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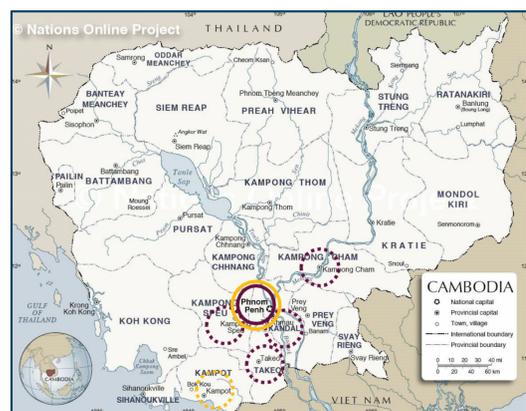
Research Objective

There is a significant need to address gaps in existing surgical data collection and reporting globally.

In 2019, the Safe Surgery 2020 (SS2020) Initiative collaborated with Calmette Hospital in Cambodia to develop and train 3 national and 5 provincial hospitals on Surgical Key Performance Indicators (KPIs) and data collection methods.

The training aimed to help surgical staff and technical officers understand the role of Monitoring and Evaluation (M&E) within surgery and develop mechanisms to collect, aggregate, and report high-quality surgical data.

Implementation of this training program led to the routine collection of disaggregated surgical data in Cambodia.

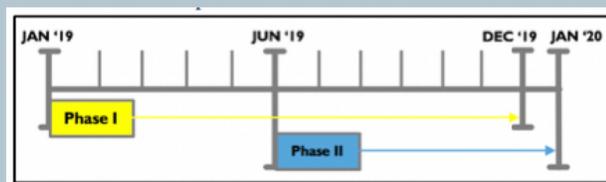


Population Studied

Participants from the selected hospitals were surgical staff and technical officers. Key performance indicators were aggregated from surgical patient charts, surgical logbooks, and other relevant data sources within each hospital.

Acknowledgments and Contact Information

A surgical key performance indicator (KPI) training was provided for Cambodian hospitals in two phases with Phase I (5 hospitals) implemented in February 2019 and Phase II (3 hospitals) in July 2019. The curriculum established six surgical key performance indicators and a robust data collection and reporting system. As a component of the KPI Training, hospitals were instructed to collect and report monthly surgical data for 2019. Phase I hospital data was reported for the months of January through July 2019, while Phase II hospital data was reported for the months of June through October 2019.



Study Design



- 1 SURGICAL VOLUME
- 2 NUMBER OF CESAREAN SECTIONS
- 3 SAFE SURGERY CHECKLIST UTILIZATION RATE
- 4 PERI-OPERATIVE MORTALITY RATE (POMR)
- 5 NUMBER OF SURGICAL, ANESTHESIA, AND OBSTETRIC (SAO) PROVIDERS
- 6 NUMBER OF ANESTHETIC ADVERSE EVENTS

Implications for Policy and Practice

Demonstrating the feasibility of collecting high-quality surgical indicators that are appropriate for the Cambodian context will allow the Ministry of Health to determine whether national scale-up of KPIs and data collection systems can occur. Countries seeking to develop M&E for surgery should consider the integration of surgical KPIs into their national indicators for health.

Conclusion

This intervention exhibits the feasibility of training, collection, aggregation, and reporting of surgical KPIs in national and provincial hospitals in Cambodia. The principal findings indicate that this system can capture high-quality surgical data. Further qualitative analysis of the overall collection process and appropriateness of the KPIs will elucidate more understanding in the scalability of such KPIs and reporting mechanisms. Further comparison between the two phases will be useful in identifying any emerging longitudinal trends over longer timelines (Phase 1) versus shorter timelines (Phase 2).

Principal Findings

Six KPIs were analyzed from completed hospital reporting forms from intervention hospitals. The aggregate data collected in the Phase I and Phase II hospitals, respectively, are as follows: (1) average surgical volume per month was 1737 and 1432; (2) average volume of cesarean sections per month was 591 and 360; (3) surgical safety checklist utilization rate improved from 64.38% to 89.33% and from 42.17% to 54.02%; (4) perioperative mortality rate was 0.62 and 0.61 per 100 procedures; (5) total number of SAO providers consistently was 183 and 149; and (6) anesthetic adverse event rate was 0.45 and 0.29 per 100 procedures. Disaggregated data is shown below:

INDICATOR	PROVINCIAL HOSPITALS (P1, P2)	NATIONAL HOSPITALS (P1, P2)
AVERAGE MONTHLY SURGICAL VOLUME	613, 113	1161, 1275
TOTAL C-SECTION AS % OF TOTAL SURGICAL VOLUME	42.31%, 50.72%	31.60%, 22.82%
TOTAL C-SECTION AS % OF TOTAL LIVE BIRTHS	22.13%, 19.68%	24.00%, 32.15%
TOTAL PERI-OPERATIVE MORTALITY RATE	0.16%, 0.00%	1.10%, 0.17%
TOTAL SAO DENSITY	99, 17	84, 132
TOTAL ANESTHETIC ADVERSE EVENT RATE	0.81%, 0.00%	0.35%, 0.00%
AVERAGE SAFE SURGERY CHECKLIST UTILIZATION RATE	82.09%, 82.91%	84.72%, 36.06%

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