



MODULAR OPERATION THEATRE A SAFE AND AFFORDABLE SURGERY FOR ALL"



KEMENTERIAN KESIHATAN
MALAYSIA

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Introduction

- Surgical conditions account 28-32% of the overall global burden of disease.
- 5 billion people lack access to safe, affordable surgical and anaesthesia care when needed.
- Peninsular Malaysia have universal coverage for Bellwether procedures (emergency laparotomy, caesarean section and treatment of an open fracture), we could not equally claim the same for Sabah and Sarawak regions.
- Hospital Bentong initiated a Global Surgery concept in year 2019, and implemented utilizing the Modular Operation theatre in year 2021.
- Modular Operation theatre was completed in year 2016, to accommodate the local population of 135,000 peoples.
- Operative procedure was started in year 2016.

➤ **Aim** of this operating theatre:

- I. To improve the facilities for the expanding population in Bentong and raub, as well as in patient services.
- II. To reduce the waiting time for surgery procedure especially in cancer cases.
- III. To reduce the complications and fasten treatment and resuscitation management, especially trauma / UGIB cases.
- IV. To reduce the workloads at the referral hospitals example HoSHAS, Hospital selayang and HKL.
- V. To reduce patient burden for transportation and accommodation treatment / transfer to HoSHAS

Results

- A total of number of patient 691 patient underwent procedure done from year 2016 till December 2022.
- Comprised of local anaesthesia, general anaesthesia and endoscopic procedures.
- **Surgical :**
 - a) Endoscopic procedure (n: 331)
 - i. OGDS cases (n: 258)
 - ii. Colonoscopy cases (n:73).
 - b) Local anaesthesia cases (n:360): fistula creation, open hernioplasty, excision biopsy, circumcision, recircumcission, removal of tenckhoff catheter, incision & drainage, wound debridement, secondary suturing, haemorrhoid banding and wide local excision.
 - c) General anaesthesia cases (n: 13): excision biopsy, circumcision, recircumcission and open inguinal hernioplasty.
- **Orthopaedic :**
 - a) Local anaesthesia cases (n: 87) : Wound debridement, excision biopsy, trigger finger release, Intraarticular injection, Knee aspiration, Refashioning, Readjustment of external fixation, Syndesmotic screw removal, Callus removal, Removal of bone chip, Incision & drainage, Ray's amputation, K-wire removal, SSG, Carpal tunnel release and Nail bed repair.
 - b) General anaesthesia cases (n:8) : excision biopsy, split skin graft, removal implant intramedullary and extensor contracture release

Modular OT Structure



Discussion

- Every year, more than 313 million surgical procedures are performed globally for common conditions including obstructed labour, birth defects, cataracts, cancer, cardiovascular diseases, diabetes, acute abdominal conditions, burns, and injuries from domestic, industrial and road accidents [1].
- Estimated 143 million additional surgical procedures are needed in low and middle income countries (LMICs) each year to save lives and prevent disability, with surgically treatable diseases being among the top 15 causes of disability worldwide [2].
- 30% of the world's burden of disease could be treated successfully through surgery, with higher proportions in LMICs [3].
- Demand for surgery is high, with around 30% of all admissions to hospitals requiring surgical/anaesthesia care [4].
- Surgical care procedures lead to substantial perioperative mortality, and globally at least 4.2 million people die every year within 30 days of surgery [5].

Conclusion

Modular Operation theatre is feasible to promote a health services globally toward a healthy and productive community. It is a center of excellent healthcare services based on "Corporate culture" in treatment and patient care.

References

- 1) Weiser TG, Haynes AB, Molina G, Lipsitz SR, Esquivel MM, Uribe-Leitz T et al. Size and distribution of the global volume of surgery in 2012. Bulletin of the World Health Organization. 2016 Mar 1;94(3):201-9F.
- 2) Meara JG, Leather AJ, Hagander L, Alkire BC, Alonso N, Ameh EA et al. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. Lancet. 2015;386:569-624
- 3) Shrimpe MG, Bickler SW, Alkire BC, Mock C. Global burden of surgical disease: an estimation from provider perspective. The Lancet Global Health. 2015 Apr 27;3:Suppl 2:S8-9.
- 4) Fehlberg T, Rose J, Guest GD, Watters D. The surgical burden of disease and perioperative mortality in patients admitted to hospitals in Victoria, Australia: a population-level observational study. BMJ Open. 2019;9:e028671-e.
- 5) Nepogodiev D, Martin J, Biccard B, Makupe A, Bhangu A, Ademuyiwa A et al. Global burden of postoperative death. The Lancet. 2019 Feb 2;393(10170):401.