

## **Case Study**

Isabel L. Rodriguez,

Janet Garcia

School of Advanced Technology, Algonquin College

24W\_HLT0233\_310 Workflow Human Factors Patient

Prof. Sue McCaig

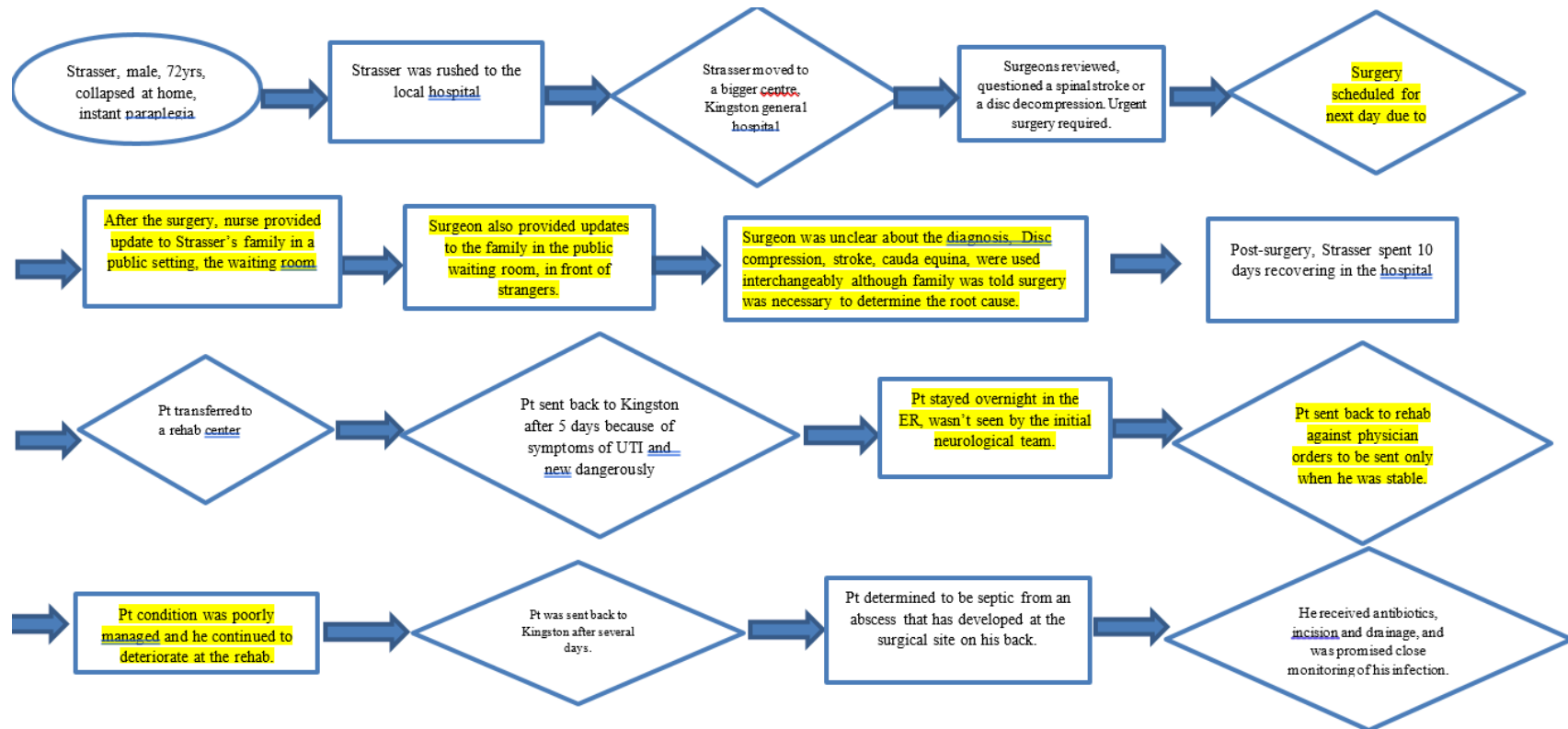
April 12, 2024

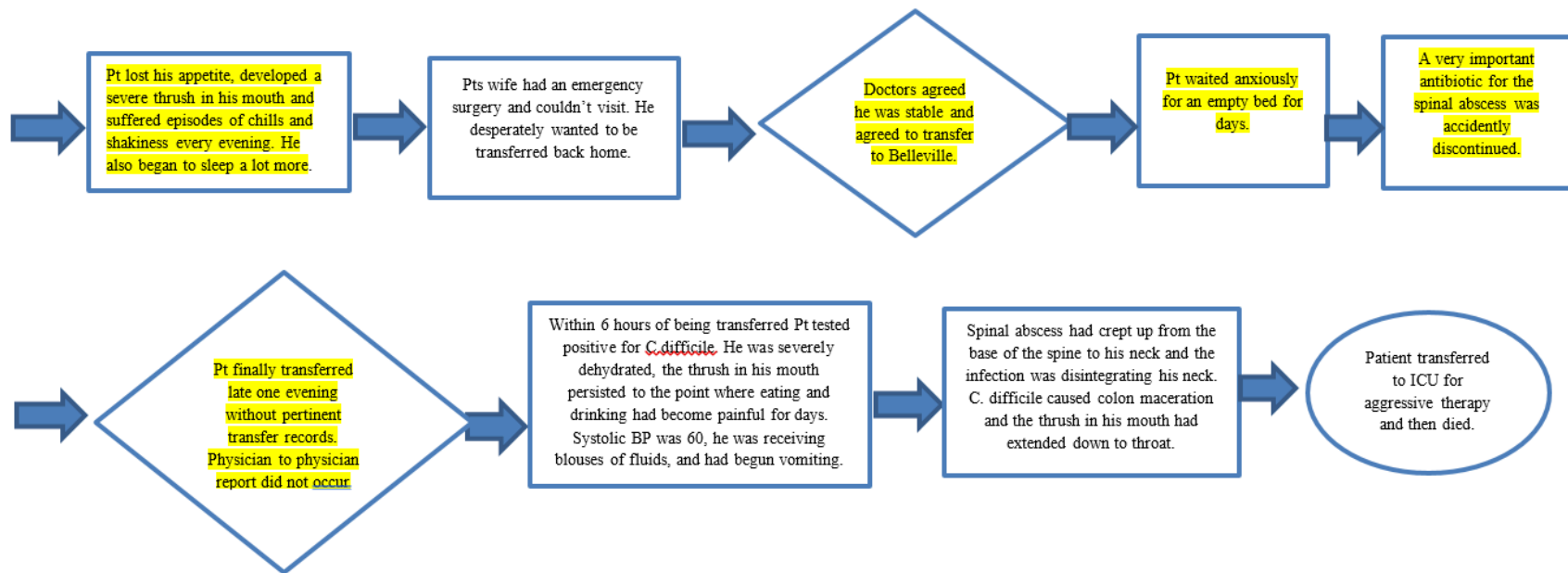
## **Case Study**

The case of Herbert Strasser highlights a series of systemic failures within the healthcare system, leading to tragic consequences. Strasser's journey begins with a sudden collapse at home, followed by urgent surgery delayed due to budget constraints. Throughout his hospitalization, communication lapses and care fragmentation plague his treatment, with sensitive information shared publicly and multiple transfers between facilities exacerbating delays and complicating his care. Despite presenting with concerning symptoms and critical medical conditions, such as elevated blood sugar levels, Strasser is transferred back to rehabilitation against physician orders. Medication errors further compound his deteriorating health, including the accidental discontinuation of vital antibiotics. Tragically, Strasser's condition worsens, ultimately leading to his untimely death due to untreated infections and medical errors. Carole Jukosky's relentless advocacy for her father uncovers systemic issues, prompting improvements in communication protocols, patient safety measures, and care standards. This case underscores the critical need for effective communication, coordinated care, and patient advocacy to prevent medical errors and enhance patient outcomes within the healthcare system.

### Identify Human Factors seen in the critical incident

- **Communication breakdowns:** Ambiguous terminology and incomplete communication between healthcare providers and facilities resulted in misunderstandings and errors in patient care. Surgeons' unclear communication with the family contributed to confusion.
- **Inadequate information transfer:** Critical patient information was inconsistently transferred between facilities, leading to gaps in care and treatment delays.
- **Poor coordination of care:** Fragmented care coordination across healthcare settings resulted in disjointed management of the patient's health issues, contributing to diagnosis delays and inappropriate treatments.
- **Patient safety culture:** Some healthcare settings displayed a lack of patient safety culture, with instances of insensitive behavior and breaches of patient privacy undermining trust.
- **Patient advocacy and empowerment:** The daughter's proactive involvement led to improvements in healthcare processes, highlighting the importance of patient engagement





### Evaluate system workflow using (RCA, LEAN etc) to identify gaps

Due to the involvement of multiple parties across three health facilities, pinpointing responsibility for adverse events can be challenging. RCA tools can help determine causal factors in Mr. Strasser's case, aiding in process and system redesign (Al-Qoraèn, 2014). Evaluation will utilize fishbone RCA methodology, categorizing causes into people, systems, tools, and processes (Burns et al., 2018; Ozkaynak et al., 2022). Participation in Root Cause Analysis will involve leadership from the implicated institutions and those closely involved in relevant processes (Uberoi et al., 2007).

The steps that would be taken to conduct the RCA will include:

- **Form Interprofessional Team:** Gather members from various disciplines relevant to Mr. Strasser's case, such as physicians, surgeons, nurses, administrators, rehabilitation specialists and quality improvement specialists.
- **Define Problem:** Clearly outline the problem or sentinel event, ensuring all team members understand it thoroughly. In this case, the main problem is the avoidable suffering and death of Mr Strasser.
- **Establish Communication Protocols:** Create a structured process for regular communication with senior leadership and stakeholders throughout the RCA process, ensuring transparency and timely updates.
- **Identify Systemic Factors:** Utilize the fishbone diagram to categorize potential systematic factors contributing to the error, including people, process, equipment, and environment.
- **Collect Data:** Gather relevant data through methods such as reviewing medical records, conducting interviews, analyzing incident reports, and examining policies and procedures.
- **Implement Immediate Changes:** Propose and implement immediate interventions to address imminent risks and prevent recurrence during the RCA process.
- **Evaluate Root Causes and Interrelationships:** Assess identified root causes and their interactions using the fishbone diagram to determine their significance in causing the event.

- **Explore Risk-Reduction Strategies:** Brainstorm and explore strategies to reduce risks and improve processes to prevent similar errors in the future.
- **Communicate Proposed Modifications:** Present proposed process modifications and improvement strategies to senior leadership and stakeholders for review and approval.
- **Evaluate Acceptability of Modifications:** Collaborate with stakeholders to evaluate the acceptability and feasibility of proposed changes, adjusting strategies as needed.
- **Document Findings and Recommendations:** Document RCA findings, including root causes, proposed modifications, and recommendations for improvement, ensuring thorough documentation for accountability.
- **Implement and Monitor Changes:** Implement approved modifications and improvement strategies, establishing mechanisms for monitoring effectiveness over time to ensure sustained improvements in patient safety and quality of care (Singh et al., 2023).

Using the fishbone methodology for the RCA if this incident, gaps are categorized as follows:

- **People Issues:**
  - Poor communication among medical staff
  - Patient reluctance to question medical decisions
  - Inadequate coordination and follow-up between healthcare providers

- Poor patient management
- **Process Issues:**
  - Lack of standardized procedures for patient transfer and handoff
  - Inadequate patient update and disclosure processes
  - Sub-optimal critical patient monitoring and management
  - Inadequate documentation and sharing of medical information
  - Absence of protocols for managing complex cases
- **System Issues:**
  - Inadequate and non-interoperable electronic medical records (EHR) system
  - Insufficient resources allocated to healthcare facilities
  - Insufficient training and education on patient safety and quality improvement initiatives
- **Tools Issues:**
  - Insufficient monitoring tools for tracking patient progress and response to treatment

Although RCA is a promising approach for learning from mistakes, it doesn't always deliver expected benefits (Peerally et al., 2016). To enhance the likelihood of identifying and addressing issues using our RCA, the following measures will be taken:



- Ensure RCA investigators have specialist expertise in relevant theories, ergonomics, human factors, and analytical methods.
- Recognize and value the contributions of Mr Strassers relatives to the investigative process, offering a unique end-user perspective.
- Clarify the distribution of responsibility between investigating stakeholders and others involved.
- Focus on aggregated incident analysis using a systems approach, to prioritize interventions based on harm and associated risks (Peerally et al., 2016).

## **Recommendations**

- **Communication:**

- Updates on Strasser's condition were provided to their family in the public setting of the waiting room, raising concerns about privacy and confidentiality. Healthcare professionals must ensure sensitive updates are communicated securely, respecting patient and family privacy rights.

- **Handoff Reports:**

- Inadequate communication has negative effects on patient care, leading to delayed evaluations, medication errors, and complications. Lapses in communication are a major cause of unexpected events and patient harm. The SBAR model provides a structured

approach to effective patient information communication, covering situation, background, assessment, and recommendation. (Clanton J., et al. 2018)

- **Physician-to-physician communication:**

- Communication breakdowns can lead to patient harm, care delays, and increased costs. Lack of timely communication regarding referrals can impact physicians' confidence in providing high-quality care (Shannon D., 2012).

- **Establishment of Clear Protocols and Standards:**

- Set accurate protocols and standards for physician-to-physician contact, detailing how patient data and diagnoses are shared.
    - Implement standardized report formats for comprehensive patient information sharing.

- **Usage of Technological Tools:**

- Utilize secure chat platforms or electronic medical record (EMR) systems for quick and accurate communication.
    - Examples include Accuro EMR, Telus EMR, and Med Access EMR.

- **Implementation of Case Review Sessions:**

- Conduct regular case review meetings for doctors involved in patient care to collaborate on treatment plans and modifications.

- **Healthcare-provider and patient communication**

- Empathy plays a key role in enhancing patient-physician relationships and improving health outcomes. This includes active listening, understanding patients' perspectives, and respecting their privacy and confidentiality (Amutio et al.).

- **Privacy and Confidentiality:**

- Maintain patient privacy and confidentiality, especially in public places like waiting rooms, by conducting medical discussions in private spaces.

- **Clear and Comprehensive Information:**

- Ensure healthcare professionals provide clear, thorough, and understandable information about patients' conditions, diagnoses, treatments, and prognosis to facilitate decision-making and cooperation.

- **Empathy and Compassion:**

- Demonstrate empathy and compassion by listening to patients' concerns, understanding their perspectives, and offering emotional support to strengthen the patient-provider relationship.

- **Instruction and Training:**

- Provide healthcare professionals with instruction and training in effective communication techniques, including active listening, empathy, and cultural competency, to facilitate interactions with patients of diverse backgrounds and needs.

- **Diagnosis of Spinal problems**

- The surgeon's communication regarding Strasser's diagnosis was unclear, using terms like disc compression, stroke, and cauda equina interchangeably. Despite being informed that surgery was necessary for determining the root cause, conflicting information about the specific diagnosis was received by the family. This lack of clarity can lead to confusion and anxiety, emphasizing the importance of clear communication in healthcare settings.
- All three conditions can present with similar symptoms, however, clinical assessment, and imaging studies such as MRI or CT scans and angiography can be used to distinguish between them. It was not stated that any imaging studies were used to confirm Mr Strassers diagnosis. Accurate diagnosis is crucial for guiding appropriate management and improving patient outcomes.

- **Care coordination and continuity of care, Interoperable EHR**

- Care coordination and continuity of care are vital components of effective healthcare delivery, yet they were notably lacking in the described case. The patient's transfer without pertinent records and the absence of physician-to-physician reports disrupted the continuity of care, potentially leading to treatment delays and

safety concerns. Additionally, the patient spent the night in the emergency room without being evaluated by the initial neurological team, further highlighting communication and coordination gaps. These incidents emphasize the importance of interoperable electronic health records (EHR) and comprehensive care coordination protocols to ensure seamless transitions between healthcare providers and continuity of care for patients.

- To address these issues, healthcare organizations must implement robust care coordination processes. This includes ensuring complete and accessible transfer records, facilitating effective communication between providers, and establishing protocols for handovers and patient transfers.
- Interoperable EHR systems play a crucial role in improving communication and coordination in healthcare. They enable seamless sharing of patient information among different providers and systems, ensuring critical data availability when and where needed. Healthcare organizations should prioritize the adoption of interoperable EHR systems and standards, leveraging technologies such as health information exchanges (HIEs) and secure messaging platforms.
- The patient's overnight stay in the emergency room without evaluation by the neurological team raises concerns about patient triage, resource allocation, and care prioritization. Healthcare facilities should establish clear triage criteria, optimize staffing levels, and improve communication channels to ensure timely evaluation and treatment based on clinical needs.

- Addressing these challenges requires a multi-faceted approach, combining technological solutions, process improvements, and patient-centered care to enhance care coordination and deliver high-quality healthcare services.

- **Patient transfer protocols and care fragmentation**

- The patient faced challenges with patient transfer protocols and care fragmentation throughout their healthcare journey. Late transfer without pertinent records and a lack of physician-to-physician reporting disrupted continuity of care. Despite stable conditions, delays in finding a bed caused anxiety, and returning to rehab against medical advice showed a breakdown in communication and adherence. Effective transfer protocols, comprehensive communication, and aligning care decisions with medical assessments are crucial to prevent complications and ensure patient safety.
- To address these issues:
  - Establish Clear Transfer Protocols: Develop standardized protocols for transferring patients, ensuring complete sharing of pertinent medical information between providers.
  - Ensure Effective Physician-to-Physician Communication: Implement guidelines for direct communication between attending physicians during patient transfers to relay accurate medical information and treatment plans.

- **Improve Bed Management:** Enhance bed management processes to minimize transfer delays and ensure timely access to appropriate care settings.
- **Strengthen Clinical Decision-Making:** Require thorough clinical assessments and justification for transfers, particularly for unstable patients.
- **Legal Considerations:** Review laws and regulations governing patient transfers to ensure compliance with legal requirements and minimize legal risks.
- **Education and Training:** Provide healthcare providers with education and training on proper transfer protocols and effective communication strategies to advocate for patients' best interests.

- **Medication errors**

- A critical medication error occurred when a crucial antibiotic necessary for treating the spinal abscess was accidentally discontinued, jeopardizing the treatment plan and potentially compromising the patient's recovery. Robust medication management protocols and systems are essential to prevent such errors and ensure the timely and accurate administration of medications in healthcare settings.
- To address this issue:

- **Implement Barcode Medication Administration (BCMA):** Introduce BCMA systems to verify medication administration at the point of care, reducing the risk of errors such as medication omissions or discontinuations (Canadian Journal of Nursing Informatics, n.d).
- **Utilize Electronic Health Records (EHRs):** Leverage EHR systems to flag and alert healthcare providers about critical medications, such as antibiotics for serious infections, to minimize the risk of errors during medication management.
- **Standardize Medication Reconciliation:** Develop standardized procedures for medication reconciliation during transitions of care, ensuring that all prescribed medications, including antibiotics, are accurately documented and continued without interruption.
- **Provide Staff Education and Training:** Offer comprehensive education and training programs to healthcare staff on medication safety principles, including the importance of medication reconciliation, double-checking orders, and adhering to best practices for antibiotic administration.
- **Establish Error Reporting Systems:** Encourage a culture of transparency and reporting by implementing systems for healthcare staff to report medication errors and near-misses. Use this data to identify systemic issues and implement corrective actions to prevent future errors.



- **Involve Patients and Families:** Engage patients and their families in medication safety initiatives, providing education on the importance of adhering to prescribed medications and empowering them to ask questions and raise concerns about medication management.

- **Hospital management and resource availability**

- Hospital management and resource availability significantly influence patient care and treatment outcomes. Budget constraints affecting surgery scheduling underscore the challenge of balancing financial considerations with patient needs.
- To address these issues:

- **Addressing Resource Availability and Cost Management:**

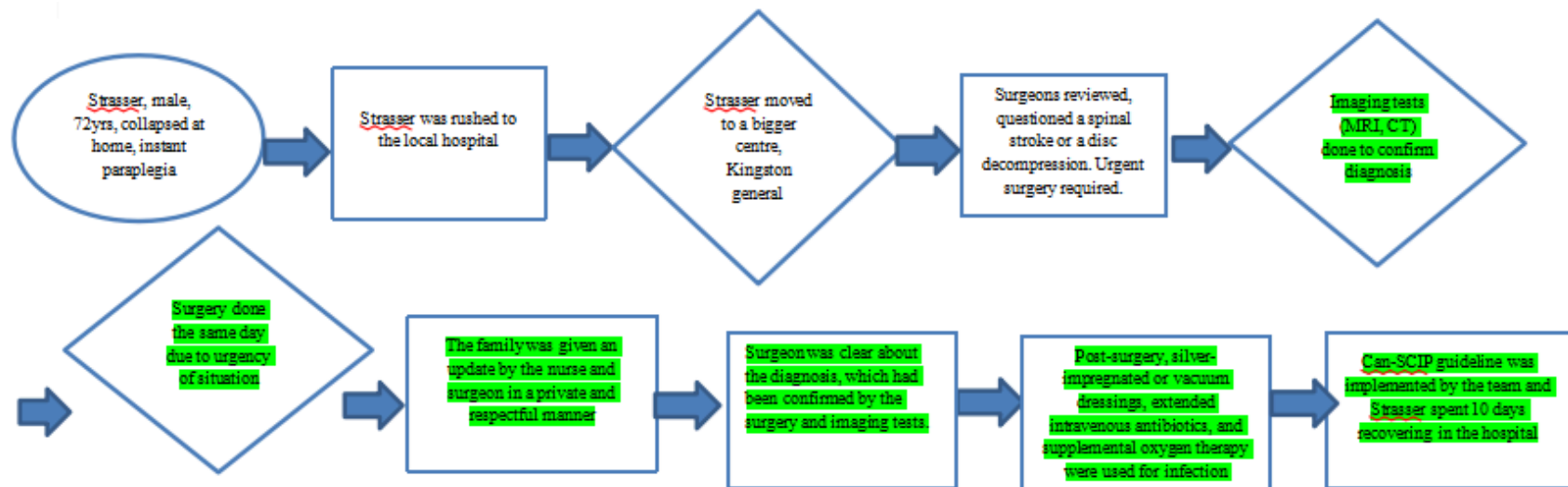
- Allocate sufficient budget for essential procedures to prevent delays in management of critical cases (Lack of medical resources cost Canadians dearly: Op-ed, 2023).
    - Regularly assess the cost-efficiency of outsourcing procedures versus in-house performance.
    - Explore opportunities to expand resources,, hiring staff, and acquiring necessary equipment (Lack of medical resources cost Canadians dearly: Op-ed, 2023).

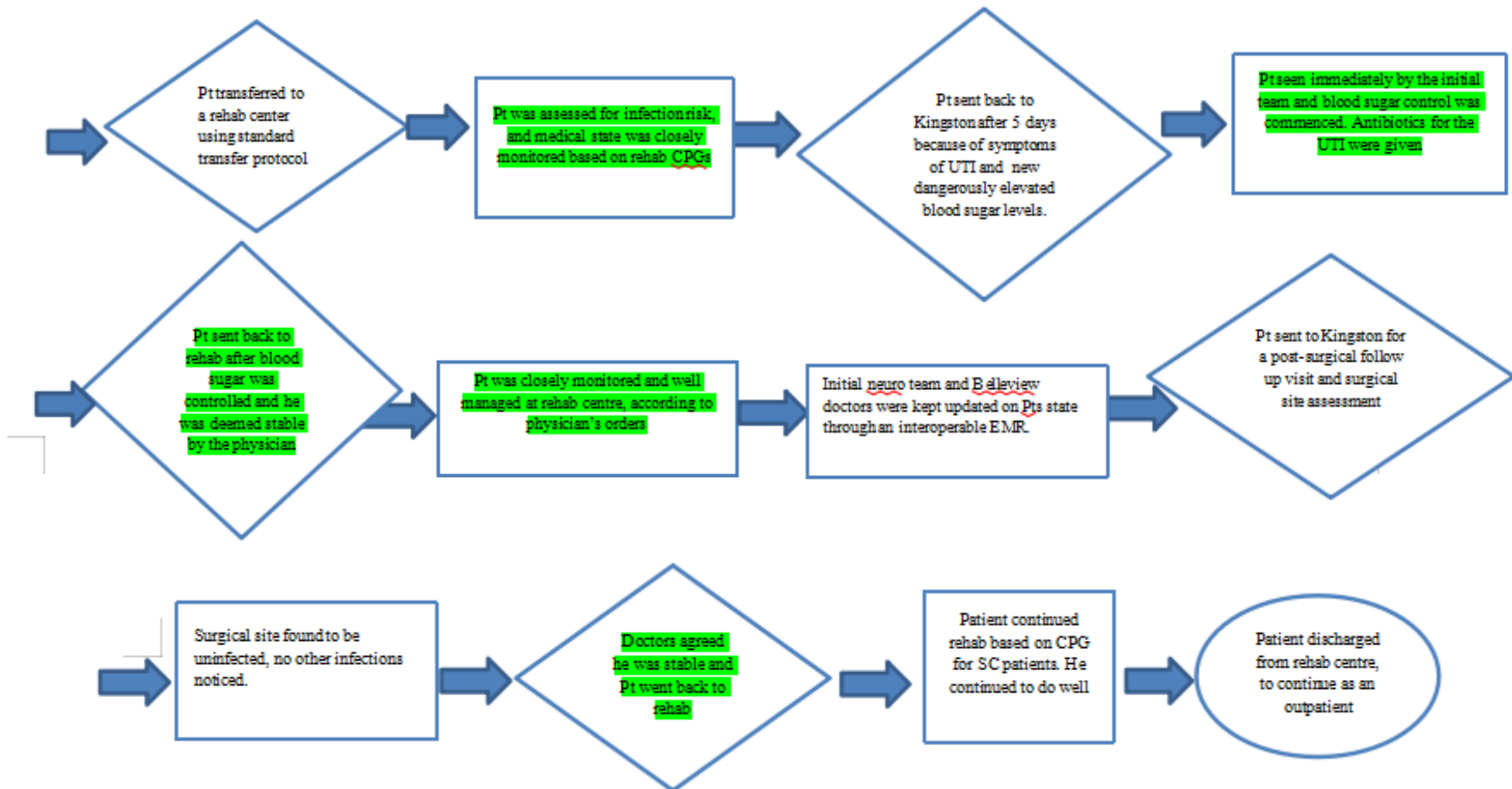
- **Quality of care**

- To enhance the quality of care, adherence to Clinical Practice Guidelines (CPGs) and protocols is crucial. CPGs provide evidence-based recommendations, such as those outlined in Can-SCIP for spinal cord injury

management, ensuring standardized, high-quality practice (Patsakos et al., 2021). Additionally, adherence to CPGs regarding the type and timing of rehabilitation, as recommended by Fehlings et al. (2017), is essential to ensure patients are medically stable before transfer.

- Preventing postoperative surgical site infections (SSIs) is imperative. Strategies such as screening for *Staphylococcus aureus*, alcohol-based skin preparation, and antibiotic prophylaxis can mitigate infection risks (Atesok et al., 2020). Moreover, implementing interventions like silver-impregnated dressings and extended antibiotic therapy post-surgery can further reduce SSIs and enhance patient outcomes





## References

- Adler-Milstein, J., DesRoches, C. M., Kralovec, P., Foster, G., Worzala, C., Charles, D., Searcy, T., & Jha, A. K. (2015). Electronic Health Record Adoption In US Hospitals: Progress Continues, But Challenges Persist. *Health Affairs*, 34(12), 2174–2180. <https://doi.org/10.1377/hlthaff.2015.0992>
- Atesok K, Papavassiliou E, Heffernan MJ, Tunmire D, Sitnikov I, Tanaka N, Rajaram S, Pittman J, Gokaslan ZL, Vaccaro A, Theiss S. Current Strategies in Prevention of Postoperative Infections in Spine Surgery. *Global Spine J*. 2020 Apr;10(2):183-194. doi: 10.1177/2192568218819817. Epub 2019 Jan 3. PMID: 32206518; PMCID: PMC7076595.
- Burns, L. R., Bradley, E.H., Weiner, B.J.(2018). Shortell & Kaluzny's Health Care Management: Organization Design and Behavior (7th ed).
- Canada, H. (2019, September 17). Government of Canada. Canada.ca. <https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/health-care-system/canada.html>
- Clanton, J., Clark, M., Loggins, W., & Herron, R. (2018). Effective handoff communication. Vignettes in patient safety. London: IntechOpen, 2, 25-44.

- Dale, – Anthony. (n.d.). Covid-19's impact on hospital services. CIHI.  
<https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/hospital-services>
- Factors affecting the impact of barcode medication administration technology in reducing medication administration errors by nurses. Factors Affecting the Impact of Barcode Medication Administration Technology in Reducing Medication Administration Errors by Nurses | Canadian Journal of Nursing Informatics. (n.d.).  
<https://cjni.net/journal/?p=5368>
- Fehlings MG, Tetreault LA, Aarabi B, Anderson P, Arnold PM, Brodke DS, Chiba K, Dettori JR, Furlan JC, Harrop JS, Hawryluk G, Holly LT, Howley S, Jeji T, Kalsi-Ryan S, Kotter M, Kurpad S, Kwon BK, Marino RJ, Martin AR, Massicotte E, Merli G, Middleton JW, Nakashima H, Nagoshi N, Palmieri K, Singh A, Skelly AC, Tsai EC, Vaccaro A, Wilson JR, Yee A, Burns AS. A Clinical Practice Guideline for the Management of Patients With Acute Spinal Cord Injury: Recommendations on the Type and Timing of Rehabilitation. *Global Spine J.* 2017 Sep;7(3 Suppl):231S-238S. doi: 10.1177/2192568217701910. Epub 2017 Sep 5. PMID: 29164029; PMCID: PMC5684839.
- Hsia, R. Y., Asch, S. M., Weiss, R. E., Zingmond, D., Liang, L.-J., Han, W., McCreath, H., & Sun, B. C. (2011). Hospital Determinants of Emergency Department Left Without Being Seen Rates. *Annals of Emergency Medicine*, 58(1), 24-32.e3. <https://doi.org/10.1016/j.annemergmed.2011.01.009>

- Kripalani, S., LeFevre, F., Phillips, C. O., Williams, M. V., Basaviah, P., & Baker, D. W. (2007). Deficits in Communication and Information Transfer Between Hospital-Based and Primary Care Physicians. *JAMA*, 297(8), 831. <https://doi.org/10.1001/jama.297.8.831>
- Lack of medical resources cost Canadians dearly: Op-ed. Fraser Institute. (2023, October 18). <https://www.fraserinstitute.org/article/lack-of-medical-resources-cost-canadians-dearly>
- Mayo Foundation for Medical Education and Research. (2023, October 24). Herniated disk. Mayo Clinic. <https://www.mayoclinic.org/diseases-conditions/herniated-disk/symptoms-causes/syc-20354095>
- NorthWestern Medicine. (n.d.). What is a spinal stroke? <https://www.nm.org/healthbeat/healthy-tips/what-is-a-spinal-stroke>
- Ozkaynak, M., Unertl, K. M., Johnson, S. A., Brixey, J. J., & Haque, S. (2022). Clinical workflow analysis, process redesign, and quality improvement. In Springer eBooks (pp. 103–118). [https://doi.org/10.1007/978-3-030-93765-2\\_8](https://doi.org/10.1007/978-3-030-93765-2_8)
- Patsakos EM, Bayley MT, Kua A, Cheng C, Eng J, Ho C, Noonan VK, Querée M, Craven BC; Can-SCIP Guideline Expert Panel. Development of the Canadian Spinal Cord Injury Best Practice (Can-SCIP) Guideline: Methods and

overview. J Spinal Cord Med. 2021;44(sup1):S52-S68. doi: 10.1080/10790268.2021.1953312. PMID: 34779719; PMCID: PMC8604491.

- Peerally, M. F., Carr, S., Waring, J., & Dixon-Woods, M. (2016). The problem with root cause analysis. BMJ Quality & Safety, bmjqs-005511. <https://doi.org/10.1136/bmjqs-2016-005511>
- Singh, G., Patel, R. H., & Boster, J. (2023, May 30). Root cause analysis and medical error prevention. StatPearls - NCBI Bookshelf. <https://www.ncbi.nlm.nih.gov/books/NBK570638/>
- Uberoi, R., Swati, E., Gupta, U. D., & Sibal, A. (2007). Root cause analysis in healthcare. Apollo Medicine, 4(1), 72–75. [https://doi.org/10.1016/s0976-0016\(11\)60440-7](https://doi.org/10.1016/s0976-0016(11)60440-7)
- Urbach, D. R. (2017, July 10). Delivering timely surgery in Canadian hospitals. CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5505756/>
- Zhang, J., Pathak, H. S., Snowdon, A., & Greiner, R. (2022, May 24). Learning models for Forecasting Hospital Resource Utilization for COVID-19 patients in Canada. Nature News. <https://www.nature.com/articles/s41598-022-12491-z>

