be effective in improving access to VA healthcare benefits.</li> <li>• Timing VHA outreach during or proximal to military separation could be a facilitator to access and utilization of VHA services.</li> </ul>
U.S. Government Accountability Office. (2025, May 5). Priority open recommendations: Department of Veterans Affairs (GAO-25-108071). <a href="https://www.gao.gov/products/gao-25-108071">https://www.gao.gov/products/gao-25-108071</a>	Evidence level: 5 (Expert opinion, government oversight report)  Quality rating: High	HSO: Veterans Health Administration  Research domain: General management, quality improvement.  Problem: GAO priority recommendations letter identifying critical	<ul style="list-style-type: none"> <li>• GAO identifies improving timely access to Veterans Community Care Program as highest priority issue requiring Secretary-level attention.</li> <li>• Key findings relevant to wait time reduction: <ul style="list-style-type: none"> <li>○ VHA lacks defined timeliness standard for when veterans should receive community care, making it</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• GAO oversight methodology: Systematic review of VA operations and performance across multiple domains.</li> <li>• Priority recommendation framework based on potential for significant operational improvement, large dollar savings, elimination of mismanagement, or progress</li> </ul>	<ul style="list-style-type: none"> <li>• Methodological limitations: Government oversight document rather than empirical research - represents expert assessment and policy recommendations rather than evidence-based intervention effectiveness.</li> <li>• Scope limitations: Focuses primarily on community care</li> </ul>

Author, date, and title	Evidence level and quality rating	Focus: HSO type, Research Domain, and Specific Problem being addressed	Findings that help answer the review question(s)	Metrics and Measures if used	Source Limitations
		<p>operational challenges requiring senior leadership attention. Specifically addresses "Improving timely access to the Veterans Community Care Program" as top priority area, with direct relevance to healthcare wait time reduction strategies and access management within VA system.</p>	<p>impossible to measure performance against access goals</p> <ul style="list-style-type: none"> <li>○ Current scheduling policy insufficient; while VHA monitors some time frames for appointment scheduling steps, no overall performance measure exists for end-to-end care delivery.</li> <li>○ Misaligned monitoring metrics prevent identification of high/low-performing facilities and implementation of corrective actions</li> <li>○ Recommendation emphasis on establishing achievable wait-time goals, designing appointment scheduling processes with defined timeframes, and aligning monitoring metrics with policy requirements. GAO notes this represents challenge since 2012, with VHA still unable to ensure veterans receive timely access to care.</li> <li>● Document identifies 29 total priority recommendations across five critical areas, indicating systemic operational challenges requiring sustained leadership focus and improvement strategies.</li> </ul>	<p>toward high-risk issue resolution.</p> <ul style="list-style-type: none"> <li>● Specific metrics referenced: <ul style="list-style-type: none"> <li>○ Wait time measurements for community care appointments, appointment scheduling timeframes, network adequacy standards under community care contracts.</li> <li>○ Performance measurement gaps identified: No defined timeliness standard for community care delivery, inconsistent monitoring across VHA medical facilities.</li> <li>○ Recommendation tracking: 29 priority recommendations out of 227 total open recommendations, with 84% overall implementation rate for VA.</li> </ul> </li> <li>● Publication represents annual senior leadership communication requiring formal agency response and implementation timeline</li> </ul>	<p>program rather than direct VA diagnostic services, though access principles apply broadly.</p> <ul style="list-style-type: none"> <li>● Community care recommendations may have limited direct applicability to internal VA diagnostic wait time reduction strategies.</li> <li>● Implementation uncertainty: Recommendations represent identified needs rather than proven solutions; effectiveness depends on successful implementation and sustained organizational commitment.</li> <li>● Generalizability concerns: Specific to VA healthcare system organizational structure and community care delivery model.</li> <li>● Temporal limitations: Represents status as of 2025; rapid policy changes in healthcare delivery may affect continued relevance.</li> <li>● Accountability focus: Emphasizes oversight and compliance rather than operational innovation or best practices for wait time reduction.</li> <li>● Document reflects persistent nature of access challenges</li> </ul>

Author, date, and title	Evidence level and quality rating	Focus: HSO type, Research Domain, and Specific Problem being addressed	Findings that help answer the review question(s)	Metrics and Measures if used	Source Limitations
					despite years of attention, suggesting complex underlying systemic issues requiring comprehensive solutions beyond individual recommendations
<p>Department of Veterans Affairs, Veterans Health Administration. (2023, July 25). VHA directive 1234: Radiology outpatient scheduling and orders management.</p>	<p>Evidence level: 5 Quality rating: High</p> <p><b>Evidence level and quality rating</b></p>	<p><u>HSO:</u> Veterans Health Administration <b>Focus: HSO type, research domain, and specific problem being addressed</b></p> <p><u>Problem:</u> VHA directive establishing standardized policy for radiology outpatient clinic appointment scheduling and orders management. Addresses specific operational strategies to reduce diagnostic imaging wait times and improve scheduling efficiency across VA medical facilities.</p>	<p><b>Findings that help answer the review question(s)</b></p> <ul style="list-style-type: none"> <li>• Directive directly addresses diagnostic wait time reduction <ul style="list-style-type: none"> <li>○ Establishes specific wait time targets: <ul style="list-style-type: none"> <li>○ Routine radiology appointments scheduled ≤28 calendar days from Patient Indicated Date (PID),</li> <li>○ Urgent imaging exams ≤14 days from PID.</li> </ul> </li> </ul> </li> <li>• Key operational interventions include: <ul style="list-style-type: none"> <li>○ Standardized scheduling processes with mandatory contact within 7 days of order entry</li> <li>○ Orders management protocols for "pending," "hold," and "scheduled" orders with specific timeframes</li> <li>○ Required scheduler training and competency assessments</li> <li>○ Mandatory scheduling audits and cancellation monitoring</li> <li>○ Resource allocation guidelines including staffing recommendations and equipment planning</li> <li>○ Technology optimization through EHR scheduling parameters and clinic profile management</li> </ul> </li> </ul>	<p><b>Metrics and Measures if used</b></p> <ul style="list-style-type: none"> <li>• Policy directive implementation methodology: 6-month implementation timeline for system-wide compliance across all VA medical facilities.</li> <li>• Performance standards: 90% of routine procedures within 30 calendar days, 90% of urgent procedures within 14 calendar days.</li> <li>• Monitoring requirements: Monthly outpatient procedure wait time tracking, quarterly reporting to facility leadership and VISN Diagnostics ICC.</li> <li>• Quality measures: Scheduling audit protocols, cancellation rate monitoring, incomplete exam management tracking.</li> <li>• Compliance oversight: VISN-level monitoring with corrective action plans for non-compliant facilities.</li> </ul>	<p><b>Source Limitations</b></p> <ul style="list-style-type: none"> <li>• Policy directive rather than empirical research - effectiveness not yet demonstrated through outcome studies.</li> <li>• 6-month implementation timeline may be insufficient for complex system-wide changes.</li> <li>• Directive relies heavily on existing staffing and technology infrastructure without addressing resource constraints.</li> <li>• Performance targets (90% within timeframes) established without evidence base for optimal benchmarks.</li> <li>• Limited guidance on handling capacity constraints when demand exceeds available resources.</li> <li>• Focuses primarily on scheduling processes rather than addressing upstream factors affecting diagnostic demand.</li> </ul>

Author, date, and title	Evidence level and quality rating	Focus: HSO type, Research Domain, and Specific Problem being addressed	Findings that help answer the review question(s)	Metrics and Measures if used	Source Limitations
			<ul style="list-style-type: none"> <li>○ Performance monitoring with quarterly reporting requirements</li> <li>○ Escalation procedures when resources insufficient to meet access standards.</li> <li>● Directive exempts radiology from general consult scheduling requirements, recognizing unique operational needs of diagnostic imaging services.</li> </ul>	<ul style="list-style-type: none"> <li>● Staff competency metrics: Annual scheduler assessment requirements, standardized training completion rates.</li> <li>● Technology metrics: EHR scheduling parameter optimization, clinic profile accuracy reviews.</li> </ul>	<ul style="list-style-type: none"> <li>● Does not address community care coordination or referral management optimization.</li> <li>● Heavy reliance on manual processes and staff compliance without automated system safeguards.</li> <li>● No cost-effectiveness analysis or resource impact assessment provided.</li> <li>● Specific to VA healthcare system organizational structure and may not be generalizable to other healthcare delivery models.</li> </ul>

## Appendix D: DHA Thematic Analysis Results

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
<p>Bolton, R. E., Mohr, D. C., Charns, M., Herbst, A. N., &amp; Bokhour, B. G. (2023). Creating whole person health care systems: Understanding employee perceptions of vas whole health cultural transformation. <i>Journal of Integrative and Complementary Medicine</i>, 29(12), 813-821.</p>	<p><b>Initial Code: Lung cancer screening coordination challenges</b></p> <ul style="list-style-type: none"> <li>• VA centers lacked clear processes for initiating LCS referrals</li> <li>• No standardized tracking systems for LCS referrals</li> <li>• Gaps in communication between VA and non-VA settings</li> <li>• Data transfer delays affecting downstream evaluation</li> </ul> <p><b>Initial Code: Communication barriers</b></p> <ul style="list-style-type: none"> <li>• Information gaps between primary care and specialty providers</li> <li>• Lack of consistent processes to obtain results</li> <li>• Fragmented care across VA and community settings</li> <li>• Delays in evaluating potentially cancerous nodules post-screening</li> </ul> <p><b>Initial Code: Process deficiencies</b></p> <ul style="list-style-type: none"> <li>• Unclear referral initiation protocols</li> <li>• Inconsistent follow-up procedures</li> <li>• Limited coordination between LCS program coordinators and pulmonologists</li> <li>• Primary care providers uncertain about referral pathways</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Process Standardization → Lack of clear referral initiation processes, inconsistent tracking systems</li> <li>• Information Management → Data transfer gaps, delayed results communication</li> <li>• System Integration → Fragmented coordination between VA and non-VA healthcare settings</li> </ul> <p><b>Communication Factors:</b></p> <ul style="list-style-type: none"> <li>• Provider Communication → Gaps between primary care providers, coordinators, directors, and pulmonologists</li> <li>• Cross-System Communication → Challenges transferring information between VA and community care</li> <li>• Results Management → Delays in obtaining and communicating diagnostic findings</li> </ul> <p><b>Care Coordination Factors:</b></p> <ul style="list-style-type: none"> <li>• Referral Management → Unclear processes for initiating and tracking LCS referrals</li> <li>• Follow-up Protocols → Inconsistent procedures for post-screening evaluation</li> <li>• Role Clarity → Uncertainty among providers about responsibilities in referral process</li> </ul> <p><b>Patient Safety Implications:</b></p> <ul style="list-style-type: none"> <li>• Diagnostic Delays → Delayed evaluation of potentially cancerous nodules</li> <li>• Care Fragmentation → Disjointed care leading to gaps in follow-up</li> <li>• Quality Concerns → Compromised care for veterans with lung cancer due to coordination failures</li> </ul>
<p>Feyman, Y., Asfaw, D. A., &amp; Griffith, K. N. (2022). Geographic variation in appointment wait times for US military veterans. <i>JAMA network Open</i>, 5(8), Article 2228783.</p>	<p><b>Initial Code: Wait time disparities by race/ethnicity</b></p> <ul style="list-style-type: none"> <li>• Disparities in wait times increased significantly from pre-COVID-19 to COVID-19 period for Black and Hispanic veterans</li> <li>• White veterans had shorter wait times compared to Black and Hispanic veterans</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Facility Variation → Significant differences in wait time ratios across 21 VA facilities</li> <li>• Resource Distribution → Uneven access to community care across demographic groups</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
<p><a href="https://doi.org/10.1001/jamanetworkopen.2022.28783">https://doi.org/10.1001/jamanetworkopen.2022.28783</a></p>	<ul style="list-style-type: none"> <li>• Mean wait time ratios significantly differed among the 21 facilities examined</li> <li>• Racial/ethnic disparities in access persisted across multiple facility types</li> </ul> <p><b>Initial Code: Community care utilization patterns</b></p> <ul style="list-style-type: none"> <li>• White veterans disproportionately use community care (CC) compared to Black veterans and other races/ethnicities</li> <li>• CC appointments had higher wait times overall</li> <li>• Differential access to CC as contributing factor to disparities</li> <li>• Variation in CC utilization across demographic groups</li> </ul> <p><b>Initial Code: Pandemic impact on access</b></p> <ul style="list-style-type: none"> <li>• COVID-19 period exacerbated existing wait time disparities</li> <li>• Access barriers increased for minority veterans during pandemic</li> <li>• Facility-level variation in pandemic response affected wait times</li> <li>• Pre-existing inequities amplified by pandemic conditions</li> </ul>	<ul style="list-style-type: none"> <li>• System Response → Pandemic conditions exposed and amplified existing disparities</li> </ul> <p><b>Health Equity Factors:</b></p> <ul style="list-style-type: none"> <li>• Racial Disparities → Black and Hispanic veterans experienced longer wait times than White veterans</li> <li>• Access Barriers → Differential barriers to care based on race/ethnicity</li> <li>• Community Care Access → White veterans more likely to utilize CC options, contributing to access inequities</li> </ul> <p><b>Environmental, Contextual Factors:</b></p> <ul style="list-style-type: none"> <li>• Pandemic Impact → COVID-19 period increased wait time disparities for minority veterans</li> <li>• Temporal Patterns → Disparities worsened from pre-COVID to COVID period</li> <li>• Geographic Variation → Facility-level differences in access and wait times</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Research Needs → Examine veteran care perceptions to complement administrative data findings</li> <li>• Monitoring Requirements → Track wait time trends by demographic groups across facilities</li> <li>• Intervention Development → Address sources of differential access to VA and community care</li> </ul>
<p>Feyman, Y., Legler, A., &amp; Griffith, K. N. (2021). Appointment wait time data for primary &amp; specialty care in Veterans Health Administration facilities vs. community medical centers. <i>Data in Brief</i>, 36, Article 107134. <a href="https://doi.org/10.1016/j.dib.2021.107134">https://doi.org/10.1016/j.dib.2021.107134</a></p>	<p><b>Initial Code: VHA Wait Time Data Characteristics</b></p> <ul style="list-style-type: none"> <li>• 38+ million appointment wait times from January 2014-December 2020</li> <li>• Both VHA facilities and community medical centers included</li> <li>• Wait times stratified by primary/specialty care type</li> <li>• Largest national dataset of appointment wait times publicly available</li> <li>• Three data levels: referral-level, facility-level, county-level</li> </ul> <p><b>Initial Code: Data Collection and Methodology</b></p> <ul style="list-style-type: none"> <li>• VHA Corporate Data Warehouse (CDW) as primary source</li> <li>• SQL queries used for data extraction</li> </ul>	<p><b>Data Infrastructure and Quality:</b></p> <ul style="list-style-type: none"> <li>• Administrative Data Systems → Corporate Data Warehouse capabilities, SQL-based extraction, stop code classification systems</li> <li>• Data Accuracy Challenges → Misclassification of care settings, variable reporting lags, incomplete community care tracking</li> <li>• Methodological Standardization → Consistent data collection protocols, standardized wait time calculations, tiered coding approaches</li> </ul> <p><b>Healthcare Access Measurement:</b></p> <ul style="list-style-type: none"> <li>• Wait Time Metrics → Multiple measurement approaches (approval, scheduling, completion, total), specialty-specific variations, geographic stratification</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
	<ul style="list-style-type: none"> <li>• Four wait time measures calculated (Days to approved, days to scheduled, days to completed, total wait time)</li> <li>• Stop codes (3-digit identifiers) used to classify care types</li> </ul> <p><b>Initial Code: Community Care Evolution</b></p> <ul style="list-style-type: none"> <li>• 2014: Veterans Choice Program (VCP) establishment post-scandal</li> <li>• 2015: Expanded eligibility criteria for community care</li> <li>• 2018: MISSION Act further expansion</li> <li>• Pre-2018: 50-75% of community consultations misclassified as VHA</li> <li>• 2018+: Better identification through stop code 669</li> </ul> <p><b>Initial Code: Data Quality and Limitations</b></p> <ul style="list-style-type: none"> <li>• Misclassification issues before May 2018</li> <li>• Variable lags in appointment information appearing in CDW</li> <li>• E-consultations excluded (completion times ≤0.2 days)</li> <li>• Community care appointments may have months-long data lags</li> </ul> <p><b>Initial Code: Comparative Performance Findings</b></p> <ul style="list-style-type: none"> <li>• VHA generally outperformed community centers in mean wait times</li> <li>• Positive correlation between VHA and community wait times</li> <li>• Geographic variation in wait time patterns</li> <li>• Specialty-specific variations documented</li> </ul>	<ul style="list-style-type: none"> <li>• Care Setting Comparisons → VHA vs. community performance, correlation patterns, access disparities</li> <li>• Volume and Utilization → Large-scale appointment data, referral patterns, care type distributions</li> </ul> <p><b>Policy Implementation Tracking:</b></p> <ul style="list-style-type: none"> <li>• Legislative Impact → Veterans Choice Program effects, MISSION Act implementation, eligibility expansion consequences</li> <li>• System Evolution → Community care integration, reporting improvements, administrative adaptations</li> <li>• Performance Monitoring → Public transparency initiatives, wait time surveillance, access measurement standardization</li> </ul> <p><b>Research Infrastructure:</b></p> <ul style="list-style-type: none"> <li>• Public Data Availability → Unprecedented healthcare wait time transparency, research dataset creation, methodological documentation</li> <li>• Analytical Capabilities → Multi-level analysis options, longitudinal tracking, geographic analysis</li> <li>• Evidence Base Development → Healthcare access research foundation, policy evaluation tools, system performance benchmarking</li> </ul>
<p>Friedl, S. L., Jella, T. K., Cwalina, T. B., &amp; Vallier, H. A. (2023). Appointment wait times for surgical care in the Veterans Health Administration and Community Care Program. <i>Surgery</i>, 174(6), 1371-1375. <a href="https://doi.org/10.1016/j.surg.2023.08.017">https://doi.org/10.1016/j.surg.2023.08.017</a></p>	<p><b>Initial Code: Wait time comparisons VA vs. Community Care</b></p> <ul style="list-style-type: none"> <li>• Mean wait time for CC surgical consults for cardiology was 23.1 days</li> <li>• Mean wait time for VA surgical consults was 30.0 days</li> <li>• Greatest difference observed in plastic surgery (CC 15.8 days longer than VA)</li> <li>• Wait times varied largely by specialty across both systems</li> </ul> <p><b>Initial Code: Diagnostic procedural delays</b></p> <ul style="list-style-type: none"> <li>• Delays in diagnostic procedures identified as contributing factor to surgical wait times</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• System Comparison → VA vs. Community Care wait time differences vary by specialty</li> <li>• Resource Allocation → Specialty-level capacity affects wait times differently across systems</li> <li>• Network Design → CC program not uniformly faster than VA for all surgical services</li> </ul> <p><b>Access to Care Factors:</b></p> <ul style="list-style-type: none"> <li>• Surgical Access → 30.0 days average VA wait vs. 23.1 days CC for cardiology consults</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
	<ul style="list-style-type: none"> <li>• Diagnostic delays create downstream effects on surgical scheduling</li> <li>• Procedural bottlenecks affect overall access to surgical care</li> <li>• Pre-surgical diagnostic requirements extend total time to treatment</li> </ul> <p><b>Initial Code: Specialty-level variation</b></p> <ul style="list-style-type: none"> <li>• Wait times shorter for some specialties at VA, longer for others</li> <li>• CC not uniformly faster across all surgical specialties</li> <li>• Specialty-specific factors influence wait time differences</li> <li>• Need for targeted optimization based on specialty performance</li> </ul>	<ul style="list-style-type: none"> <li>• Specialty Variation → Plastic surgery CC appointments 15.8 days longer than VA on average</li> <li>• Diagnostic Bottlenecks → Pre-surgical diagnostic delays contribute to overall surgical wait times</li> </ul> <p><b>Process Factors:</b></p> <ul style="list-style-type: none"> <li>• Care Pathways → Diagnostic procedures as gatekeeping step before surgical consults</li> <li>• System Navigation → Veterans face different wait experiences depending on care setting</li> <li>• Scheduling Efficiency → Variation in how quickly consults convert to appointments across specialties</li> </ul> <p><b>Measurement Factors:</b></p> <ul style="list-style-type: none"> <li>• Data Source → VA Corporate Data Warehouse with 623,868 surgical consults in 2021</li> <li>• Analytical Approach → Descriptive statistics comparing wait times across systems and specialties</li> <li>• National Scope → Nationally representative database enabling system-wide comparisons</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Research Expansion → Include more specialties to understand phenomenon globally</li> <li>• Optimization Targets → Identify specialties where wait times can be improved in each system</li> <li>• Diagnostic Focus → Address diagnostic procedural delays as upstream contributor to surgical access</li> </ul>
<p>Govier, D. J., Hickok, A., Edwards, S. T., Weaver, F. M., Gordon, H., Niederhausen, M., &amp; Hynes, D. M. (2023). Early impact of VA MISSION Act implementation on primary care appointment wait time. <i>Journal of General Internal Medicine</i>, 38(4), 889–897.</p>	<p><b>Initial Code: MISSION Act Community Care Networks implementation outcomes</b></p> <ul style="list-style-type: none"> <li>• Overall unadjusted wait times increased by 35.7 days after CCN implementation</li> <li>• No significant difference between CCN and comparison appointment wait times after implementation</li> <li>• Both CCN and comparison facilities experienced sharp wait time increases</li> </ul>	<p><b>Policy Implementation Factors</b></p> <ul style="list-style-type: none"> <li>• Legislative Intent vs. Reality → MISSION Act designed to reduce wait times but resulted in increases</li> <li>• Network Adequacy Standards → Drive time and wait time standards not reflecting actual access</li> <li>• Demand Forecasting → Systematic underestimation of community care utilization growth</li> <li>• Regulatory Constraints → Limited ability to manage provider networks through rate negotiations</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
<p><a href="https://doi.org/10.1007/s11606-022-07800-1">https://doi.org/10.1007/s11606-022-07800-1</a></p>	<ul style="list-style-type: none"> <li>• Wait times exceeded VA's 28-day network adequacy standard across both groups</li> </ul> <p><b>Initial Code: Primary care appointment patterns</b></p> <ul style="list-style-type: none"> <li>• 13,720 CCN appointments vs. 40,638 comparison appointments analyzed</li> <li>• CCN appointments: 25.2% of total community primary care appointments</li> <li>• Pre-CCN period: 44.4 days average wait, Post-CCN period: 80.1 days average wait</li> <li>• Difference-in-differences approach showed similar patterns across both groups</li> </ul> <p><b>Initial Code: Geographic and demographic variations</b></p> <ul style="list-style-type: none"> <li>• Rural vs. urban differences in wait time increases varied by setting</li> <li>• Primary Care Health Professional Shortage Areas (HPSA) showed different patterns</li> <li>• Rural CCN appointments: no significant difference vs. comparison (+0.4 days)</li> <li>• Urban CCN appointments: additional 13.4 days increase beyond comparison group increases</li> </ul> <p><b>Initial Code: System capacity and demand issues</b></p> <ul style="list-style-type: none"> <li>• VA underestimated community care demand growth (projected 10%, actual 40-70% at some facilities)</li> <li>• Inadequate staffing models to meet referral volume increases</li> <li>• Network adequacy standards may not reflect actual provider availability</li> <li>• "Phantom" providers in directories who don't accept VA patients</li> </ul> <p><b>Initial Code: MISSION Act policy implementation challenges</b></p> <ul style="list-style-type: none"> <li>• Expanded provider networks did not translate to improved appointment availability</li> <li>• Network adequacy determinations based on drive time (30-60 minutes) and wait time (30 days)</li> </ul>	<p><b>Healthcare Market Dynamics</b></p> <ul style="list-style-type: none"> <li>• Provider Network Adequacy → "Phantom" providers in directories, inactive or unavailable providers</li> <li>• Community Provider Relations → Strained relationships, provider refusal to accept VA patients</li> <li>• Supply-Demand Imbalance → Expanded eligibility overwhelming limited provider capacity</li> <li>• Geographic Access Barriers → Rural area challenges in provider network expansion</li> </ul> <p><b>Organizational Capacity Factors</b></p> <ul style="list-style-type: none"> <li>• Demand Prediction → Inaccurate modeling of community care growth patterns</li> <li>• Staffing Models → Inadequate workforce planning for increased referral volume</li> <li>• Process Management → Challenges in authorization, scheduling, and claims processing</li> <li>• Information Systems → Provider directory accuracy and maintenance issues</li> </ul> <p><b>Primary Care Access Patterns:</b></p> <ul style="list-style-type: none"> <li>• Wait Time Trends → Systematic increases across both CCN and comparison sites</li> <li>• Geographic Variations → Rural vs. urban differences in access improvement</li> <li>• HPSA Impact → Different outcomes in health professional shortage areas</li> <li>• Service Setting → Primary care vs. specialty care network development priorities</li> </ul> <p><b>System-Level Outcomes:</b></p> <ul style="list-style-type: none"> <li>• Unintended Consequences → Policy intended to improve access resulted in longer waits</li> <li>• Network Expansion Limitations → Increased provider numbers didn't improve actual availability</li> <li>• Access Standard Compliance → Majority of appointments exceeded 28-day standard</li> </ul>

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	<ul style="list-style-type: none"> <li>Limited ability to regulate networks through rate negotiations (Medicare rate requirements)</li> <li>Strained relationships between VA facilities and community providers</li> </ul>	<ul style="list-style-type: none"> <li>Resource Allocation → Misalignment between projected and actual demand patterns</li> </ul>
<p>Jones, B. E., Chapman, A. B., Ying, J., Rutter, E. D., Nevers, M. R., Baker, A., &amp; Butler, J. M. (2024). Diagnostic discordance, uncertainty, and treatment ambiguity in community-acquired pneumonia: a national cohort study of 115 US Veterans Affairs Hospitals. <i>Annals of Internal Medicine</i>, 177(9), 1179-1189.</p>	<p><b>Initial Code: Diagnostic discordance</b></p> <ul style="list-style-type: none"> <li>Discordance between initial and final diagnoses for community-acquired pneumonia</li> <li>Diagnostic uncertainty present across 115 VA hospitals</li> <li>Treatment decisions made under conditions of ambiguity</li> <li>Variability in diagnostic accuracy across facilities</li> </ul> <p><b>Initial Code: Treatment ambiguity</b></p> <ul style="list-style-type: none"> <li>Unclear treatment pathways when diagnosis uncertain</li> <li>Delays in appropriate treatment due to diagnostic uncertainty</li> <li>Provider decision-making challenged by incomplete information</li> <li>Inconsistent approaches to managing diagnostic ambiguity</li> </ul> <p><b>Initial Code: System-wide patterns</b></p> <ul style="list-style-type: none"> <li>National cohort across 115 VA hospitals reveals widespread issues</li> <li>Diagnostic processes vary across facilities</li> <li>Standardization gaps in pneumonia diagnosis and treatment</li> <li>Quality implications of diagnostic discordance</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>System Variation → Diagnostic discordance patterns across 115 VA hospitals</li> <li>Process Standardization → Inconsistent approaches to pneumonia diagnosis and treatment</li> <li>Quality Assurance → Variability in diagnostic accuracy affecting care quality</li> </ul> <p><b>Clinical Decision-Making Factors:</b></p> <ul style="list-style-type: none"> <li>Diagnostic Uncertainty → Providers making treatment decisions with incomplete information</li> <li>Treatment Ambiguity → Unclear pathways when initial diagnosis uncertain</li> <li>Provider Behavior → Variable approaches to managing diagnostic ambiguity</li> </ul> <p><b>Patient Safety Implications:</b></p> <ul style="list-style-type: none"> <li>Diagnostic Delays → Uncertainty contributing to delayed appropriate treatment</li> <li>Care Quality → Discordance between initial and final diagnoses affecting outcomes</li> <li>Treatment Appropriateness → Ambiguity leading to potential over- or under-treatment</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>Standardization Needs → Protocols to reduce diagnostic discordance</li> <li>Decision Support → Tools to assist providers in managing diagnostic uncertainty</li> <li>Quality Improvement → Facility-level interventions to improve diagnostic accuracy</li> </ul>
<p>Kintzle, S., Alday, E., Sutherland, A., &amp; Castro, C. A. (2024). Drivers of veterans' healthcare choices and experiences with Veterans Affairs and</p>	<p><b>Initial Code: Healthcare choice drivers</b></p> <ul style="list-style-type: none"> <li>Veterans weigh multiple factors when choosing VA vs. civilian care</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>System Design → Veterans navigate between VA and civilian care options</li> <li>Access Pathways → Multiple factors drive healthcare setting choices</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
<p>civilian healthcare. <i>Healthcare</i>, 12(18), Article 1852.</p>	<ul style="list-style-type: none"> <li>• Convenience, wait times, and quality perceptions influence decisions</li> <li>• Prior experiences shape future healthcare choices</li> <li>• Trust in healthcare system affects utilization patterns</li> </ul> <p><b>Initial Code: VA care experiences</b></p> <ul style="list-style-type: none"> <li>• Veterans report both positive and negative experiences with VA care</li> <li>• Wait times cited as barrier to VA utilization</li> <li>• Quality of care perceptions vary among veterans</li> <li>• Relationship with VA providers influences satisfaction</li> </ul> <p><b>Initial Code: Civilian care experiences</b></p> <ul style="list-style-type: none"> <li>• Some veterans prefer civilian options for accessibility</li> <li>• Community care offers alternative when VA access limited</li> <li>• Coordination challenges between VA and civilian providers</li> <li>• Cost considerations factor into civilian care decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Care Coordination → Challenges integrating VA and civilian care experiences</li> </ul> <p><b>Patient Experience Factors:</b></p> <ul style="list-style-type: none"> <li>• Decision Drivers → Convenience, wait times, quality perceptions, prior experiences</li> <li>• Trust → Relationship with healthcare system influences utilization</li> <li>• Satisfaction → Variable experiences across VA and civilian settings</li> </ul> <p><b>Access to Care Factors:</b></p> <ul style="list-style-type: none"> <li>• Wait Times → Cited as barrier to VA utilization, driver of civilian care choice</li> <li>• Availability → Community care as alternative when VA access limited</li> <li>• Geographic Considerations → Convenience factors in healthcare decisions</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Patient-Centered Design → Understanding veteran preferences to improve system design</li> <li>• Access Improvement → Address wait time barriers to increase VA utilization</li> <li>• Coordination Enhancement → Improve integration between VA and civilian care</li> </ul>
<p>Koenig, S., Morcos, G., Gopinath, R., Wang, K., Henn 3rd, F., &amp; Leong, N. L. (2023). Is MRI overutilized for evaluation of knee pain in veterans?. <i>The Journal of Knee Surgery</i>, 36(03), 305-309. <a href="https://doi.org/10.1055/s-0041-1733880">https://doi.org/10.1055/s-0041-1733880</a></p>	<p><b>Initial Code: MRI utilization patterns</b></p> <ul style="list-style-type: none"> <li>• 304 knee MRI cases reviewed at one VA Medical Center</li> <li>• 36.8% (112) of knee MRIs were inappropriate</li> <li>• Orthopedists ordered 33 inappropriate MRIs; other providers ordered 79</li> <li>• MRI overutilization contributes to resource inefficiency</li> </ul> <p><b>Initial Code: Wait time impact</b></p> <ul style="list-style-type: none"> <li>• Obtaining a knee MRI took an average of 29 days</li> <li>• Inappropriate MRIs delayed care by 29.2 days on average</li> <li>• Wait times consistent with observed delays in veteran access nationwide</li> <li>• Unnecessary imaging contributes to system-wide backlogs</li> </ul> <p><b>Initial Code: Provider ordering patterns</b></p>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Resource Utilization → MRI overutilization leading to inefficient resource allocation</li> <li>• Capacity Impact → Inappropriate orders contributing to system backlogs and delays</li> <li>• Process Efficiency → 29-day average wait times for knee MRIs reflect access challenges</li> </ul> <p><b>Provider Factors:</b></p> <ul style="list-style-type: none"> <li>• Ordering Patterns → Non-orthopedic providers responsible for majority of inappropriate MRIs</li> <li>• Clinical Decision-Making → Variation in appropriateness criteria application across provider types</li> <li>• Education Needs → Gaps in understanding of appropriate MRI indications</li> </ul>

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	<ul style="list-style-type: none"> <li>• Non-orthopedic providers ordered majority of inappropriate MRIs</li> <li>• Primary care, nurse practitioners, physician assistants among non-orthopedic orderers</li> <li>• 25 of 33 orthopedist-ordered inappropriate MRIs from retired or nonsurgical physicians</li> <li>• Provider education needed on appropriate MRI utilization</li> </ul>	<p><b>Access to Care Factors:</b></p> <ul style="list-style-type: none"> <li>• Wait Time Impact → Inappropriate MRIs delayed care by 29.2 days on average</li> <li>• Downstream Effects → Unnecessary imaging creates bottlenecks for appropriate cases</li> <li>• National Context → Wait times consistent with VA-wide access delays</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Provider Education → Training on appropriate MRI utilization to reduce unnecessary orders</li> <li>• Scope Expansion → Research across more facilities to determine if problem localized or widespread</li> <li>• Decision Support → Tools to guide appropriate imaging ordering</li> </ul>
<p>Lee, N. S., Keddem, S., Sorrentino, A. E., Jenkins, K. A., &amp; Long, J. A. (2024). Health equity in the Veterans Health Administration from veterans' perspectives by race and sex. <i>JAMA Network Open</i>, 7(2), e2356600. <a href="https://doi.org/10.1001/jamanetworkopen.2023.56600">https://doi.org/10.1001/jamanetworkopen.2023.56600</a></p>	<p><b>Initial Code: Positive care experiences</b></p> <ul style="list-style-type: none"> <li>• "Good medical care" salient across race and sex groups</li> <li>• Telehealth viewed as "great option" by veterans</li> <li>• Some veterans satisfied with VA services overall</li> <li>• Positive items consistent across demographic groups</li> </ul> <p><b>Initial Code: Negative care experiences</b></p> <ul style="list-style-type: none"> <li>• "Long waits" identified as salient negative item</li> <li>• "Delays in getting care" reported across groups</li> <li>• "Traffic challenges" and access barriers noted</li> <li>• "Stress, anxiety, and fear" associated with VA care</li> <li>• "Impersonal and cursory" telehealth experiences reported</li> </ul> <p><b>Initial Code: Disparities by race and sex</b></p> <ul style="list-style-type: none"> <li>• Disparities in access to quality care observed among demographic groups</li> <li>• Access to diagnostic testing for chronic diseases varied by group</li> <li>• Need for "more personal and attentive" care expressed</li> <li>• Findings consistent with reports that 29% of veterans have care delays vs. 17.2% of civilians</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Service Delivery → Mixed experiences with VA care quality across demographic groups</li> <li>• Telehealth Implementation → Valued as option but sometimes perceived as impersonal</li> <li>• System Access → Delays and waits identified as persistent challenges</li> </ul> <p><b>Health Equity Factors:</b></p> <ul style="list-style-type: none"> <li>• Demographic Disparities → Access to quality care varied by race and sex</li> <li>• Diagnostic Access → Differential access to testing for chronic diseases across groups</li> <li>• Care Experience → Quality perceptions differ among veteran subpopulations</li> </ul> <p><b>Patient Experience Factors:</b></p> <ul style="list-style-type: none"> <li>• Positive Elements → Good medical care, telehealth convenience valued</li> <li>• Negative Elements → Long waits, delays, impersonal interactions, stress and anxiety</li> <li>• Care Quality → Need for more personal and attentive care expressed</li> </ul> <p><b>Measurement Factors:</b></p> <ul style="list-style-type: none"> <li>• Methodology → Freelist technique with Smith salience index</li> <li>• Sample → 49 participants with chronic hypertension, aggregated by race and gender</li> </ul>

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		<ul style="list-style-type: none"> <li>• Comparison → Veterans' 29% delay rate vs. civilians' 17.2% delay rate</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Intervention Focus → Address interpersonal interactions within VA to reduce inequity</li> <li>• Research Expansion → Examine differences across broader demographic categories</li> <li>• Quality Improvement → Enhance personal attention and reduce care delays</li> </ul>
<p>Mills, P., Louis, R. P., &amp; Yackel, E. (2023). Delays in care during the COVID-19 pandemic in the Veterans Health Administration. <i>The Journal for Healthcare Quality</i>, 45(4), 242–253. <a href="https://doi.org/10.1097/JHQ.00000000000000383">https://doi.org/10.1097/JHQ.00000000000000383</a></p>	<p><b>Initial Code: Primary delay types</b></p> <ul style="list-style-type: none"> <li>• Laboratory results delays causing cascade of other delays</li> <li>• Right level of care delays (access to appropriate care level)</li> <li>• Treatment procedures, interventional procedures delays</li> <li>• Specific aspects of care delays (COVID-19 testing, masking protocols)</li> <li>• Radiology treatment delays</li> <li>• Cancer diagnosis delays</li> <li>• Medication administration delays</li> <li>• Non-cancer diagnosis delay</li> <li>• Perioperative delays</li> </ul> <p><b>Initial Code: Root cause for delays</b></p> <ul style="list-style-type: none"> <li>• Poor communication between staff (most common)</li> <li>• Laboratory specimen lost, misplaced, or forgotten</li> <li>• Confusion over policies and protocols</li> <li>• Misunderstanding of specific rules</li> <li>• Unit/clinic closures</li> <li>• Equipment/procedures unavailable</li> <li>• PPE shortages</li> <li>• Staff shortages</li> <li>• Transport delays</li> <li>• Problems with patient handoffs</li> </ul> <p><b>Initial Code: Root cause for delays</b></p> <ul style="list-style-type: none"> <li>• Majority resulted in no harm to minor harm</li> <li>• Some delays caused moderate to catastrophic harm</li> <li>• Treatment procedure delays showed higher harm rates</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• System Readiness → Policy confusion, unclear protocols, misunderstanding of new rules</li> <li>• Resource Availability → Equipment shortages, PPE shortages, staff shortages, clinic closures</li> <li>• Communication Systems → Staff-to-staff communication breakdowns, handoff problems</li> <li>• Process Standardization → Lack of standardized COVID-19 testing procedures, inconsistent protocols</li> </ul> <p><b>Environmental, Contextual Factors:</b></p> <ul style="list-style-type: none"> <li>• Pandemic Pressures → Fear of exposure, high-stress environment, rapidly changing protocols</li> <li>• Physical Barriers → PPE interference with communication, isolation requirements</li> <li>• Service Disruptions → Clinic closures, reduced availability of services</li> <li>• Emergency vs. Routine Care → Delays in emergency procedures due to COVID-19 protocols</li> </ul> <p><b>Individual Personal Factors</b></p> <ul style="list-style-type: none"> <li>• Staff Behavior → Forgetting procedures, misplacing specimens, fear-based decisions</li> <li>• Communication Competence → Understanding of SBAR, clarity in handoffs</li> <li>• Adaptability → Ability to learn new protocols quickly, confusion management</li> </ul> <p><b>Patient Safety Outcomes:</b></p>

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		<ul style="list-style-type: none"> <li>• Delay Severity → Hours to months of delays, cascade effects from laboratory delays</li> <li>• Harm Levels → No harm to catastrophic outcome</li> <li>• Care Quality → Missed diagnoses, delayed treatments, inappropriate care levels</li> </ul> <p><b>Systemic Solutions Identified:</b></p> <ul style="list-style-type: none"> <li>• Standardization → Clear COVID-19 testing protocols, consistent procedures</li> <li>• Communication Enhancement → SBAR training, visual management, safety huddles</li> <li>• Simulation Training → Protocol testing, latent safety issue identification</li> <li>• Process Improvement → Separate pathways for emergency vs. routine care</li> </ul>
<p>Moldestad, M., Stryczek, K. C., Haverhals, L., Kenney, R., Lee, M., Ball, S., &amp; Young, J. (2021). Competing demands: scheduling challenges in being veteran-centric in the setting of health system initiatives to improve access. <i>Military Medicine</i>, 186(11-12), e1233–e1240.</p>	<p><b>Initial Code: Primary delay types</b></p> <ul style="list-style-type: none"> <li>• Laboratory results delays causing cascade of other delays</li> <li>• Right level of care delays (access to appropriate care level)</li> <li>• Treatment procedures, interventional procedures delays</li> <li>• Specific aspects of care delays (COVID-19 testing, masking protocols)</li> <li>• Radiology treatment delays</li> <li>• Cancer diagnosis delays</li> <li>• Medication administration delays</li> <li>• Non-cancer diagnosis delay</li> <li>• Perioperative delays</li> </ul> <p><b>Initial Code: Root cause for delays</b></p> <ul style="list-style-type: none"> <li>• Poor communication between staff (most common)</li> <li>• Laboratory specimen lost, misplaced, or forgotten</li> <li>• Confusion over policies and protocols</li> <li>• Misunderstanding of specific rules</li> <li>• Unit/clinic closures</li> <li>• Equipment/procedures unavailable</li> <li>• PPE shortages</li> <li>• Staff shortages</li> <li>• Transport delays</li> <li>• Problems with patient handoffs</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• System Readiness → Policy confusion, unclear protocols, misunderstanding of new rules</li> <li>• Resource Availability → Equipment shortages, PPE shortages, staff shortages, clinic closures</li> <li>• Communication Systems → Staff-to-staff communication breakdowns, handoff problems</li> <li>• Process Standardization → Lack of standardized COVID-19 testing procedures, inconsistent protocols</li> </ul> <p><b>Environmental, Contextual Factors:</b></p> <ul style="list-style-type: none"> <li>• Pandemic Pressures → Fear of exposure, high-stress environment, rapidly changing protocols</li> <li>• Physical Barriers → PPE interference with communication, isolation requirements</li> <li>• Service Disruptions → Clinic closures, reduced availability of services</li> <li>• Emergency vs. Routine Care → Delays in emergency procedures due to COVID-19 protocols</li> </ul> <p><b>Individual Personal Factors</b></p> <ul style="list-style-type: none"> <li>• Staff Behavior → Forgetting procedures, misplacing specimens, fear-based decisions</li> </ul>

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	<p><b>Initial Code: Root cause for delays</b></p> <ul style="list-style-type: none"> <li>Majority resulted in no harm to minor harm</li> <li>Some delays caused moderate to catastrophic harm</li> </ul> <p>Treatment procedure delays showed higher harm rates</p>	<ul style="list-style-type: none"> <li>Communication Competence → Understanding of SBAR, clarity in handoffs</li> <li>Adaptability → Ability to learn new protocols quickly, confusion management</li> </ul> <p><b>Patient Safety Outcomes:</b></p> <ul style="list-style-type: none"> <li>Delay Severity → Hours to months of delays, cascade effects from laboratory delays</li> <li>Harm Levels → No harm to catastrophic outcome</li> <li>Care Quality → Missed diagnoses, delayed treatments, inappropriate care levels</li> </ul> <p><b>Systemic Solutions Identified:</b></p> <ul style="list-style-type: none"> <li>Standardization → Clear COVID-19 testing protocols, consistent procedures</li> <li>Communication Enhancement → SBAR training, visual management, safety huddles</li> <li>Simulation Training → Protocol testing, latent safety issue identification</li> </ul> <p>Process Improvement → Separate pathways for emergency vs. routine care</p>
<p>Nevedal, A. L., Widerquist, M. A. O., Reardon, C. M., Arasim, M., Jackson, G. L., White, B., &amp; Damschroder, L. J. (2024). Understanding pathways from implementation to sustainment: A longitudinal, mixed methods analysis of promising practices implemented in the Veterans Health Administration. <i>Implementation Science</i>, 19(1), 34.</p>	<p><b>Initial Code: Implementation to sustainment pathways</b></p> <ul style="list-style-type: none"> <li>Longitudinal analysis of promising practices in VHA</li> <li>Multiple pathways from initial implementation to sustained practice</li> <li>Factors supporting sustainment differ from implementation factors</li> <li>Mixed methods approach reveals complexity of practice maintenance</li> </ul> <p><b>Initial Code: Sustainment facilitators</b></p> <ul style="list-style-type: none"> <li>Leadership support critical for long-term practice maintenance</li> <li>Resource allocation decisions affect sustainment</li> <li>Staff buy-in and engagement influence practice continuation</li> <li>Organizational culture shapes sustainment trajectories</li> </ul> <p><b>Initial Code: Sustainment barriers</b></p> <ul style="list-style-type: none"> <li>Competing priorities threaten sustained practices</li> <li>Staff turnover disrupts implementation continuity</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>Leadership Support → Critical factor for transitioning from implementation to sustainment</li> <li>Resource Allocation → Decisions about resources affect long-term practice viability</li> <li>Organizational Culture → Shapes trajectory of practice sustainment over time</li> </ul> <p><b>Implementation Science Factors:</b></p> <ul style="list-style-type: none"> <li>Pathway Complexity → Multiple routes from implementation to sustained practice</li> <li>Temporal Dynamics → Factors supporting sustainment differ from initial implementation factors</li> <li>Mixed Methods Value → Longitudinal, multi-method approach reveals sustainment complexity</li> </ul> <p><b>Workforce Factors:</b></p>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
	<ul style="list-style-type: none"> <li>• Resource constraints challenge long-term maintenance</li> <li>• Changing organizational priorities affect practice survival</li> </ul>	<ul style="list-style-type: none"> <li>• Staff Engagement → Buy-in and commitment influence practice continuation</li> <li>• Turnover Impact → Staff changes disrupt implementation continuity and knowledge transfer</li> <li>• Capacity Building → Sustained practices require ongoing workforce investment</li> </ul> <p><b>Sustainability Factors:</b></p> <ul style="list-style-type: none"> <li>• Competing Priorities → Organizational demands threaten maintenance of implemented practices</li> <li>• Resource Constraints → Long-term maintenance challenged by limited resources</li> <li>• Priority Shifts → Changing organizational focus affects practice survival</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Sustainment Planning → Build maintenance strategies into initial implementation design</li> <li>• Leadership Development → Cultivate sustained leadership support for promising practices</li> <li>• Knowledge Transfer → Address staff turnover impacts on implementation continuity</li> </ul>
<p>Panaite, V., Cohen, N. J., Luther, S. L., Finch, D. K., Alman, A., Schultz, S. K., &amp; Pfeiffer, P. N. (2024). Mental health treatment utilization patterns among 108,457 Afghanistan and Iraq veterans with depression. <i>Psychological Services, 21</i>(3), 665.</p>	<p><b>Initial Code: Mental health treatment utilization patterns</b></p> <ul style="list-style-type: none"> <li>• Analysis of 108,457 Afghanistan and Iraq veterans with depression</li> <li>• Utilization patterns varied across veteran population</li> <li>• Treatment engagement levels differed among subgroups</li> <li>• Large-scale examination of mental health service use</li> </ul> <p><b>Initial Code: Treatment access factors</b></p> <ul style="list-style-type: none"> <li>• Barriers to mental health treatment identified</li> <li>• Variation in treatment initiation and continuation</li> <li>• Factors influencing whether veterans engage with mental health services</li> <li>• Gaps between diagnosis and treatment utilization</li> </ul> <p><b>Initial Code: Service delivery patterns</b></p> <ul style="list-style-type: none"> <li>• Mental health services utilized at varying rates</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Service Capacity → System ability to meet mental health needs of post-9/11 veterans</li> <li>• Care Delivery → Variation in how mental health services are accessed and utilized</li> <li>• Population Scale → 108,457 veterans examined provides system-wide perspective</li> </ul> <p><b>Access to Care Factors:</b></p> <ul style="list-style-type: none"> <li>• Treatment Initiation → Variation in whether veterans begin mental health treatment</li> <li>• Treatment Continuation → Differences in sustained engagement with services</li> <li>• Barrier Identification → Factors preventing or delaying mental health care access</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
	<ul style="list-style-type: none"> <li>• Depression treatment pathways differ across veteran subgroups</li> <li>• System capacity to meet mental health needs examined</li> <li>• Patterns reveal opportunities for improved engagement</li> </ul>	<p><b>Patient Factors:</b></p> <ul style="list-style-type: none"> <li>• Utilization Patterns → Treatment engagement varies across veteran subgroups</li> <li>• Depression Management → Pathways from diagnosis to treatment differ among veterans</li> <li>• Subgroup Differences → Certain veteran populations show different utilization behaviors</li> </ul> <p><b>Mental Health Service Factors:</b></p> <ul style="list-style-type: none"> <li>• Treatment Gaps → Disconnect between depression diagnosis and service utilization</li> <li>• Engagement Opportunities → Patterns reveal where interventions could improve access</li> <li>• Service Matching → Alignment between veteran needs and available mental health resources</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Targeted Interventions → Address barriers specific to underutilizing subgroups</li> <li>• Engagement Strategies → Improve treatment initiation and continuation rates</li> <li>• System Improvement → Enhance capacity to serve post-9/11 veterans with depression</li> </ul>
<p>Politi, R. E., Mills, P. D., Zubkoff, L., &amp; Neily, J. (2022). Delays in diagnosis, treatment, and surgery: Root causes, actions taken, and recommendations for healthcare improvement. <i>Journal of Patient Safety</i>, 18(7), e1061–e1066. <a href="https://doi.org/10.1097/PTS.0000000000001016">https://doi.org/10.1097/PTS.0000000000001016</a></p>	<p><b>Types of delays identified across 3-year period (n=163):</b></p> <ul style="list-style-type: none"> <li>• Treatment delays (71.8%, n=117) - most common type</li> <li>• Diagnosis delays (14.7%, n=24)</li> <li>• Surgery delays (13.5%, n=22)</li> </ul> <p><b>Initial Code: Treatment delay subtypes</b></p> <ul style="list-style-type: none"> <li>• Failure to receive timely and appropriate level of care</li> <li>• Delay in ICU transfer</li> <li>• Specific aspects of care delays - medication, supplies availability</li> <li>• Delayed procedures</li> <li>• Other treatments</li> </ul> <p><b>Individual Code: Diagnosis delay subtypes</b></p>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Process Standardization → Lack of standardized processes, inconsistent procedures across units</li> <li>• Policy Implementation → Policies not followed as intended, need for improvement, gaps in procedures</li> <li>• Resource Management → Equipment/supply shortages, missing critical supplies</li> <li>• Communication Infrastructure → Inter-departmental communication failures, information gaps</li> </ul> <p><b>Care Delivery Factors:</b></p> <ul style="list-style-type: none"> <li>• Care Setting Vulnerabilities → Outpatient primary care delays, emergency department bottlenecks</li> <li>• Care Coordination → Handoff failures, lack of information continuity</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
	<ul style="list-style-type: none"> <li>• Delay in diagnostic procedures</li> <li>• Non-cancer diagnosis delays</li> <li>• Cancer diagnosis delays</li> </ul> <p><b>Initial Code: Surgery delay subtypes</b></p> <ul style="list-style-type: none"> <li>• Intraoperative delays- during surgery</li> <li>• Preoperative delays - delays in start of surgery</li> <li>• Scheduling delays</li> <li>• Handoff communication delays</li> </ul> <p><b>Initial Code: Most common root causes identified</b></p> <ul style="list-style-type: none"> <li>• Lack of standardized processes for procedures</li> <li>• Policies or procedures need improvement, not followed correctly</li> <li>• Staff knowledge deficit/education needs</li> <li>• Poor communication between departments</li> <li>• Equipment and/or supplies missing</li> <li>• Poor communication within department/team</li> <li>• Lack of patient information</li> </ul> <p><b>Initial Code: Care setting patterns</b></p> <ul style="list-style-type: none"> <li>• Outpatient setting most common location</li> <li>• Diagnosis delays in outpatient settings</li> <li>• Treatment delays</li> </ul> <p>Surgery delays</p>	<ul style="list-style-type: none"> <li>• Clinical Decision Making → Appropriate level of care determination, diagnostic procedure delays</li> <li>• Specialty Integration → Consultation delays, inter-service communication</li> </ul> <p><b>Human Performance Factors:</b></p> <ul style="list-style-type: none"> <li>• Knowledge and Competence → Staff education deficits, training gaps, understanding of procedures</li> <li>• Communication Skills → Intra-team communication breakdowns, SBAR utilization</li> <li>• Situational Awareness → Recognition of urgency, escalation processes</li> <li>• Team Coordination → Department-to-department collaboration</li> </ul> <p><b>System Infrastructure:</b></p> <ul style="list-style-type: none"> <li>• Technology Support → Specimen tracking systems, test result communication</li> <li>• Equipment Management → Surgical tray preparation, sterile processing, biomedical maintenance</li> <li>• Information Systems → Patient information availability, documentation processes</li> <li>• Quality Assurance → Root cause analysis processes, safety event reporting</li> </ul> <p><b>Improvement Strategies:</b></p> <ul style="list-style-type: none"> <li>• Standardization → Consistent processes across settings, checklists, protocols</li> <li>• Education and Training → Staff competency development, communication training</li> <li>• Technology Enhancement → Electronic tracking, alert systems, decision support</li> <li>• Leadership Support → "Stop the Line" culture, escalation mechanisms, safety focus</li> </ul>
Pounds, L. C., Hart, A., Brahmhatt, R. R., & Sideman, M. J. (2022). Staffing shortages in a veterans affairs vascular lab results in decreased studies performed with resultant loss of	<p><b>Initial Code: MISSION Act Community Care Networks implementation outcomes</b></p> <ul style="list-style-type: none"> <li>• Overall unadjusted wait times increased by 35.7 days after CCN implementation</li> </ul>	<p><b>Policy Implementation Factors</b></p> <ul style="list-style-type: none"> <li>• Legislative Intent vs. Reality → MISSION Act designed to reduce wait times but resulted in increases</li> <li>• Network Adequacy Standards → Drive time and wait time standards not reflecting actual access</li> </ul>

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<p>revenue and increased cost. <i>Journal of the American College of Surgeons</i>, 235(5), S106-S107.</p>	<ul style="list-style-type: none"> <li>No significant difference between CCN and comparison appointment wait times after implementation</li> <li>Both CCN and comparison facilities experienced sharp wait time increases</li> <li>Wait times exceeded VA's 28-day network adequacy standard across both groups</li> </ul> <p><b>Initial Code: Primary care appointment patterns</b></p> <ul style="list-style-type: none"> <li>13,720 CCN appointments vs. 40,638 comparison appointments analyzed</li> <li>CCN appointments: 25.2% of total community primary care appointments</li> <li>Pre-CCN period: 44.4 days average wait, Post-CCN period: 80.1 days average wait</li> <li>Difference-in-differences approach showed similar patterns across both groups</li> </ul> <p><b>Initial Code: Geographic and demographic variations</b></p> <ul style="list-style-type: none"> <li>Rural vs. urban differences in wait time increases varied by setting</li> <li>Primary Care Health Professional Shortage Areas (HPSA) showed different patterns</li> <li>Rural CCN appointments: no significant difference vs. comparison (+0.4 days)</li> <li>Urban CCN appointments: additional 13.4 days increase beyond comparison group increases</li> </ul> <p><b>Initial Code: System capacity and demand issues</b></p> <ul style="list-style-type: none"> <li>VA underestimated community care demand growth (projected 10%, actual 40-70% at some facilities)</li> <li>Inadequate staffing models to meet referral volume increases</li> <li>Network adequacy standards may not reflect actual provider availability</li> <li>"Phantom" providers in directories who don't accept VA patients</li> </ul> <p><b>Initial Code: MISSION Act policy implementation challenges</b></p>	<ul style="list-style-type: none"> <li>Demand Forecasting → Systematic underestimation of community care utilization growth</li> <li>Regulatory Constraints → Limited ability to manage provider networks through rate negotiations</li> </ul> <p><b>Healthcare Market Dynamics</b></p> <ul style="list-style-type: none"> <li>Provider Network Adequacy → "Phantom" providers in directories, inactive or unavailable providers</li> <li>Community Provider Relations → Strained relationships, provider refusal to accept VA patients</li> <li>Supply-Demand Imbalance → Expanded eligibility overwhelming limited provider capacity</li> <li>Geographic Access Barriers → Rural area challenges in provider network expansion</li> </ul> <p><b>Organizational Capacity Factors</b></p> <ul style="list-style-type: none"> <li>Demand Prediction → Inaccurate modeling of community care growth patterns</li> <li>Staffing Models → Inadequate workforce planning for increased referral volume</li> <li>Process Management → Challenges in authorization, scheduling, and claims processing</li> <li>Information Systems → Provider directory accuracy and maintenance issues</li> </ul> <p><b>Primary Care Access Patterns:</b></p> <ul style="list-style-type: none"> <li>Wait Time Trends → Systematic increases across both CCN and comparison sites</li> <li>Geographic Variations → Rural vs. urban differences in access improvement</li> <li>HPSA Impact → Different outcomes in health professional shortage areas</li> <li>Service Setting → Primary care vs. specialty care network development priorities</li> </ul> <p><b>System-Level Outcomes:</b></p> <ul style="list-style-type: none"> <li>Unintended Consequences → Policy intended to improve access resulted in longer waits</li> </ul>

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	<ul style="list-style-type: none"> <li>Expanded provider networks did not translate to improved appointment availability</li> <li>Network adequacy determinations based on drive time (30-60 minutes) and wait time (30 days)</li> <li>Limited ability to regulate networks through rate negotiations (Medicare rate requirements)</li> </ul> <p>Strained relationships between VA facilities and community providers</p>	<ul style="list-style-type: none"> <li>Network Expansion Limitations → Increased provider numbers didn't improve actual availability</li> <li>Access Standard Compliance → Majority of appointments exceeded 28-day standard</li> <li>Resource Allocation → Misalignment between projected and actual demand patterns</li> </ul>
<p>Rossi, M. M., Radunovich, H. L., &amp; Parisi, M. A. (2024). Rural veteran perception of healthcare access in South Carolina and Florida: a qualitative study. <i>BMC Health Services Research</i>, 24(1), 826.</p>	<p><b>Types of delays identified across 3-year period (n=163):</b></p> <ul style="list-style-type: none"> <li>Treatment delays (71.8%, n=117) - most common type</li> <li>Diagnosis delays (14.7%, n=24)</li> <li>Surgery delays (13.5%, n=22)</li> </ul> <p><b>Initial Code: Treatment delay subtypes</b></p> <ul style="list-style-type: none"> <li>Failure to receive timely and appropriate level of care</li> <li>Delay in ICU transfer</li> <li>Specific aspects of care delays - medication, supplies availability</li> <li>Delayed procedures</li> <li>Other treatments</li> </ul> <p><b>Individual Code: Diagnosis delay subtypes</b></p> <ul style="list-style-type: none"> <li>Delay in diagnostic procedures</li> <li>Non-cancer diagnosis delays</li> <li>Cancer diagnosis delays</li> </ul> <p><b>Initial Code: Most common root causes identified</b></p> <ul style="list-style-type: none"> <li>Lack of standardized processes for procedures</li> <li>Policies or procedures need improvement, not followed correctly</li> <li>Staff knowledge deficit/education needs</li> <li>Poor communication between departments</li> <li>Equipment and/or supplies missing</li> <li>Poor communication within department/team</li> <li>Lack of patient information</li> </ul> <p><b>Initial Code: Care setting patterns</b></p>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>Process Standardization → Lack of standardized processes, inconsistent procedures across units</li> <li>Policy Implementation → Policies not followed as intended, need for improvement, gaps in procedures</li> <li>Resource Management → Equipment/supply shortages, missing critical supplies</li> <li>Communication Infrastructure → Inter-departmental communication failures, information gaps</li> </ul> <p><b>Care Delivery Factors:</b></p> <ul style="list-style-type: none"> <li>Care Setting Vulnerabilities → Outpatient primary care delays, emergency department bottlenecks</li> <li>Care Coordination → Handoff failures, lack of information continuity</li> <li>Clinical Decision Making → Appropriate level of care determination, diagnostic procedure delays</li> <li>Specialty Integration → Consultation delays, inter-service communication</li> </ul> <p><b>Human Performance Factors:</b></p> <ul style="list-style-type: none"> <li>Knowledge and Competence → Staff education deficits, training gaps, understanding of procedures</li> <li>Communication Skills → Intra-team communication breakdowns, SBAR utilization</li> <li>Situational Awareness → Recognition of urgency, escalation processes</li> <li>Team Coordination → Department-to-department collaboration</li> </ul> <p><b>Improvement Strategies:</b></p> <ul style="list-style-type: none"> <li>Standardization → Consistent processes across settings, checklists, protocols</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
	<ul style="list-style-type: none"> <li>• Outpatient setting most common location</li> <li>• Diagnosis delays in outpatient settings</li> <li>• Treatment delays</li> <li>• Surgery delays</li> </ul>	<ul style="list-style-type: none"> <li>• Education and Training → Staff competency development, communication training</li> <li>• Technology Enhancement → Electronic tracking, alert systems, decision support</li> <li>• Leadership Support → "Stop the Line" culture, escalation mechanisms, safety focus</li> </ul>
<p>Scorsone, K. L., &amp; Frank, J. W. (2024). Exploring veterans' experiences accessing chronic pain treatment in the VA community care network. <i>Journal of General Internal Medicine</i>, 39(16), 3190-3195.  <a href="https://doi.org/10.1007/s11606-024-09023-y">https://doi.org/10.1007/s11606-024-09023-y</a></p>	<p><b>Initial Code: CCN navigation challenges</b></p> <ul style="list-style-type: none"> <li>• Veterans described challenges navigating approval process</li> <li>• Finding pain management providers approved by VA in CCN difficult</li> <li>• Approval process described as time-consuming for veterans and CC providers</li> <li>• Administrative complexities create barriers to accessing care</li> </ul> <p><b>Initial Code: Communication barriers</b></p> <ul style="list-style-type: none"> <li>• Communication between VA and community providers challenged</li> <li>• Information transfer gaps between systems</li> <li>• Veterans serve as intermediaries between VA and CCN providers</li> <li>• Coordination deficiencies delay care initiation</li> </ul> <p><b>Initial Code: CCN benefits once enrolled</b></p> <ul style="list-style-type: none"> <li>• Veterans valued freedom to choose local providers</li> <li>• Access to pain management specialists within local communities</li> <li>• Improved and timely access to appointments after enrollment</li> <li>• Opportunity to explore wider range of treatment options</li> <li>• CCN improved wait times for pain management</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Administrative Complexity → Time-consuming approval process for CCN enrollment</li> <li>• System Coordination → Communication challenges between VA and community providers</li> <li>• Provider Networks → Difficulty identifying approved pain management providers in CCN</li> </ul> <p><b>Access to Care Factors:</b></p> <ul style="list-style-type: none"> <li>• Enrollment Barriers → Complex approval process delays access to CCN services</li> <li>• Wait Time Improvement → CCN improved wait times for pain management once enrolled</li> <li>• Local Access → Community-based providers offer improved geographic accessibility</li> </ul> <p><b>Patient Experience Factors:</b></p> <ul style="list-style-type: none"> <li>• Navigation Burden → Veterans bear responsibility for navigating administrative complexities</li> <li>• Provider Choice → Freedom to select local specialists valued after enrollment</li> <li>• Treatment Options → Wider range of pain management approaches available through CCN</li> </ul> <p><b>Communication Factors:</b></p> <ul style="list-style-type: none"> <li>• Cross-System Gaps → Information transfer challenges between VA and CCN providers</li> <li>• Coordination Deficiencies → Communication barriers lead to delays in care</li> <li>• Patient as Intermediary → Veterans often bridge communication gaps between systems</li> </ul>

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		<p><b>Care Delivery Factors:</b></p> <ul style="list-style-type: none"> <li>• Chronic Pain Management → CCN offers alternative pathway for pain treatment</li> <li>• Specialist Access → Local pain management specialists available through CCN</li> <li>• Timeliness → Improved appointment access after successful enrollment</li> </ul> <p><b>Future Directions:</b></p> <ul style="list-style-type: none"> <li>• Process Streamlining → Simplify VA administrative requirements for CCN initiation</li> <li>• Provider Perspectives → Research needed on CC provider perceptions of access improvement</li> <li>• Quality Evaluation → Examine actual timeliness, quality, and safety of CCN care</li> </ul>
<p>Stryczek, K. C., Honsberger, M., Ball, S. L., Barnard, J. G., Young, J. P., Felker, B., &amp; Sayre, G. G. (2023). VA outreach is an essential area for improving veterans' health care accessibility. <i>Military Medicine</i>, 188(7-8), e2439-e2447.  <a href="https://doi.org/10.1093/milmed/usad019">https://doi.org/10.1093/milmed/usad019</a></p>	<p><b>Initial Code: DVA Access Intervention Categories</b></p> <ul style="list-style-type: none"> <li>• 17 interventions identified across four major categories: Primary care mental health integration (PC-MHI) (n=6, 35%), other national initiatives (n=2, 12%), telemental health (TMH) (n=2, 12%), and direct outreach (n=7, 41%)</li> <li>• 29 manuscripts reporting quantitative access outcomes met inclusion criteria from 1,650 initially screened</li> <li>• PC-MHI interventions involved development and implementation of integrated care programs embedding mental health providers within primary care spaces</li> <li>• Other national policy initiatives included Mental Health Strategic Plan collection and Military Sexual Trauma (MST) screening program</li> <li>• Direct outreach interventions represented largest category, involving studies engaging veterans or families to encourage accessing services</li> </ul> <p><b>Initial Code: Access Outcome Measurement Domains</b></p> <ul style="list-style-type: none"> <li>• Five behaviorally anchored outcome domains evaluated: Binary attendance (whether patients participated in mental health care), number of mental health sessions attended,</li> </ul>	<p><b>Access Intervention Effectiveness:</b></p> <ul style="list-style-type: none"> <li>• Primary Care Integration Success → PC-MHI most studied intervention (12 articles), consistently successful across binary attendance and number of veterans seen, substantial wait time reduction, robust effects justify resource investment</li> <li>• National Policy Impact → Mental Health Strategic Plan and MST screening program showed positive results across three outcome domains, MST program particularly effective for binary attendance and increased sessions</li> <li>• Telemental Health Promise → Limited studies but generally positive results for binary attendance, number of patients seen, and sessions attended, under-represented despite COVID-19 pandemic surge</li> <li>• Direct Outreach Variability → Largest number of interventions but mixed success rates, smaller sample sizes, single-site studies limit generalizability</li> </ul> <p><b>Study Design and Methodological Factors:</b></p> <ul style="list-style-type: none"> <li>• Research Quality Limitations → High risk of bias in randomization process and outcome measurement, lack of preintervention outcome specification, inability to blind participants</li> <li>• Sample Size Variations → PC-MHI and national initiatives used large samples and robust observational designs, direct outreach relied on smaller RCTs, TMH studies used network-based implementations</li> </ul>

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	<p>number of patients seen by sites, care initiation (change in intake appointment rates), and wait times</p> <ul style="list-style-type: none"> <li>• Binary attendance examined across 21 empirical articles, representing 33 outcomes reported</li> <li>• Number of sessions attended showed equivocal results varying by intervention type</li> <li>• Wait time analysis conducted for only one intervention category (PC-MHI)</li> <li>• Care initiation examined in substantially fewer articles across three categories</li> </ul> <p><b>Initial Code: Intervention Effectiveness Patterns by Category</b></p> <ul style="list-style-type: none"> <li>• PC-MHI consistently successful across binary attendance (16 of 18 outcomes, 89% improvement) and number of veterans seen for mental health care</li> <li>• PC-MHI associated with substantially reduced patient wait times (from over 30 days to 19 minutes)</li> <li>• Other national policy interventions showed positive results across three outcome domains, particularly MST program with increased binary attendance</li> <li>• TMH interventions demonstrated preliminary positive evidence for binary attendance, number of patients seen, and sessions attended</li> <li>• Direct outreach interventions showed mixed results: 6 of 9 articles reported successful attendance outcomes (70% of individual outcomes), but only half successful for sessions attended</li> </ul> <p><b>Initial Code: Study Design and Quality Characteristics</b></p> <ul style="list-style-type: none"> <li>• Most common designs were observational/retrospective approaches (41%) and randomized controlled trials (31%)</li> <li>• Median sample size was 526 (range: 27-5,377,093), varying significantly by intervention category</li> <li>• PC-MHI studies: median sample size 967, mostly single VAMC settings (58%), with treatment as usual controls (78%)</li> <li>• Direct outreach studies: median sample size 104, smallest samples, usually single VAMC settings (45%), mostly RCTs</li> </ul>	<ul style="list-style-type: none"> <li>• Control Condition Patterns → Most articles employed treatment as usual controls (81% of those with controls), national initiatives less likely to use control conditions</li> <li>• Setting Considerations → Single VAMC most common setting (48%), national data used for policy initiatives, variation in geographic scope affects generalizability</li> </ul> <p><b>Access Pathway and Barrier Considerations:</b></p> <ul style="list-style-type: none"> <li>• Intervention Targeting → PC-MHI designed to address range of pre-assessment barriers including stigma concerns and DVA system navigation difficulties</li> <li>• Care Continuum Gaps → Different interventions needed at different points in access pathways, PC-MHI excellent for care initiation but additional interventions may be required for continued care</li> <li>• Environmental vs Administrative → Environmental interventions more effective than administrative changes, training and reminder systems insufficient to change human error rates</li> <li>• Outcome Domain Specificity → Binary attendance generally improved across interventions, sessions attended showed equivocal results, wait time analysis limited to single intervention type</li> </ul> <p><b>Research Infrastructure and Evidence Gaps:</b></p> <ul style="list-style-type: none"> <li>• Literature Limitations → Limited quantitative access outcomes major reason for article exclusion, need for additional research with objective access measures</li> <li>• Implementation Science → Lack of formal fidelity assessments, difficulty assessing deviations from intended interventions due to flexible intervention components</li> <li>• Generalizability Concerns → Direct outreach interventions typically evaluated by single studies conducted by intervention developers, need for independent replication</li> <li>• Future Research Needs → Additional TMH research needed given COVID-19 pandemic importance, quantitative outcome reporting required for robust examination of intervention effectiveness</li> </ul>

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	<ul style="list-style-type: none"> <li>High risk of bias identified across two domains: randomization process (only one-third used randomization) and outcome measurement (blinding frequently impossible)</li> </ul>	
<p>U.S. Government Accountability Office. (2025, May 5). Priority open recommendations: Department of Veterans Affairs (GAO-25-108071).</p>	<p><b>Initial Code: VA Priority Recommendations Overview</b></p> <ul style="list-style-type: none"> <li>29 open priority recommendations across 5 key areas</li> <li>227 total open recommendations remaining</li> <li>Focus on improving timely access to Veterans Community Care Program</li> <li>Enhancing acquisition management on GAO High-Risk List since 2019</li> <li>Modernizing electronic health records system challenges</li> </ul> <p><b>Initial Code: Community Care Program Access Issues</b></p> <ul style="list-style-type: none"> <li>Need for achievable wait-time goals for consolidated community care program</li> <li>Appointment scheduling process design requirements</li> <li>Monitoring metrics alignment with established time frames</li> <li>VHA has not defined timeliness standard for community care receipt</li> </ul> <p><b>Initial Code: Systemic VA Challenges</b></p> <ul style="list-style-type: none"> <li>Electronic health records modernization management challenges</li> <li>Strategic human capital management weaknesses</li> <li>Quality of care and patient safety oversight issues</li> <li>Veterans Integrated Services Networks (VISN) role clarity needs</li> <li>Suicide prevention concerns (17.6 veteran suicides per day in 2022)</li> </ul>	<p><b>Policy and Oversight Framework:</b></p> <ul style="list-style-type: none"> <li>Congressional Oversight → GAO recommendations process, priority designation criteria, implementation monitoring</li> <li>High-Risk Area Management → VA acquisition management, health care system risks, systematic vulnerabilities</li> <li>Regulatory Compliance → Federal agency oversight requirements, accountability measures</li> </ul> <p><b>Access and Wait Time Management:</b></p> <ul style="list-style-type: none"> <li>Community Care Standards → Wait-time goal establishment, appointment scheduling processes, timeliness monitoring</li> <li>Performance Measurement → Metrics alignment, monitoring systems, comparative analysis capabilities</li> <li>Service Delivery Standards → Network adequacy requirements, access benchmarking</li> </ul> <p><b>Organizational Reform Areas:</b></p> <ul style="list-style-type: none"> <li>System Modernization → EHR implementation challenges, change management needs, technology integration</li> <li>Workforce Management → Physician staffing processes, human capital planning, competency development</li> <li>Quality Assurance → Patient safety oversight, risk management, compliance monitoring</li> </ul>

Author(s) and date	Findings with Initial Codes	Code List for Theme Development
<p>Department of Veterans Affairs, Veterans Health Administration. (2023, July 25). VHA directive 1234: Radiology outpatient scheduling and orders management.</p>	<p>Initial Code: Wait time targets</p> <ul style="list-style-type: none"> <li>• Routine radiology appointments scheduled ≤28 calendar days from Patient Indicated Date (PID)</li> <li>• Urgent imaging exams ≤14 days from PID</li> <li>• Performance standards require 90% compliance within established timeframes</li> <li>• Monthly outpatient procedure wait time tracking required</li> </ul> <p>Initial Code: Scheduling process standardization</p> <ul style="list-style-type: none"> <li>• Mandatory contact within 7 days of order entry</li> <li>• Orders management protocols for "pending," "hold," and "scheduled" orders</li> <li>• Required scheduler training and competency assessments</li> <li>• Mandatory scheduling audits and cancellation monitoring</li> </ul> <p>Initial Code: Resource and oversight requirements</p> <ul style="list-style-type: none"> <li>• Staffing recommendations and equipment planning guidelines</li> <li>• EHR scheduling parameter optimization • Clinic profile management</li> <li>• VISN-level monitoring with corrective action plans</li> <li>• Quarterly reporting to facility leadership and VISN Diagnostics ICC</li> </ul>	<p><b>Organizational Factors:</b></p> <ul style="list-style-type: none"> <li>• Policy Standardization → System-wide directive for radiology scheduling, uniform processes across VA facilities</li> <li>• Performance Standards → 28-day routine target, 14-day urgent target, 90% compliance thresholds</li> <li>• Oversight Structure → VISN-level monitoring, quarterly reporting requirements, corrective action protocols</li> </ul> <p><b>Process Improvement Factors:</b></p> <ul style="list-style-type: none"> <li>• Scheduling Protocols → Mandatory 7-day contact window, defined order status categories, standardized workflows</li> <li>• Orders Management → Clear protocols for pending, hold, and scheduled orders with specific timeframes</li> <li>• Technology Optimization → EHR scheduling parameters, clinic profile accuracy reviews</li> </ul> <p><b>Workforce Development Factors:</b></p> <ul style="list-style-type: none"> <li>• Staff Competency → Required scheduler training, annual competency assessments</li> <li>• Performance Monitoring → Scheduling audit protocols, cancellation rate tracking</li> <li>• Resource Allocation → Staffing recommendations, equipment planning guidelines</li> </ul> <p><b>Quality Assurance Factors:</b></p> <ul style="list-style-type: none"> <li>• Compliance Monitoring → Monthly wait time tracking, incomplete exam management</li> <li>• Escalation Procedures → Defined protocols when resources insufficient to meet access standards</li> <li>• Accountability → Facility leadership reporting, VISN Diagnostics ICC oversight</li> </ul> <p><b>Implementation Considerations:</b></p> <ul style="list-style-type: none"> <li>• Timeline → 6-month implementation period for system-wide compliance</li> <li>• Scope → Radiology exempted from general consult scheduling requirements</li> </ul>

<b>Author(s) and date</b>	<b>Findings with Initial Codes</b>	<b>Code List for Theme Development</b>
		<ul style="list-style-type: none"><li>• Infrastructure Dependency → Relies on existing staffing and technology systems</li></ul>

Appendix E: Final Concept/Thematic Map

