JOURNAL OF INTERNATIONAL CRISIS AND RISK COMMUNICATION RESEARCH
ISSN: 2576-0017
2025, VOL 8, NO S10

Systematic Review Of Technological Innovations In Saudi Red Crescent Prehospital Services Impact On Response Time And Patient Outcomes

Rayan Khalil Khayat[1], Wael Ibrahim Ahmed[1], Zaher Ali Alshehri[1], Osamah Ahmed Alghamdi[1], Mohammad Ali Almontashari[1], Mohammed Jamaan Alzahrani[1], Abdul Rahman Mohammed Asiri[1], Sami Nami Alsulami[1], Mohammed Abdulmohsen Almaabadi[1], Abdulrhamn Ali Al-Shaikhi[1], Salim Sameer Almirabi[1]

[1]*Saudi Red Crescent Authority, Saudi Arabia.*

Abstract

Background:
The Saudi Red Crescent Authority (SRCA) has increasingly adopted technological innovations—such as GPS-based dispatch systems, electronic patient care records (ePCR), telemedicine, and mobile applications—to enhance the efficiency and quality of prehospital emergency services. While these interventions align with Saudi Arabia's Vision 2030 health transformation goals, their effectiveness in improving operational performance and patient outcomes remains fragmented across the literature.

Objective:
To systematically review and synthesize empirical evidence on the impact of technological innovations in SRCA's prehospital services, with a specific focus on response times, clinical documentation, and patient-centered outcomes.

Methods:
Following PRISMA 2020 guidelines, a comprehensive search was conducted across PubMed, Scopus, Web of Science, EMBASE, Google Scholar, and Saudi Digital Library. Eligible studies (2010–2024) included those conducted in Saudi Arabia, focused on SRCA technologies, and reporting on at least one relevant outcome. A total of 37 studies were included and analyzed qualitatively.

Results:
The majority of studies reported significant improvements in ambulance response times—particularly with the integration of GPS-enabled dispatch and AVL systems. ePCR and mobile tracking apps improved documentation accuracy and handover efficiency. Some evidence supported enhanced patient outcomes such as faster treatment initiation and better pre-arrival communication. However, long-term outcome data and integration with hospital systems were limited.

Conclusion:
Technological innovations have substantially improved operational metrics within SRCA's prehospital services, especially in reducing response times and improving data quality. To realize their full potential, future efforts should focus on system interoperability, regional standardization, and outcome-based evaluations. These findings provide strategic guidance for digital health policy and EMS transformation within Saudi Arabia's evolving healthcare landscape.

Keywords: Saudi Red Crescent Authority, prehospital care, technology, GPS dispatch, electronic patient care record, response time, patient outcomes, Vision 2030, emergency medical services, systematic review.

Introduction

Over the past two decades, technological innovation has emerged as a transformative force in the delivery of emergency medical services (EMS) worldwide. Among these advancements, prehospital care has experienced a significant evolution, with technologies such as GPS-enabled dispatch systems, electronic patient care records (ePCR), telemedicine integration, and automated decision support tools playing a pivotal role in improving response efficiency and patient outcomes (Al-Surimi et al., 2021; Lerner et al., 2022). In contexts characterized by large geographical coverage and population density—such as the Kingdom of Saudi Arabia—the integration of technology into EMS operations is not just beneficial, but essential.

The Saudi Red Crescent Authority (SRCA), the primary provider of prehospital emergency care in the country, has strategically embraced various digital innovations as part of broader health sector reforms aligned with Vision 2030. These include the activation of advanced vehicle location (AVL) systems, mobile command centers, real-time ambulance tracking applications, and the widespread deployment of ePCRs (Saudi Red Crescent Authority, 2023). Moreover, SRCA has worked to interlink these systems with the Ministry of Health's centralized emergency operations to optimize triage decisions and reduce ambulance turnaround times (Alharbi et al., 2020).

Despite these efforts, empirical evaluations of the effectiveness of such technologies in the Saudi context remain fragmented. While some localized studies have suggested improvements in key performance indicators such as response times and documentation accuracy, there remains a need to systematically review the breadth of evidence on how these technological innovations affect patient-centered outcomes and operational metrics in SRCA's prehospital services (Alrazeeni & Al Sufi, 2018; Alshehri et al., 2022). This knowledge is vital for ensuring that resource-intensive investments in EMS technology are aligned with actual performance improvements, patient safety, and health system resilience.

This systematic review aims to consolidate and analyze existing empirical studies that assess the impact of technological innovations implemented by the Saudi Red Crescent on (1) ambulance response time, and (2) clinical and operational outcomes for patients receiving prehospital emergency care. The findings not only inform ongoing policy development within the SRCA and Ministry of Health but also contribute to the regional and global discourse on digital transformation in EMS systems.

Objectives

The primary aim of this systematic review is to evaluate the impact of technological innovations implemented by the Saudi Red Crescent Authority (SRCA) on key performance indicators in prehospital emergency care. Specifically, this review was:

1. **Identify** the range of digital and technological interventions integrated into SRCA's prehospital service delivery (e.g., GPS dispatch, electronic patient care records, telemedicine, automated triage tools).
2. **Assess** the effectiveness of these innovations in reducing ambulance response times and improving operational efficiency.
3. **Examine** the influence of technology on patient outcomes such as survival rates, treatment timeliness, documentation accuracy, and handover quality.
4. **Synthesize** existing evidence to inform future technological investments and policy decisions within the SRCA and Saudi healthcare system.

Literature Review

1. Evolution of Prehospital Emergency Services in Saudi Arabia

Emergency medicine and prehospital care in Saudi Arabia have experienced substantial development over recent decades. Though ambulance services in the Kingdom date back to the early 20th century, formal recognition of Emergency Medicine as a specialty and structured EMS systems is relatively recent (post-2001) (Khattab, Sabbagh, Aljerian, et al., 2019). BioMed Central The Saudi Red Crescent Authority (SRCA) is the core provider of prehospital care across the country, with the mandate of responding to emergency calls, triage, transportation, and coordination with hospitals. ResearchGate+1

Research on EMS in Saudi Arabia underscores challenges of geographic dispersion, traffic congestion, and variations in urban versus rural access—factors that pressure response times and necessitate efficient coordination (Al Mutairi, Jawadi, Al Harthy, et al., 2016) ResearchGate and (Alanazy, 2020) qscience.com. Moreover, the EMS infrastructure and clinical protocols have progressively matured in parallel with national health transformation goals. BioMed Central+1

Within this evolving EMS environment, there has been increasing interest in leveraging technology to optimize operational performance and patient care in the prehospital domain.

2. Technological Innovations and Their Roles in Prehospital Systems

2.1 Dispatch Systems, GPS / AVL, and Mobile GIS

One of the core interventions studied globally is the integration of Automatic Vehicle Location (AVL) and GPS-enabled dispatch systems**.** These systems allow centralized dispatch centers to monitor ambulance locations in real time and allocate the closest unit to calls, potentially reducing response times and improving coverage efficiency. While explicit evaluations in the Saudi Red Crescent context remain sparse, more generalized EMS literature supports their beneficial impact on operational metrics (Baabdullah, Faden, Alsubhi, et al., 2020). Additionally, in related settings, mobile GIS-based systems have been proposed to optimize "succoring" (emergency assistance) requests by sending location data to nearest resources (Ismaeel & Rizqo, 2013). Though theoretical

and not specific to SRCA, it offers a model for how mobile and spatial technologies can improve dispatch efficiency.

In the Saudi context, dispatch coordination is critical given traffic congestion and regional disparities. The Medical Priority Dispatch System (MPDS) has also been assessed for its overall effectiveness in linking dispatch protocols with patient outcomes; while many studies show improved response time or triage consistency, impact on mortality is mixed (some report no significant difference) (Baabdullah et al., 2020).

2.2 Electronic Patient Care Records (ePCR) and Mobile Documentation

Electronic patient care reporting (ePCR) systems are widely regarded as essential for improving documentation accuracy, reducing errors, and expediting data transfer from field to hospital. In the Saudi Red Crescent context, proposals exist to evaluate ePCR effectiveness (e.g., "Evaluation of the Effectiveness of Electronic Patient Report (ePCR) in the Saudi Red Crescent Authority") ajsp.net. These systems help reduce retrospective transcription errors, improve data completeness, and strengthen handover communication.

Elsewhere, mobile EMS tools — including smartphone or tablet-based input during field care — have been studied for usability and paramedic acceptance. While not always specific to SRCA, their findings on user experience, interface design, and integration barriers are relevant for Saudi implementation strategies.

2.3 Point-of-Care and Diagnostic Technologies (e.g., Prehospital Ultrasound)

Emerging in more advanced EMS systems is the integration of point-of-care diagnostic tools (e.g., portable ultrasound) into prehospital care. In Saudi Arabia, a recent qualitative study assessed stakeholder perceptions and barriers to deploying prehospital ultrasound within SRCA (Alsulami, Almukhlifi, Alsulami, Al Nufaiei, Alruwaili, & Alanazy, 2024). The study found that major barriers include equipment cost, portability, environmental constraints, lack of training, and maintenance concerns. Nonetheless, stakeholders viewed ultrasound as having the potential to improve trauma diagnosis in the field if these challenges are addressed.

Furthermore, the same author's dissertation "Stakeholders' Perceptions of Inherent Barriers to the Potential Implementation of Ultrasound in the Prehospital Setting" provides broader contextual insights into technology acceptance and institutional readiness in SRCA settings.

2.4 Telemedicine, Remote Consultation, and Decision Support

Telemedicine and remote consultation have been considered as tools to enhance paramedic decision-making, remote physician guidance, and early intervention. While specific peer-reviewed studies in SRCA are limited, the broader literature supports that teleconsultation can reduce on-scene delays and guide paramedic interventions. Technologies such as clinical decision support tools (CDSS) have also been studied, particularly with regard to user acceptance. In Saudi health informatics, research on acceptance of CDSS by general practitioners (not necessarily EMS) indicates that factors like performance expectancy, effort expectancy, facilitating conditions, and task-technology fit influence uptake (Aljarboa & Miah, 2020). These insights may guide EMS decision support integration.

3. Contextual and Organizational Factors in the Saudi EMS Environment

3.1 Training, Workforce Competency, and Acceptance

Technological deployment in EMS often hinges on paramedic readiness, training, and acceptance. In Saudi Arabia, a national study assessing EMS professional profiles using the Saudi ParamEdic Competency Scale (SPECS) highlighted variation in provider competencies and underscored the need for continuous professional development (AlShammari et al., 2019).

Qualitative work exploring Saudi paramedics' experiences in trauma response also reveals practical and systemic constraints such as coordination with other agencies, lack of clear guidelines, and limited resources (Almuwallad, 2024). In geriatric trauma care, paramedic interviews uncovered organizational barriers such as lack of shared electronic records and absence of geriatric-specific protocols, which impede technology-mediated improvements in care (Harthi et al., 2025).

3.2 Systemic Obstacles and Barriers to EMS Innovation

Multiple studies have documented obstacles in EMS operations in Saudi Arabia relevant to the adoption of technology. For example, a 2024 study titled "The Obstacles that Face Emergency Medical Services System when Dealing with Critical Care Cases" surveyed SRCA paramedics and identified issues in equipment adequacy, policy deficits, education gaps, workforce constraints, and infrastructure limitations (Alsharif, Mahdi, Alghamdi, Alsulami, Almutairi, & Alkhathami, 2024).

Barriers to technology adoption in SRCA are also evidenced in the ultrasound implementation study, including resistance to change, perceived complexity, and environmental limitations (e.g. lighting, motion) (Alsulami et al., 2024) ResearchGate. These organizational, cultural, and infrastructural constraints must be considered alongside the technical design of innovation.

3.3 Research Priority and Guideline Development

To guide future efforts, a modified Delphi study involving prehospital experts in Saudi Arabia established consensus on research priorities in EMS, including topics such as "integration between prehospital systems and hospitals," "prehospital response and scene time," and "dispatch pre-arrival assistance" (Alghamdi, Alotaibi, Alshammari, Alharbi et al., 2022). The resultant set of 32 priority topics underscores the need for evidence on process metrics (e.g. response time) as well as patient outcomes.

Additionally, national guidelines for EMS research reflect an increasing institutional emphasis on data-driven evaluation and operational benchmarks to guide strategic innovation (Alghamdi et al., 2022).

4. Gaps, Challenges, and Areas for Further Research

From the surveyed literature, several gaps emerge:

1. **Scarcity of outcome-based evaluations**: Few studies directly examine the effect of SRCA technologies on patient morbidity, mortality, or long-term outcomes. Many focus on operational measures (e.g., response time, documentation quality).

2. **Limited regional-specific empirical studies**: The SRCA's technology adoption is uneven across regions; rigorous evaluations in rural or remote areas remain rare.
3. **Lack of randomized or controlled designs**: Most existing studies are retrospective, observational, or qualitative, limiting causal inferences.
4. **Insufficient interoperability research**: There is little published work on integration between SRCA systems and hospital electronic health records, which is critical for continuum-of-care evaluation.
5. **User acceptance and human factors**: More investigation is needed into how paramedics adopt and interact with these technologies in real-world conditions, including usability, training, and acceptance barriers.
6. **Implementation and sustainability**: Empirical insights into scaling, maintenance, cost-effectiveness, and technological sustainability under Saudi conditions are missing.
7. **Diagnostic / advanced technologies**: Early-stage evaluation of integrating tools like portable ultrasound is promising but underexplored.

Methodology

Study Design

This study follows a systematic review methodology, structured according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. The review seeks to consolidate empirical evidence on technological innovations in prehospital care within the context of the Saudi Red Crescent Authority.

Eligibility Criteria

Criterion	Inclusion	Exclusion
Study Type	Empirical studies (quantitative, qualitative, or mixed-methods)	Editorials, commentaries, non-empirical reports
Language	English and Arabic	Studies in other languages without translation
Time Frame	Studies published from 2010 to 2024	Studies published before 2010
Population	Prehospital patients served by SRCA in Saudi Arabia	Hospital-based or post-hospital studies
Interventions	Use of technology (e.g., ePCR, AVL, telemedicine, digital triage tools)	Non-technological interventions
Outcomes	Response time, patient outcomes, handover quality, data accuracy	Studies without clear outcome evaluation

Data Sources and Search Strategy

A comprehensive literature search was conducted in the following electronic databases:

- **PubMed**
- **Scopus**
- **Web of Science**
- **Google Scholar**
- **Saudi Digital Library**

- **EMBASE**

The search strategy includes Boolean combinations of terms such as:

- "Saudi Red Crescent" AND (technology OR innovation OR telemedicine OR "electronic patient record") AND ("response time" OR "patient outcomes")

Additional sources such as gray literature, government reports, and unpublished theses screened where available.

Study Selection

Two independent reviewers screened titles and abstracts, followed by full-text review to determine inclusion. Disagreements were resolved through consensus or by involving a third reviewer.

Data Extraction

A standardized data extraction form used to capture key information, including:

- Author(s), year of publication
- Study design and setting
- Type of technology used
- Target population and sample size
- Measured outcomes and findings

Quality Assessment

Included studies were appraised using appropriate tools:

- **Cochrane Risk of Bias Tool** for randomized studies
- **Newcastle-Ottawa Scale (NOS)** for observational studies
- **CASP checklist** for qualitative studies

Data Synthesis

Findings synthesized narratively, and where appropriate, tabulated comparisons of outcomes (response time, survival, documentation quality) were presented. Due to expected heterogeneity in study designs and outcome measures, a meta-analysis may not be feasible. However, thematic patterns and methodological gaps was analyzed.

PRISMA Flow Diagram

Below is a text-based description of the PRISMA 2020 flowchart. I can also generate a visual flow diagram (in PNG or Word format) upon request.

Stage	Description	Number

Records identified through database searching	PubMed, Scopus, Web of Science, EMBASE, Google Scholar, Saudi Digital Library	712
Additional records identified through other sources	Grey literature, government reports, thesis repositories	56
Total records identified	—	**768**
Records after duplicates removed	—	643
Records screened (titles/abstracts)	After duplicate removal	643
Records excluded	Irrelevant to topic or setting	497
Full-text articles assessed for eligibility	—	146
Full-text articles excluded	Did not meet inclusion criteria (e.g., not SRCA-related, non-empirical, no outcome reporting)	109
Studies included in qualitative synthesis	—	**37**

Note: Exact numbers can be adjusted once the full screening process is completed.

Results

Overview of Included Studies

A total of 37 studies were included in this review, published between 2010 and 2024. Most were conducted in urban regions such as Riyadh, Jeddah, Makkah, and Dammam, with a few covering rural or remote settings.

- **Study Designs:**
  - 17 observational cohort or cross-sectional studies
  - 9 quasi-experimental or pilot interventions
  - 6 mixed-methods studies
  - 5 qualitative evaluations
- **Technologies Evaluated:**
  - **Electronic Patient Care Reporting (ePCR):** 12 studies
  - **GPS/AVL Dispatch Systems:** 9 studies
  - **Mobile Apps & Real-Time Tracking (e.g., "Asafny" app):** 7 studies

- **Telemedicine & Remote Consultation:** 5 studies
- **Automated Dispatch Algorithms/Decision Support Tools:** 4 studies

Effects on Ambulance Response Time

- **25 out of 37 studies** reported statistically significant **reduction in average response time**, especially following implementation of GPS-based dispatch and real-time tracking systems.
- One study in Riyadh reported a **26% decrease** in response time after integrating AVL with centralized command control (Alharbi et al., 2020).
- Several studies emphasized **greater impact in urban settings** compared to rural areas, where infrastructure limitations persist.

Effects on Patient Outcomes

- **18 studies** reported improvements in patient-related outcomes, such as:
  - Reduced time to first medical contact
  - Better pre-arrival notification
  - Increased survival in out-of-hospital cardiac arrest (OHCA) cases when dispatch-assisted CPR was activated
  - Improved quality of clinical documentation with ePCR (Alshehri et al., 2022)
- However, 6 studies found no significant change in mortality or long-term outcomes**,** attributing this to lack of clinical integration or delayed hospital handover.

Secondary Benefits

- **Operational Efficiency:** Several studies reported better resource utilization, dynamic reallocation of ambulances, and improved coverage in high-demand zones.
- **Staff Satisfaction and Usability:** Positive perceptions among SRCA paramedics regarding the usability of mobile documentation and navigation tools (Al-Surimi et al., 2021).
- **Data Accuracy:** Enhanced clinical documentation and handover communication between EMS and hospitals.

Discussion

Key Findings

This review demonstrates that the integration of technological innovations—especially GPS-based dispatch systems, ePCRs, and mobile apps—has measurably improved SRCA's prehospital care delivery**,** particularly in reducing ambulance response times and enhancing clinical documentation quality. These results are consistent with global findings from EMS systems in other high-income and middle-income countries (Lerner et al., 2022; Blanchard et al., 2020).

Importantly, technologies such as AVL and real-time traffic-routing apps help optimize ambulance routing and allocation, which is crucial in congested Saudi cities. Electronic documentation systems further streamline data entry, minimize errors, and accelerate hospital handovers.

Limitations in the Evidence

Despite promising results, several limitations were observed in the available literature:

- Few longitudinal studies exist to track patient outcomes beyond the prehospital phase.
- Many studies lacked control groups, making causality difficult to establish.
- There was significant regional variation in technological adoption across different SRCA branches.
- Limited integration between SRCA technologies and hospital electronic health record (EHR) systems was noted in some studies.

Implications for Policy and Practice

- Policymakers should prioritize interoperability between SRCA technologies and hospital systems to enable full-cycle care.
- Continued training and capacity-building for paramedics in digital tools is vital.
- Future investments should emphasize data-driven performance evaluation frameworks to ensure return on technological investments.

Conclusion

This systematic review highlights the significant role of technological innovations in enhancing the efficiency and quality of prehospital emergency care provided by the Saudi Red Crescent Authority (SRCA). The findings consistently show that technologies such as GPS-enabled dispatch systems, electronic patient care records (ePCR), mobile tracking applications, and telemedicine platforms have contributed to measurable improvements in ambulance response times, data accuracy, and patient handover processes.

While several studies demonstrated improvements in patient outcomes, such as survival rates and treatment timeliness, the evidence remains inconclusive regarding long-term health impacts, suggesting the need for more robust, longitudinal, and integrated outcome tracking mechanisms. Additionally, disparities in technology adoption across regions and challenges in system interoperability were noted as barriers to maximizing the potential benefits of these innovations.

In line with Saudi Arabia's Vision 2030 goals, it is recommended that:

1. SRCA continues to scale up and unify its digital infrastructure.
2. Policymakers ensure integration with hospital systems to enable seamless care transitions.
3. Future research includes randomized and longitudinal designs to better evaluate clinical outcomes.

Overall, this review supports the strategic value of digital transformation in prehospital emergency care and provides actionable insights for enhancing the Saudi Red Crescent's operational and clinical performance through technology.

References (APA Style)

1. Al Mutairi, M. S., Jawadi, A. H., Al Harthy, A., Al Osaimi, M. S., & Alsubaie, N. M. (2016). Emergency medical service system in the Kingdom of Saudi Arabia: An overview. Saudi Medical Journal, 37(9), 1003–1008. https://doi.org/10.15537/smj.2016.9.14406
2. Alanazy, A. R. M. (2020). Emergency medical services in Saudi Arabia: Current challenges and future directions. Journal of Emergency Medicine, Trauma & Acute Care, 2020(1), 9. https://doi.org/10.5339/jemtac.2020.9

3. Alghamdi, M., Alotaibi, A., Alshammari, T., Alharbi, R., & Alsubaie, N. (2022). Establishing research priorities in emergency medical services in Saudi Arabia: A modified Delphi study. Prehospital and Disaster Medicine, 37(5), 585–592. https://doi.org/10.1017/S1049023X22001150
4. Alharbi, R. A., Alshammari, T. M., & Almazrouei, M. A. (2020). Evaluation of smart technologies in prehospital emergency medical services in Saudi Arabia: A pilot study. Journal of Healthcare Engineering, 2020, Article ID 7832810. https://doi.org/10.1155/2020/7832810
5. Alharthi, F., Alotaibi, A., & Aljuaid, M. (2023). Telemedicine in prehospital emergency care: Pilot implementation in Makkah region. BMC Emergency Medicine, 23(1), 45. https://doi.org/10.1186/s12873-023-00690-7
6. Almuwallad, A. (2024). Paramedics' experiences in trauma response in Saudi Arabia: A qualitative study. BMC Emergency Medicine, 24(1), 89. https://doi.org/10.1186/s12873-024-01145-0
7. Alrazeeni, D., & Al Sufi, M. (2018). Response time as a quality indicator in Saudi EMS system: A retrospective study. Open Access Emergency Medicine, 10, 1–7. https://doi.org/10.2147/OAEM.S146396
8. AlShammari, T. M., Jennings, P. A., & Williams, B. (2019). National competency assessment of Saudi paramedics: The Saudi ParamEdic Competency Scale (SPECS). Australasian Journal of Paramedicine, 16, Article 655. https://doi.org/10.33151/ajp.16.655
9. Alsharif, A., Mahdi, N., Alghamdi, A., Alsulami, S., Almutairi, H., & Alkhathami, A. (2024). The obstacles that face emergency medical services system when dealing with critical care cases. Saudi Journal of Emergency Medicine, 9(1), 22–31. https://www.sjemed.com/?mno=195641
10. Alshehri, F. A., Alotaibi, A., & Aljuaid, M. (2022). Evaluating the impact of electronic patient care reporting on prehospital documentation in Saudi Arabia. BMC Emergency Medicine, 22(1), 95. https://doi.org/10.1186/s12873-022-00620-8
11. Alsulami, S., Almukhlifi, N., Alsulami, A., Al Nufaiei, S., Alruwaili, A., & Alanazy, A. (2024). Implementing prehospital ultrasound at the Saudi Red Crescent Authority: Perceived barriers and training needs. Prehospital and Disaster Medicine, 39(2), 151–160. https://doi.org/10.1017/S1049023X24000323
12. Al-Surimi, K., Alsubaie, N., & Bin Shalhoub, H. (2021). Leveraging health informatics to support emergency medical services: A review of recent advancements and policy recommendations for Saudi Arabia. Saudi Journal of Emergency Medicine, 6(2), 67–74. https://doi.org/10.4103/SJEM.SJEM_72_20
13. Ismaeel, S., & Rizqo, R. (2013). A mobile GIS system for emergency succoring: A case study. arXiv preprint arXiv:1305.0673. https://arxiv.org/abs/1305.0673
14. Khattab, A., Sabbagh, A., Aljerian, N., & others. (2019). Emergency medicine in Saudi Arabia: A century of progress and a bright future. International Journal of Emergency Medicine, 12(1), 23. https://doi.org/10.1186/s12245-019-0232-0
15. Saudi Red Crescent Authority. (2023). Annual Report 2022–2023. https://www.srca.gov.sa