INTERNSHIP REPORT

"Brand Management Strategies for New Entrants in Electrosurgical Equipment

Guided by:

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Internship Organization: Winglobe

1. **Introduction**
   Electrosurgical Units (ESUs) are essential in modern surgical practices, enabling surgeons to cut tissues and control bleeding using high-frequency electrical currents. During my internship at Winglobe, I had the opportunity to observe the development, testing, calibration, and maintenance of these devices. This experience allowed me to bridge the gap between academic theory and real-world industry operations.
2. **Research Questions**
   - What are the procedures for managing, testing, and maintaining ESUs in an industrial setting?
   - What common challenges exist in adhering to safety and quality standards?
   - How effectively does academic learning prepare students for industry practices?
3. **Literature Review**
   Prior to beginning the internship, I studied foundational concepts of electrosurgery, including the working principles of ESUs, distinctions between monopolar and bipolar modes, and the role of safety mechanisms such as Return Electrode Monitoring (REM). I also reviewed international regulatory frameworks such as IEC 60601 and ISO 13485, which govern the manufacturing and safety of medical devices.
4. **Objectives**
   - To gain hands-on understanding of ESU calibration, safety, and performance checks.
   - To compare theoretical knowledge with real-time practices in a medical equipment company.
   - To identify process gaps and provide constructive suggestions for improvement.
5. **Hypothesis**
   - Null Hypothesis (H_0): There is no significant difference between theoretical knowledge and industry practices.
   - Alternative Hypothesis (H_1): A noticeable gap exists between classroom learning and actual industry processes.
6. **Data Collection Procedure**
   Data were gathered primarily through direct observation. I maintained daily logs of my activities and insights, engaged in informal discussions with engineers and technicians, and reviewed internal documentation such as calibration logs and service records for a deeper understanding.
7. **Study Design**
   The study followed a descriptive, observation-based model. Over a period of five weeks, I rotated through various departments, witnessing the complete lifecycle of ESUs—ranging from assembly and calibration to on-site demonstrations and servicing.
8. **Duration of Study**
   - Total internship duration: 7 weeks
   - Daily involvement: Approximately 6–8 hours

- Activities spanned office tasks, laboratory sessions, and hospital site visits

9. Sample Size

- Approximately 20 ESUs were assessed or worked on
- Interactions included over 10 professionals from engineering, quality assurance, and R&D
- Participated in installations and demonstrations at 3 hospitals
- Product lines observed included Ligapro 13 & 23 (open surgery) and Ligapro 33 & 44 (laparoscopic surgery)

10. Primary Data

Primary insights were drawn from real-time observations, team interactions, end-user feedback, and technical logs. The experience provided both technical and process-oriented perspectives.

11. Operational Definitions

- ESU: A surgical device that uses high-frequency electrical energy to cut or coagulate tissue.
- REM: A patient safety mechanism that verifies proper placement and function of the grounding pad.
- Calibration: The process of adjusting equipment to ensure accuracy and compliance with defined performance standards.

12. Ethical Considerations

All tasks were performed under the supervision of company mentors, with a strict commitment to confidentiality. No sensitive or proprietary information was disclosed, and patient privacy was maintained during all field engagements in accordance with company guidelines.

13. Implications of the Study

The internship provided a valuable real-world perspective on biomedical equipment, highlighting the limitations of purely theoretical learning. It revealed key discrepancies between academic training and field realities, underscoring the importance of practical exposure. Additionally, it demonstrated that improvements in areas such as documentation, employee training, and maintenance workflows can greatly enhance device quality and patient safety.