SUMMER INTERNSHIP PROGRAM

at

Rukmani Birla Hospital

From 1st May 2024 to 1st July 2024

A REPORT BY

Akshita Singhal

Master of Business Administration

Hospital and Healthcare Management

2023-25

under the Mentorship of

Dr. Sandesh Kumar Sharma

IIHMR UNIVERSITY

CK BIRLA HOSPITALS | RBH

RBH/2024/Jul/HRD/6157

Date: 01 Jul 2024

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Akshita Singhal** has successfully completed her training in Medical Services Department from 01 May 2024 to 01 Jul 2024.

We found her sincere, punctual & hardworking. We wish her every success in her future and career.

For **CK Birla Hospital - RBH**

Raju Kumar
Unit Head - HR

IIHMR UNIVERSITY

IIHMR University Faculty Mentor Approval

This is to certify that Dr. Akshita Singhal of academic year 2023-25 of Institute of Health Management Research has prepared a poster with respect to her summer internship held during May-June 2024.

She has carried out work as per the guidelines. Her poster is approved for presentation.

Date: 18 July, 2024

Name: Dr. Sandesh Kumar Sharma
Associate Professor
IIHMR University
Jaipur, India

RETROSPECTIVE STUDY ON ROBOTIC & LAPROSCOPIC SURGERIES AT A TERTIARY CARE HOSPITAL, JAIPUR

IIHMR UNIVERSITY

CK BIRLA HOSPITALS | RBH Rukmani Birla Hospital JAIPUR

ORGANISATION - RBH, JAIPUR

CK Birla Hospitals, comprising its three identities across India
- The Calcutta Medical Research Institute (CMRI)
- BM Birla Heart Research Center (BMB)
- Rukmani Birla Hospital (RBH)

The three units of CK Birla Hospitals having footprint in Kolkata & Jaipur which offer 800 beds with comprehensive health care services in India.
RBH launched in 2016 with 230 beds at Jaipur

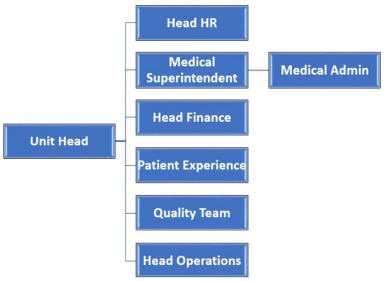
VISION

To provide best of Patient Service & Clinical Excellence.

MISSION

To create Clinical Centres of Excellence on a strong backbone of research, academics and evidence-based medicine for best clinical and patient outcome.

ORGANISATION STRUCTURE



OBJECTIVES

- To analyse about robotic surgeries at RBH
- Comparison between expected & actual outcomes of robotic surgeries as compared with laparoscopic surgeries.
- To identify factors for cost optimization of robotic surgeries

METHODOLOGY

- Study Design : Retrospective (November 1, 2023 – May 31, 2024)
- Study Duration : The study covered the data for all robotic surgeries and 98 laproscopic surgeries performed over the period of 7 months, from Nov 1, 2023 – May 31, 2024.
- Sample size : 98
- Data collection method : Secondary data
- Specialties included : OBS/GYN, Urology, General Surgery (GS), Gastro-intestinal (GI)

SWOT : ROBOTIC & LAPROSCOPIC SURGERIES

STRENGTH

ROBOTIC
- First mover advantage
- 3D, HD vision

LAPROSCOPIC
- Shorter ALOS
- More surgeries
- Experienced surgeons

WEAKNESS

ROBOTIC
- High initial investment + maintanence
- Less surgeries, longer ALOS, high operative time
- Cardiology not available

LAPROSCOPIC
- Surgeon fatigue

OPPORTUNITY

ROBOTIC
- Growing demand : minimally invasive
- Scope for expansion

LAPROSCOPIC
- Globally accepted

THREATS

ROBOTIC
- Emerging competition
- Resistance to change

LAPROSCOPIC
- Large market competition

PRACTICAL v/s THEORITICAL KNOWLEDGE

THEORETICAL

Gained knowledge, basic core concepts, enhanced understanding about all the various functions & departments of a hospital.

PRACTICAL

While practical knowledge was focused on real-world application & helped develop skills like problem-solving, decision making, teamwork

CHALLENEGES FACED DURING INTERNSHIP

- Handling multiple tasks under pressure.
- Taking approvals & permissions for poster and getting relevant info due to confidentiality issues.
- Launch of HIS, lead to disturbance in data collection.

DA VINCI XI ROBOTIC SYSTEMS

Surgeon console : The surgeon controls the robotic arms from here, using intuitive hand & foot movements to guide the instruments.
Robotic arms : Robotic arms mimics surgeon's hand movements, enhancing dexterity & flexibility.
Visualization system : An HD, 3D camera provides magnified, clear view of surgical site, enhancing visual & spatial awareness.

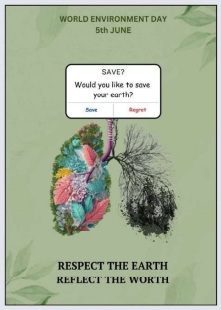
BENEFITS :
- 3D Visualization
- Enhanced dexterity, precision & accuracy
- Improved access
- Better ergonomics

EVIDENCE BASED OUTCOMES :
- Reduced blood loss
- Faster recovery
- Improved & consistent outcomes
- High patient satisfaction

RBH, Jaipur

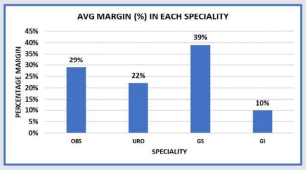
DA VINCI XI Robot

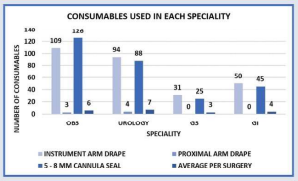
World Environment Day Poster submission

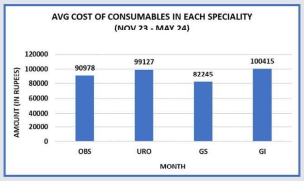


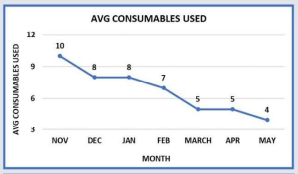
GRAPHS & FINDINGS

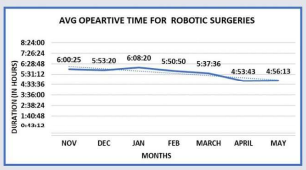
- Total surgeries in each month : NOV (5), DEC (10), JAN (11), FEB (9), MARCH (14), APR (18), MAY (31)
- Total surgeries in each speciality : OBS (37), URO (27), GS (24), GI (10)

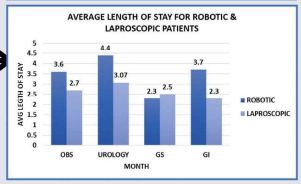


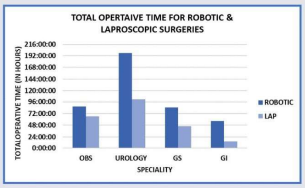












EXPECTED v/s ACTUAL OUTCOMES

PARAMETER	STANDARD (ACCORDING TO REFERENCE FROM INTUITIVE SURGICALS)	AVERAGE IN RBH		TARGET TO ACHIEVE
	Reference – https://www.intuitive.com/en-us/about-us/company/instruments-program-notice	LAPROSCOPIC	ROBOTIC	
AVERAGE LENGTH OF STAY (ALOS)	**0.4 days shorter** than average laproscopic	2.6 days	3.5 days	**1.3 days shorter** than current robotic LOS
OPERATIVE TIME	**18.8 min longer** than average laproscopic	128 minutes	265 minutes	**118.2 min lesser** than present robotic

RESULTS

1. **TREND** –
- **Highest number of surgeries : May, OBS**
- **Highest margin : GS**

2. **CONSUMABLES -**
- Over the months, an overall **reduction in use of number of robotic arm consumables, per surgery has been observed, leading to better cost optimization.**
- **Better optimization** can be **suggested** in **Urology.**

3. **SURGERY OPERATIVE TIME -**
- Operative times have **decreased over the months**, but needs to be **reduced even more to 118.2 min lesser than current** (265 min) operative times for enhanced OT utilization.

4. **ALOS** -
- The ALOS for robotic patients needs to be **1.3 days shorter than present ALOS** (3.5 days), for cost optimization and better bed turnover ratio.

5. **BREAK-EVEN** -
- ROBOTIC RENT + MAINTAINENCE : 15 Lakhs
- To **break-even**, RBH needs atleast **36 surgeries per** month (all specialties)

COST SAVING STRATEGIES

REUSEABILITY
- **Increasing the number of uses** of consumables, thereby reducing price-per-use.
- By this method, an average of **24% cost reduction per case** has been reported by Intuitive.

LESS CONSUMABLES
- Lesser use of consumables can lead to lesser operative costs per surgery.
- As seen in GS, the average number of consumables their cost is less, giving us highest margins.

REFERENCE - https://www.intuitive.com/en-us/about-us/company/instruments-program-notice

GAPS

ROBOTIC
- Less number of surgeries
- Cardiology not available
- Untrained staff
- Less promotion

LAPROSCOPIC
- More number of scheduled surgeries compared to availability of OT, leading to disagreement amongst surgeons and staff

SUGGESTIONS (ROBOTIC SURGERIES)

INCREASING NUMBER OF SURGERIES PERFORMED
- Expanded marketing initiatives & quarterly progress to be mapped
- Digital promotion featuring patient video & audio testimonials on social media & waiting areas

LESSER OPERATIVE TIME
- Emphasis on advanced simulation training & proctor support
- Enhanced practice & training initiatives for medical staff

REDUCING LENGTH OF STAY
- Patients can be admitted on the day of surgery, pre-op and PAC can be done on OPD basis
- Discharge of patients as soon as possible

REDUCING COST OF CONSUMABLES
- CSSD, OT Manager advanced training for reprocessing & of instruments.
- Training to perform maximum surgeries using two robotic arms
- Finding safe practices for the reuse of arm drapes and consumables

INCREASING THE NUMBER OF TRAINED STAFF
- To improve surgical outcomes, shorter operative times & better patient bed turnover ratio.

LEARNINGS

- Practical knowledge of different hospital operations, departments & management functions.
- Hospital management challenges & solutions.
- Audits : ICU open & closed files, Family counseling, Restraint forms, BMW, HIRA, PREM
- Others : Emergency codes, MDT counselling, Mockdrills

USEFULNESS

- Helped develop life skills like patience, team work, working under pressure, effective communication, patient dealing, along with practical exposure of hospital setting.

Submitted by : Akshita Singhal
HM-28, 1671

(Week 1)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no: 1 **From: 1/05/2024 to 4/05/2024**

Activity Done	- Learnt and did
	  o Internal audit (open and closed files) – 30
	  o Family counselling forms - 15
	  o Restraint consent forms – 10
	at MICU, NICU, ICCU, HDU, General Wards, Private Wards
	- CAHO PREM (Patient Reported Experience Measures) medication survey for 50 IPD patients.
	- Attended sessions at OPD Pharmacy
	  o Hospital Emergency Codes
	  o Cut Strips Policy
	  o Medication recall.
	- Saw the functioning of Labs
	- Observed types of incident reports and their digital records.

Linking theory (Classroom learning) with practice at your organization	- Observed implementation of ICU zoning and types of equipment taught in hospital services. - Saw and observed Hospital Emergency Codes - Data Collection and Analysis as read in research methodology. - Importance of consents of patients and family counselling.

Gaps identified on the working area.	- Incomplete documentation in patient files. - Lack of consents being filled. - Proper timing of patient files lacking. (admission time / time of assessment etc) - Delay in medication administration via nursing staff. - Patient unaware of cost structure. - Not properly trained pharmacy staff - Consultant doctors incomplete file work
Suggestions for improvement	- Better documentation and constant follow-ups. - Conveying of cost structure clearly to patients. - Regular family counselling and consents filling. - Timely medication to be provided by staff. - Training of pharmacy staff, to reduce cut strips and be more aware about emergency codes.
Plan for the next week	- Finalising and working on summer internship project. - Getting more in-depth knowledge of hospital working.

(Week-2)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no : 2 **From: 6/05/2024 to 11/05/2024**

Activity Done	- Did o Internal audit (open and closed files) – o Family counselling forms - o Restraint consent forms – at MICU, NICU, ICCU, HDU, General Wards, Private Wards - HIRA assessment and audit (Hazard Identification & Safety Risk Assessment) - Understood admission process, discharge process - Understood CSSD process - Understood Blood Bank process - Started working on possible summer project
Linking theory (Classroom learning) with practice at your organization	- Observed implementation of ICU zoning and types of equipment taught in hospital services. - Data Collection and Analysis as read in research methodology. - Importance of consents of patients and family counselling. - CSSD process as taught in hospital services.
Gaps identified on the working area.	- Incomplete documentation in patient files. - Lack of consents being filled. - Proper timing of patient files lacking. (admission time / time of assessment etc) - Consultant doctors incomplete file work - Less bed availability observed during rush hours.

Suggestions for improvement	- Better documentation and constant follow-ups. - Regular family counselling and consents filling. - Better bed management and utilisation. - Better and more empathetic counselling for IPD patients
Plan for the next week	- Work on summer project - Learn more about hospital functioning

(Week-3)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 3: **From: 13/05/2024 to 18/05/2024**

Activity Done	- Visited OT - Understood about vinyls and different floorings of hospital - HIRA assessment and audit (Hazard Identification & Safety Risk Assessment) - Understood discharge process and ER and emergency codes - Understood RGHS - Understood and attended MDT (Multi-Disciplinary Team Counselling) - Biohazard waste audit - Started working on summer project
Linking theory (Classroom learning) with practice at your organization	- Observed implementation of OT zoning and types of equipment taught in hospital services. - Data Collection and Analysis as read in research methodology. - Risks and hazards of hospital departments. - Triage, crash carts, other equipment of ER - Saw emergency codes in action - Waste disposal - Importance of family counselling
Gaps identified on the working area.	- Improper OT scheduling. - HIRA – fire extinguishers missing at places - Not every staff was aware of emergency codes and proper waste disposal. - Delayed discharges and unplanned discharges

Suggestions for improvement	- Training of staff for emergency codes, and for proper waste disposal. - Better discharge process flow to improve bed turnover ratio.
Plan for the next week	- Work on summer project - Learn more about hospital functioning

(Week-4)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 4: **From: 20/05/2024 to 25/05/2024**

Activity Done	- Understood and saw code FAST, and code STEMI, learnt about their dashboards
	- Attended MDT.
	- Understood
	  o Discharge process and its barriers
	  o Transportation process within hospital
	- Worked on project

Linking theory (Classroom learning) with practice at your organization	- Hospital Emergency Codes - NABH guidelines - Importance of counselling

Gaps identified on the working area.	- Delay in discharge process
	  o Late doctor rounds
	  o Less manpower
	  o Delay at TPA due to delay in approvals etc.

Suggestions for improvement	- Strengthening of the discharge process and planned discharges
Plan for the next week	- Finalising and working on summer internship project. - Getting more in-depth knowledge of hospital working.

(Week-5)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 5: **From: 27/05/2024 to 01/06/2024**

Activity Done	- Understood about ICUs - Understood about robotic surgeries - Attended MDTs - Code PINK, RRT - Had mid intern presentation - Worked on summer project
Linking theory (Classroom learning) with practice at your organization	- Observed implementation of ICU zoning and types of equipment taught in hospital services. - Data Collection and Analysis as read in research methodology. - Saw emergency codes in action - Importance of family counselling
Gaps identified on the working area.	- Some patient files have incomplete documentation. - Occasionally, consent forms are not fully completed. - Timing records, such as admission and assessment times, are sometimes inconsistent. - Documentation by consultant doctors is not always complete. - Bed availability can be limited during peak hours.
Suggestions for improvement	- Enhance documentation practices and ensure consistent follow-ups. - Conduct regular family counseling sessions and ensure consent forms are thoroughly completed. - Improve bed management and utilization. - Provide better and more empathetic counseling

Plan for the next week	- Work on summer project - Learn more about hospital functioning

(Week-6)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 6: **From: 03/06/2024 to 08/06/2024**

Activity Done	- Plantation drive for 'WORLD ENVIRONMENT DAY' - Took part in poster making competition for 'WORLD ENVIRONMENT DAY' and won 1st prize. - Understood about green field and brown field projects. - Helped finding out gaps and issues in the launch of new HIS system at RBH - Learnt about Manifold rooms and gas system - Worked on project
Linking theory (Classroom learning) with practice at your organization	- Saw how hospitals take care of landscaping and maintaining the 'Green Hospital' tag - Launch of new software - understood team work, conflict resolutions and management role during tough times - Saw the role of effective communication during code VIOLET - The pipelines and supply of gases in the whole hospital
Gaps identified on the working area.	- A lot of disturbance in daily operations were observed in the initial days of HIS launch. - Most of the work had to be done both manually and on system that created a lot of fuss. - Delay in discharges and medication arrival lead to code VIOLET. - The manifold room is open and the entry isn't restricted which is risky

Suggestions for improvement	- Better testing of software could have been suggested before the launch of the software. - More intensive training for all the staff was needed. - Mock of HIS could have been done prior to launch - the manifold room should be closed and only the concerned people should be allowed to enter.
Plan for the next week	- Learn more about hospital functioning. - Work on summer project

(Week-7)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 7: **From: 10/06/2024 to 15/06/2024**

Activity Done	- Volunteered in management 'WORLD BLOOD DONOR DAY 'camp. - Observed and worked alongside IT and development team to help solve initial glitches in the new HIS - Helped in training of staff for the new HIS - Learnt about STP and ETP - Understood roles and responsibilities of security and fire systems along with ambulance services. - Visited EHCC and Fortis for comparison of PHC packages.
Linking theory (Classroom learning) with practice at your organization	- Saw the role of proper documentation and streamlining of processes - Fire safety rules - Saw how the health software works - Understood about PHC packages
Gaps identified on the working area.	- At a few places improper documentation was observed during the blood donation drive that lead to confusion and re-doing of the work. - STP and ETP plants should be in open areas which isn't the scene in RBH - Fire signages and fire extinguishers are not installed in some areas (IP pharmacy and store) - More intensive training was required for HIS - Sometimes the diagnostic management is disturbed as proper segregation for OPD/IPD/PHC patients isn't followed.

Suggestions for improvement	- Better orientation and training of staff involved before any camp / any activity could be suggested. - constant check on work done by subordinates - Installation of fire extinguishers and proper training of staff to use them. - Having a separate area/ lounge for PHC clients or following proper slot for proper implementation.
Plan for the next week	- learn more about hospital functioning. - work on summer project

(Week-8)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 8: **From: 17/06/2024 to 22/06/2024**

Activity Done	- Understood about working of OPDs and waiting areas - Visited and learnt about mortuary - Understood about value added services at a hospital - Visited physiotherapy department, saw the working, new machinery - Helped as a speaker and model for physiotherapy department's content creation for patients
Linking theory (Classroom learning) with practice at your organization	- Saw different areas of OPD and how management is done - Saw how additional value added services can add in to revenue of the hospital - Saw role of security in mortuary
Gaps identified on the working area.	- Lack of proper signages at the OPD area - No temple / prayer room / meditation room - Less number of sitting compared to the number of patients at peak hours - Long waiting hours of patients sometimes due to doctors not available immediately. - In case of hazard/emergency situations 4 bedded mortuary isn't sufficient
Suggestions for improvement	- Proper signages for ease of patients - A small room for meditation / prayer - Better sitting arrangements for patients and streamlining of processes. - Having a bigger mortuary can be suggested.

Plan for the next week	- Work on summer project - Learn more about hospital functioning

(Week-9)

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream: MBA-HHM**

Week no 6: **From: 24/06/2024 to 01/07/2024**

Activity Done	- Understood about MRD - Understood TAT for code PINK - Attended mock drill for Code RRT - Understood about marketing strategies of a hospital - Final Presentation to the department head - Collected Certificate of Completion
Linking theory (Classroom learning) with practice at your organization	- Understood about MRD and documentation - Saw role of security for code PINK - Understood about 5 P's in real world
Gaps identified on the working area.	- All the staff wasn't appropriately trained for codes
Suggestions for improvement	- Better training of staff for emergency situations.

Compiled Report

Name of the Organization: Rukmani Birla Hospital, Jaipur

Area/ Department/ Project of Summer Internship Program: Medical Service

Name of the Student: Akshita Singhal

Roll no: 1671 **Stream:** MBA-HHM

- **Activity Done**	- **AUDITS:**
	  - PREM (Patient Reported Experience Measures)
	  - ICU (open & closed files)
	  - Family counseling forms
	  - Restraint forms
	  - BMW audit
	  - HIRA
	  - Bio hazard audit
	- **Observe the functioning of**
	  - Labs
	  - ICUs
	  - OT
	  - OPD
	  - IPD
	  - MRD
	  - Blood bank
	  - Mortuary
	  - BMW
	  - Physiotherapy department
	  - CSSD
	  - STP
	  - ETP
	  - Manifold room
	  - Robotic surgeries
	  - HIS – training and gap finding
	  - MDTs – Multi Disciplinary Team
	- **Hospital Emergency Codes**
	  - PINK, RRT, FAST, STEMI, VIOLET (mock drills and in action)

	- **Processes** –
	  - Admission
	  - Billing
	  - TAT
	  - Discharges
	  - RGHS
	  - OT scheduling
	  - PHC packages
	  - Family counselling
	  - Waste disposal

- **Linking theory (Classroom learning) with practice at your organization**	- Implementation of ICU, IPD, OT, OPD, ER - Saw and observed Hospital Emergency Codes - Importance of consents of patients and family counselling. - Hospital Emergency Codes - NABH guidelines - Importance of counselling - Hospital Information System
- **Gaps identified on the working area.**	- Incomplete documentation in patient files. - Lack of consents being filled. - Proper timing of patient files lacking (admission time / time of assessment etc.) - Delay in medication administration via nursing staff. - Patient unaware of cost structure. - Not properly trained pharmacy staff - Consultant doctors incomplete file work - A lot of functional gaps in HIS - Limited bed availability during peak hours - Delayed and unplanned discharges - Improper OT utilization - Manual Documentation could be prone to errors in reporting - Less Coordination among different departments

- **Suggestions for improvement**	- Better documentation and constant follow-ups. - Conveying of cost structure clearly to patients. - Regular family counselling and consents filling. - Timely medication to be provided by staff. - Regular training of staff in every aspect (pharmacy, delivery, TAT, emergency codes) - Proper signages for ease of patients - A small room for meditation / prayer - Better sitting arrangements for patients in waiting areas - Streamlining of processes in certain departments. - More intensive pre-launch training and mocks for HIS - Integration of Electronic Medical Records at a larger scale - Improved appointment system for OPD consultations

Signature of the Student

Approved by the IIHMR University's Mentor