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Leveraging Google Forms for Surgical Site Infection Tracking: A Novel Approach to Post-Operative Wound Assessment

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Abstract: *Effective tracking and timely assessment of surgical wounds are crucial for minimizing post-operative complications such as infections and delayed healing. This article explores the use of Google Forms as a No-cost, efficient tool for monitoring surgical site Infection and promoting patient self-reporting for post-operative care. We discuss the development of a "Surgical Site Infection Tracker" form, which enables healthcare providers to track the healing progress of surgical wounds remotely. The form includes various assessment parameters such as pain, redness, drainage, and signs of infection, and allows for easy integration with Google Sheets for data analysis. The potential benefits, limitations, and ethical considerations of this method are also explored.*

Keywords: Surgical site assessment, wound care, Google Forms, patient self-reporting, post-operative monitoring, infection tracking.

INTRODUCTION

Surgical wounds are a critical aspect of patient recovery, and effective post-operative monitoring is necessary to prevent complications such as infections, poor healing, or other adverse outcomes. Traditionally, post-operative wound assessment relies on in-person follow-

up visits, which can be inconvenient for patients and resource-intensive for healthcare providers. Additionally, in some cases, patients may not report complications promptly, leading to delayed interventions.

With the rise of digital health solutions, there is growing interest in leveraging technology to improve post-operative care. Google Forms, a widely used tool for surveys and data collection, offers an innovative solution for surgical wound assessment. This article aims to discuss the creation, implementation, and potential advantages of using Google Forms as a **Surgical Site Infection Tracker** for the remote monitoring of surgical wounds.

MATERIALS AND METHODS

Design and Structure of the Surgical Site Infection Tracker Form:

The Google Survey Form was developed with the objective of collecting structured data on the condition of a patient's surgical site during the post-operative period. The form was designed to include both general information about the patient and specific questions on wound healing and complications. The questions were categorized into sections for ease of completion:

1. **Patient Information**: Basic patient demographics, surgery details (date, location), and contact information.
2. **Surgical Wound Assessment**: Questions assessing key indicators of wound health, including:
    - Condition of the wound (healed, red, swollen, open, etc.)
    - Pain level (using a 1-10 Numerical pain rating scale)
    - Redness, swelling, or discharge (Yes/No responses)
    - Presence of infection (specific symptoms like fever, pus, and increased pain)
    - Ability to follow prescribed wound care routine
3. **Photo Examples**: Patients were given examples of discharge of wound site, swelling, colour change, Gapping for reference in the form of images.

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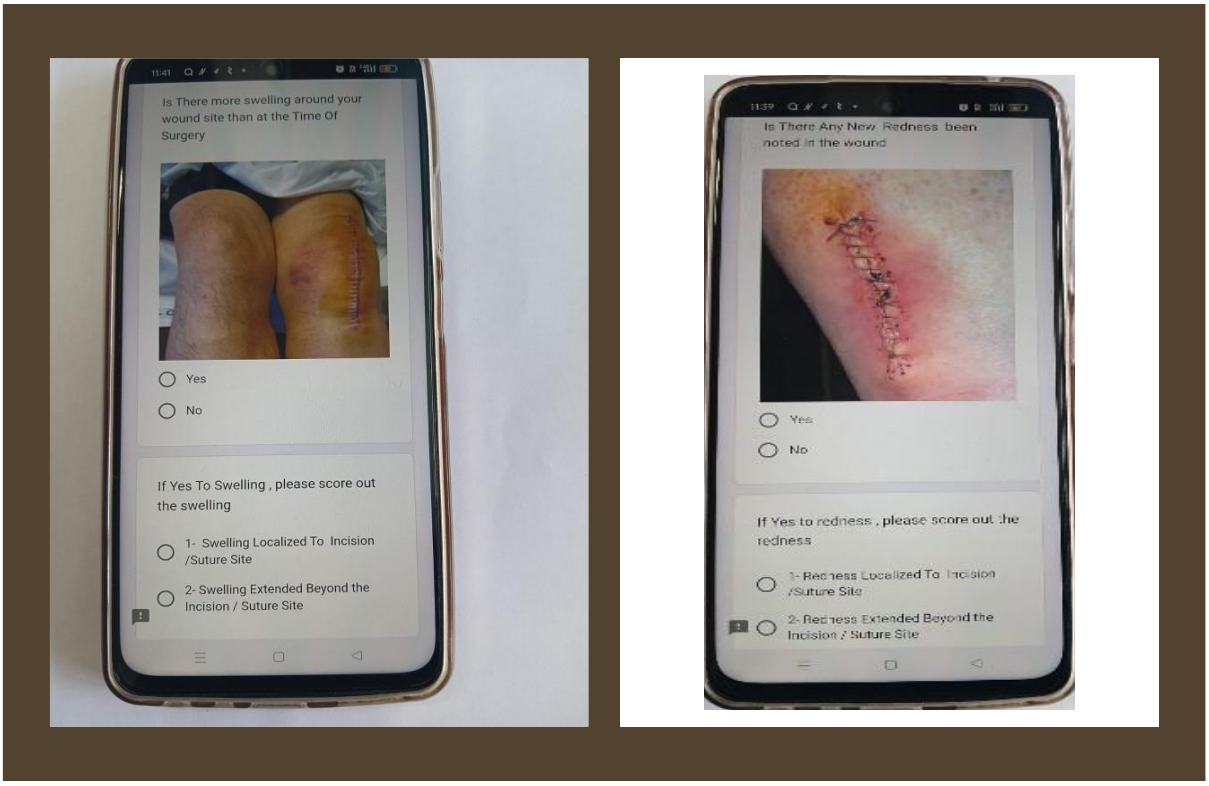

Each section was designed to ensure a clear and concise collection of relevant information while minimizing the time burden on patients.

Survey Distribution and Data Collection:

The **Surgical Site Infection Tracker** form was distributed electronically via email or in WhatsApp to patients following surgery. Clinical Nurse Specialist inform to Infection Control Nurse on the day of discharge. ICN meets the patient and collects baseline data along with initial wound Assessment form and Patients were asked to complete the form on 3rd, 7th,15th and 21st day of discharge, depending on their post-operative care plan. Notifications and reminders were set up to prompt timely responses. Data by all Surgical oncology patients collected from the forms were automatically fed into a Google Sheet for analysis and follow-up by the healthcare team.

Data Analysis and Interpretation:

Data analysis was carried out by examining the responses from the Google Sheets, which allowed for easy aggregation of results. This enabled quick identification of patients at risk of complications. For example, patients who reported significant pain or signs of infection could

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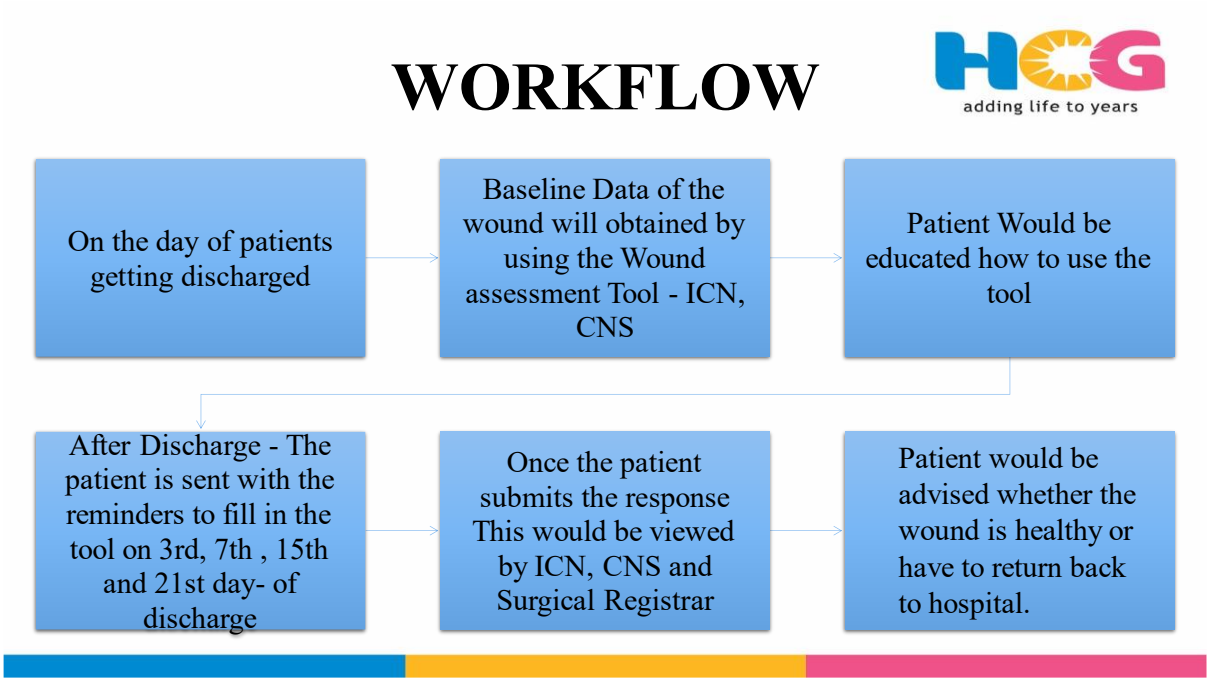
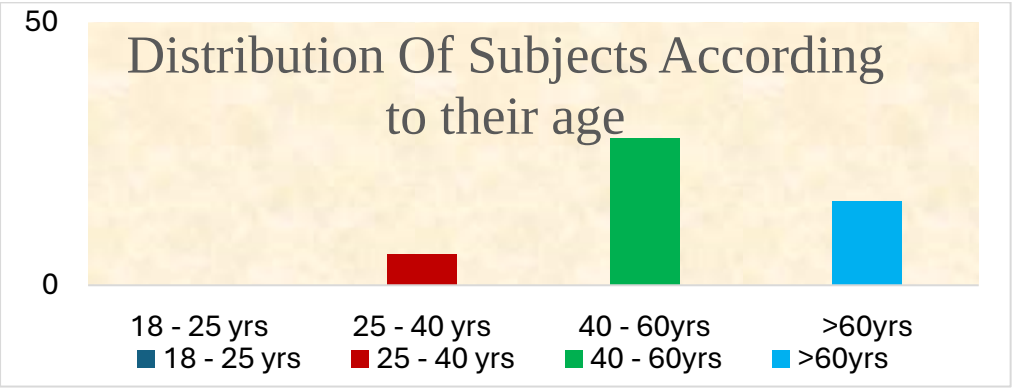
be flagged for early intervention. Furthermore, the data allowed for trend analysis over time, helping to identify common issues in the healing process across different patient demographics or surgical procedures.



Interpretation: As per the analysis of age there were 28(55%) patients who were between the age of 40-60 years. And 6(11%) were between the age 25-40 years. More than 60 years were 16 (34%)



Interpretation: As per the analysis of gender there were 36(72%) patients were male And 14(27.7%) were female.

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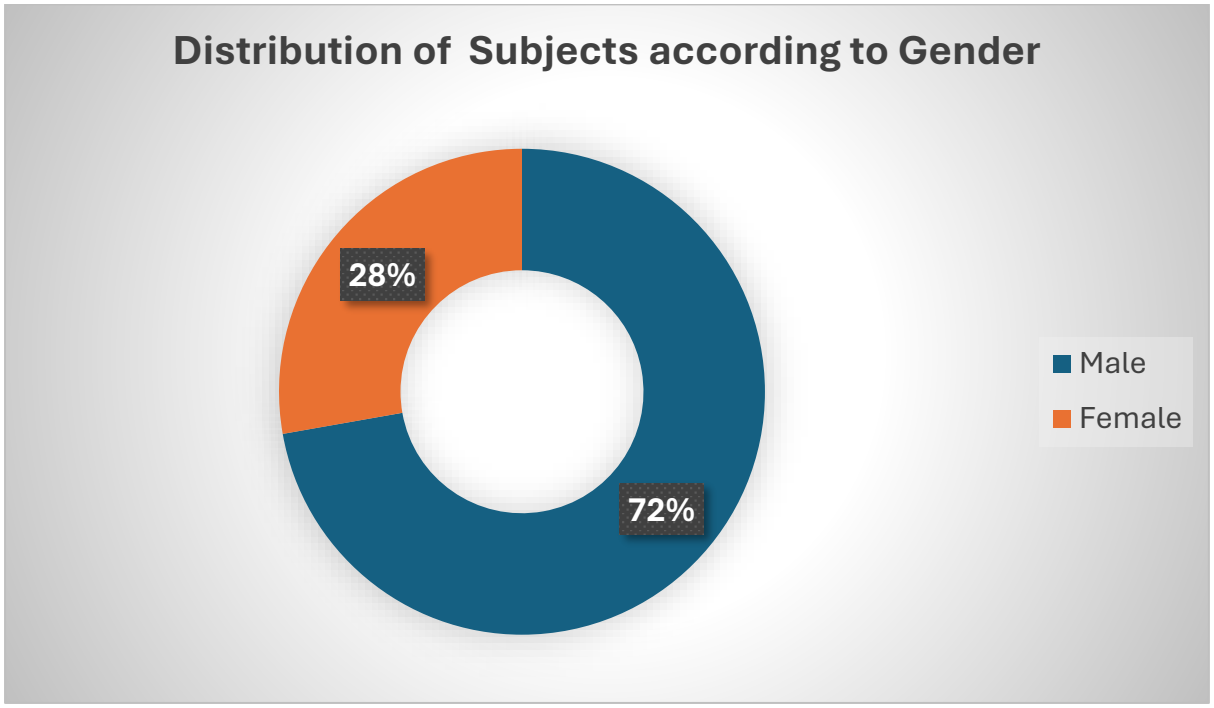

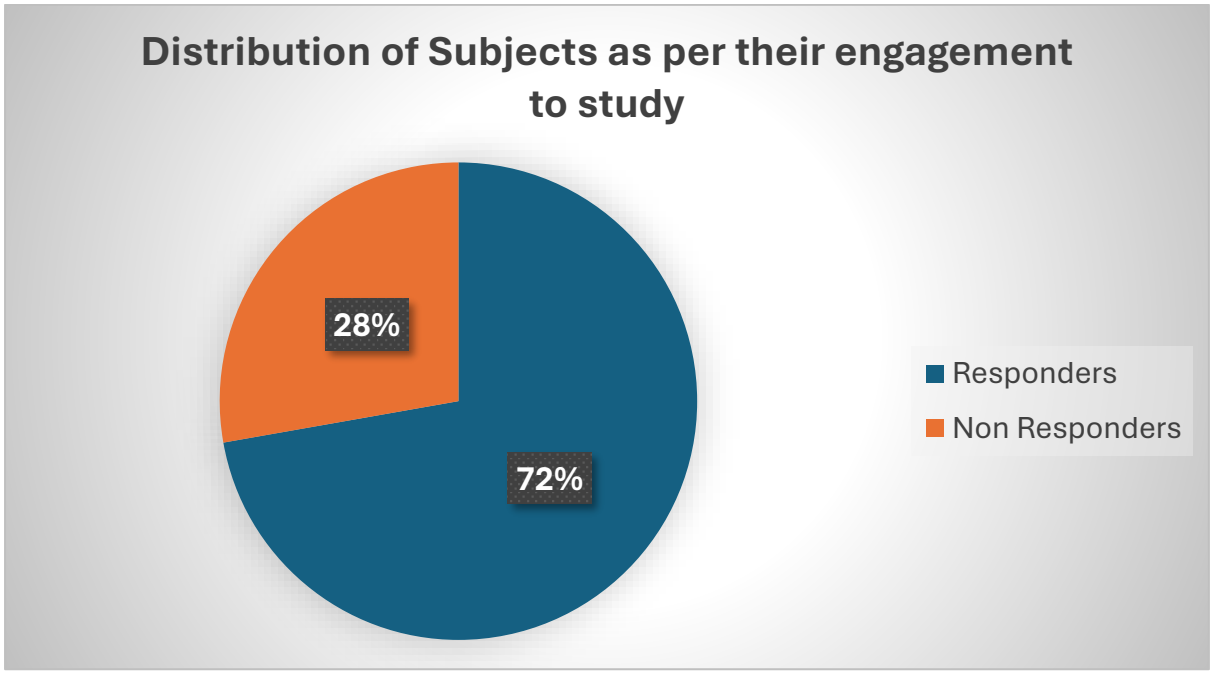

Interpretation: As per the analysis of their engagement to study there were 36 (72%) patients were responding to the tool. And 14(27.7%) were not responding to the tool.

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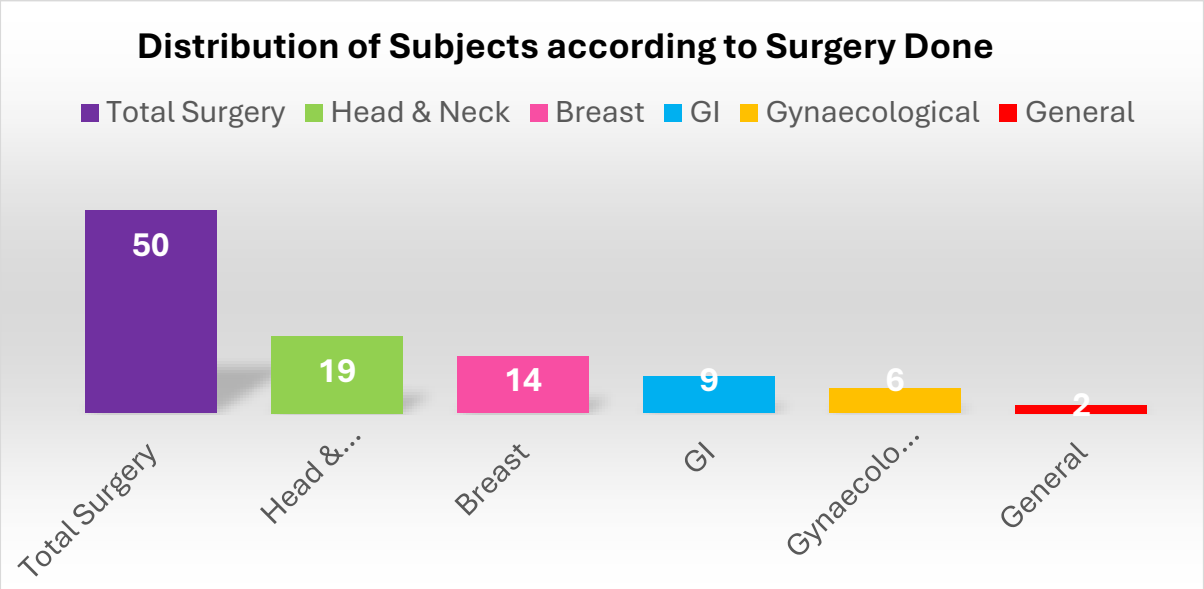

Interpretation: As per the analysis of surgical site there were 19(38%) which was of head and Neck and 6 (11%) which was of gynecological case

RESULTS

Improved Monitoring and Early Detection:

By using the Surgical Site Infection Tracker form, healthcare providers were able to efficiently monitor multiple patients at once, even in remote settings. The data indicated that patients with reported complications—such as redness, swelling, or drainage—were promptly identified and followed up with, often reducing the need for urgent in-person visits.

In several cases, patients reported minor complications, such as swelling or slight redness, which were addressed before they developed into more serious infections. This proactive monitoring helped reduce hospital readmission rates and contributed to a smoother recovery process.

Patient Engagement and Satisfaction:

Patients reported feeling more empowered by being able to track their own progress and report issues directly. The form was designed to be user-friendly, with easy navigation and clear questions, ensuring that patients could complete it with minimal effort. Feedback from patients

suggested that they appreciated the ability to report their symptoms between appointments, rather than waiting for a physical visit.

Data Collection Efficiency:

The integration of Google Forms with Google Sheets streamlined the process of collecting and reviewing patient data. The healthcare team was able to track responses in real time and use automated tools to identify patients who required immediate attention. This significantly reduced the manual effort required in traditional wound monitoring systems.

DISCUSSION

Advantages of Using Google Forms for Surgical Site Tracking:

1. **Cost-Effective**: Google Forms is a free tool, making it an accessible option for healthcare systems with limited resources.
2. **Scalability**: The platform can handle an unlimited number of respondents, making it ideal for large-scale surgical site tracking across diverse patient populations.
3. **Data Integration**: The seamless connection to Google Sheets allows for easy data aggregation, analysis, and real-time monitoring, facilitating the identification of trends and patterns.
4. **Improved Patient Monitoring**: By allowing patients to report symptoms directly from home, healthcare providers can identify issues early and intervene before complications escalate.
5. **Patient Empowerment**: Self-reporting offers patients an opportunity to be more involved in their care, which can lead to better adherence to post-operative instructions and overall satisfaction.

Challenges and Limitations:

1. **Digital Literacy**: Some patients, especially older adults, may have difficulty using Google Forms or may lack internet access, which could limit the effectiveness of this tool.
2. **Privacy and Confidentiality**: Collecting medical information via digital platforms raises concerns about data security. Ensuring compliance with regulations like HIPAA (in the U.S.) is essential.
3. **Accuracy of Self-Reported Data**: While self-reports provide valuable insights, there is always the risk of misinterpretation or underreporting of symptoms by patients.

Future Implications:

The use of Google Forms for surgical wound assessment could be expanded to include additional features such as automated alerts for healthcare providers based on responses, as well as integration with electronic health records (EHR). This could create a more comprehensive digital health solution for managing post-operative care.

CONCLUSION

The implementation of a **Surgical Site Infection Tracker** using Google Forms presents a promising approach to enhancing post-operative care. This No-cost, user-friendly platform offers significant benefits in terms of patient engagement, early detection of complications, and streamlined data collection. While there are challenges related to digital literacy and data security, the potential for improved patient outcomes makes this an exciting tool for modernizing post-surgical monitoring. Future studies and broader implementation of digital health solutions in this area could further optimize wound care and contribute to better surgical recovery management.

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