

THE  
LANCET

Commission on  
Global Surgery

Health Delivery & Management  
(HDM) Working Group

# HEALTH SYSTEMS STRENGTHENING AND SURGERY

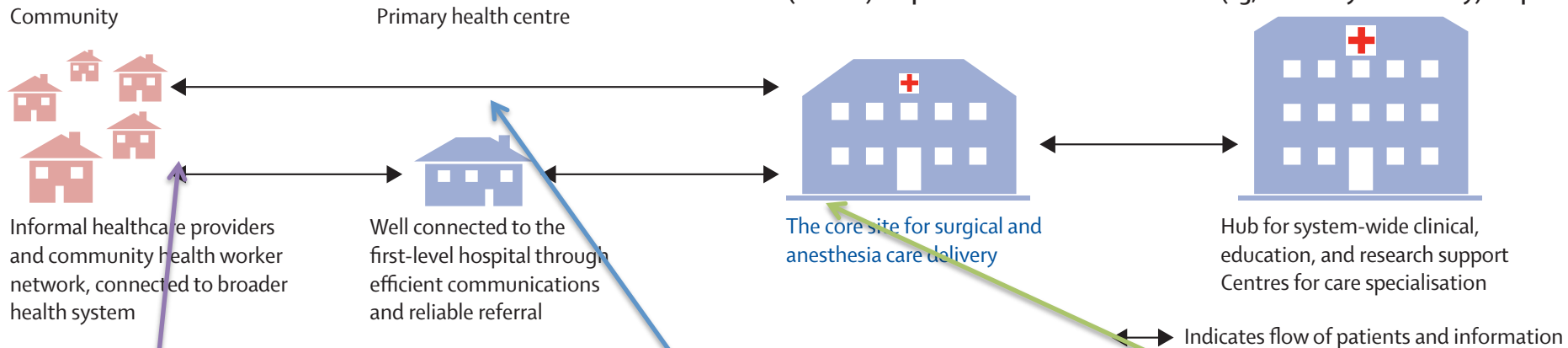
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Chair, LCoGS HDM Working Group  
Chief of Surgery, BARC Hospital, Mumbai



# The Present Situation

# THE SURGICAL SYSTEM AND THE THREE DELAYS

## Referral system



**The 1<sup>st</sup>  
Delay**  
Delay in  
Seeking Care

**The 2<sup>nd</sup>  
Delay**  
Delay in  
Reaching Care

**The 3<sup>rd</sup>  
Delay**  
Delay in  
Receiving Care

# THE THREE DELAYS

**The 1<sup>st</sup>  
Delay**  
Delay in  
Seeking Care

Community



- Financial
- Awareness
- Geographic
- Poor trust
- Cultural



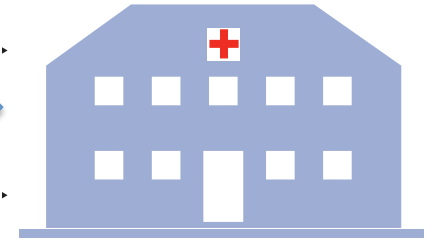
# THE THREE DELAYS

**The 2<sup>nd</sup>  
Delay**  
Delay in  
Reaching Care

Community



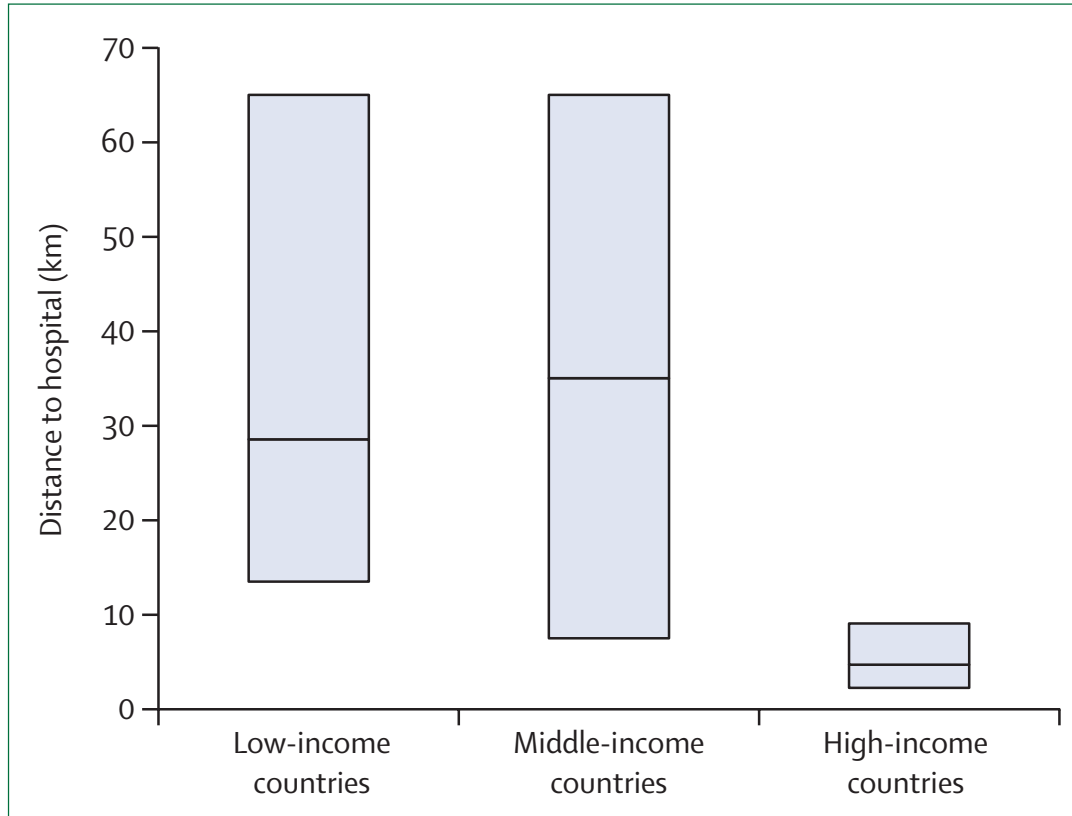
First level  
(District) hospital



- Long distances
- Poor pre-hospital transportation
- Financial

# DISTANCE TO HOSPITAL PER INCOME GROUP

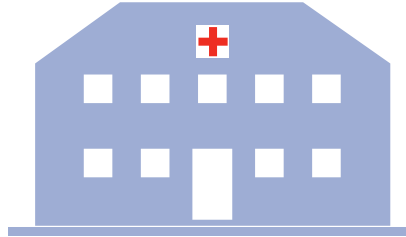
**The 2<sup>nd</sup>  
Delay**  
Delay in  
Reaching Care



# The Three Delays

**The 3<sup>rd</sup>  
Delay**  
Delay in  
Receiving Care

First level  
(District) hospital



- Infrastructure
  - Physical
  - Equipment & maintenance
  - Supply chains
  - Blood banks
- Staffing
- Processes and protocols
- Isolated from system

Caesarean  
Delivery

64%

Treatment  
Open  
Fracture

40%

Laparotomy

58%



**Caesarean  
Delivery**

**Laparotomy**

**Treatment  
Open  
Fracture**

# The Way Forward

Strategies for  
**The 1<sup>st</sup>**  
**Delay**  
Delay in  
Seeking Care

Strategies for  
**The 2<sup>nd</sup>**  
**Delay**  
Delay in  
Reaching Care


Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
Delay in  
Receiving Care



Strategies for  
**The 1<sup>st</sup>  
Delay**  
Delay in  
Seeking Care

**INVEST IN COMMUNITY OUTREACH**






Strategies for  
**The 1<sup>st</sup>**  
Delay  
Delay in  
Seeking Care

Strategies for  
**The 2<sup>nd</sup>**  
Delay  
Delay in  
Reaching Care

**SCALE LOW-COST COMPREHENSIVE REFERRAL SYSTEMS**





Strategies for  
The 2<sup>nd</sup>  
Delay  
Delay in  
Reaching Care

## STRENGTHEN EXISTING NETWORKS OF CARE

In many settings, police, taxi and truck drivers already provide the majority of pre-hospital transportation



# TAKE CARE TO THE COMMUNITY – MOBILE SURGERY

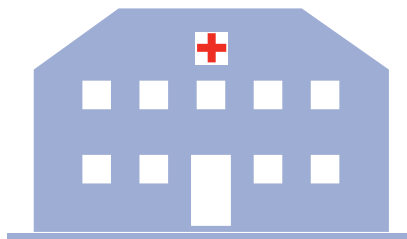
Strategies for  
**The 2<sup>nd</sup>**  
**Delay**  
Delay in  
Reaching Care



# FOCUS ON THE FIRST-LEVEL HOSPITAL

Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
Delay in  
Receiving Care

First level  
(District) hospital



The Core Site for  
Surgical Care Provision

**Caesarean  
Delivery**

**Laparotomy**

**Treatment  
Open  
Fracture**

# THE BELLWETHER PROCEDURES

**Caesarean  
Delivery**

**Treatment  
Open  
Fracture**

**Laparotomy**

*Hospitals that can consistently provide the Bellwether Procedures are likely staffed and equipped, and function at a level of complexity that enables the delivery of other, related surgical care*

# BROAD-BASED SURGICAL CARE AT THE FIRST-LEVEL

Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
Delay in  
Receiving Care

## Must do

Acute, high-value procedures that need consistency through local structures; and less complex, urgent procedures that can be delivered through these same structures.

Acute, high-value procedures include

- Laparotomy
- Caesarean delivery
- Treatment of open fracture

Lesser complex, urgent procedures include

- Wound debridement
- Dilation and curettage
- Closed fracture reduction

## Should do

High-priority, high-volume procedures for planned surgery at the first-level hospital.

Lower-risk procedures include

- Hernia repair
- Contracture release
- Superficial soft tissue tumour resection
- Gastrosocopy

Medium-risk procedures include

- Cholecystectomy
- Intracranial haematoma evacuation
- Thyroidectomy
- Mastectomy

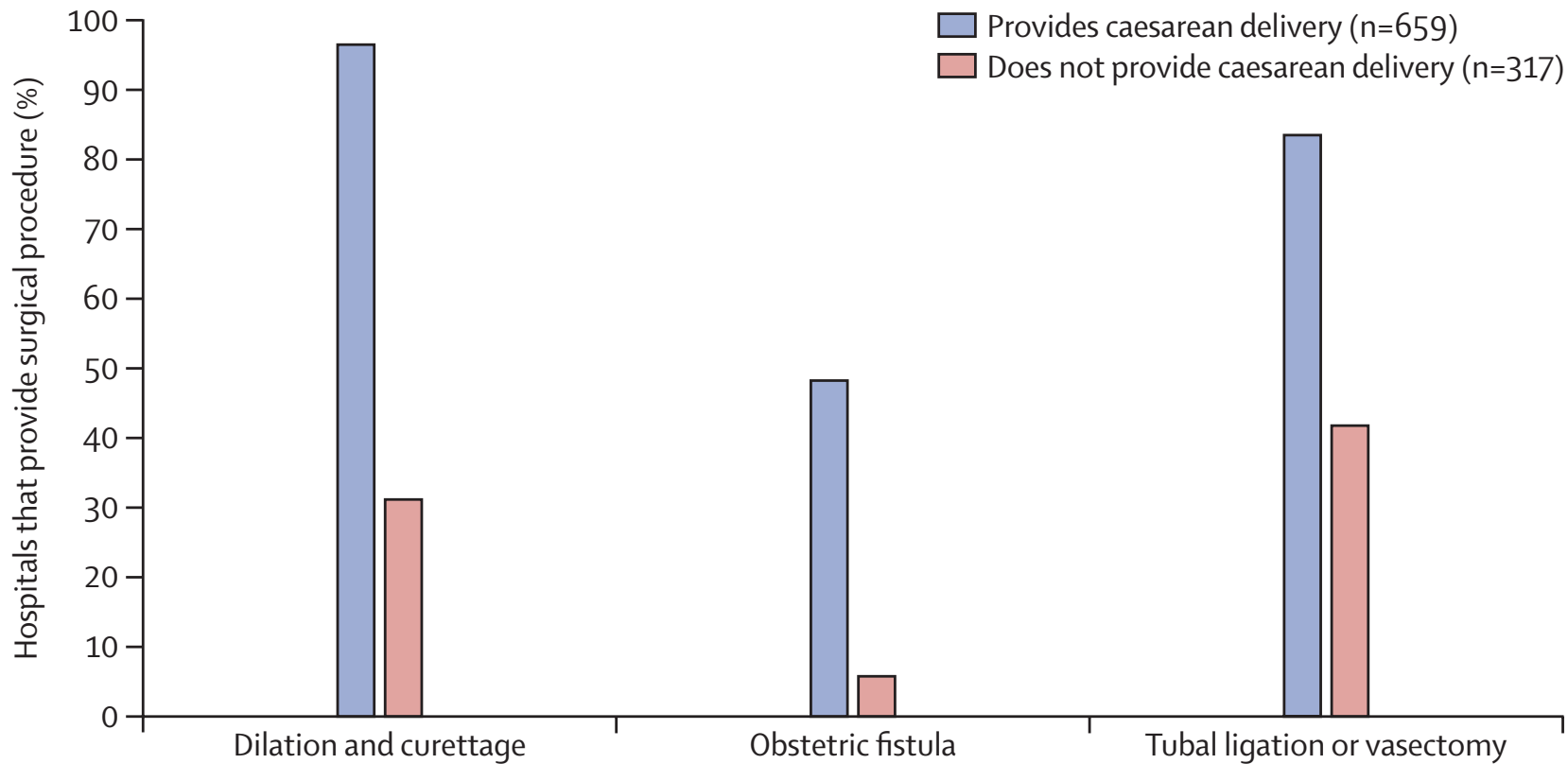
## Can do

Important procedures potentially needing specialist support. Ideally, higher-risk procedures should be done at tertiary centres, or done at first-level hospitals with the assistance of visiting super-specialist teams.

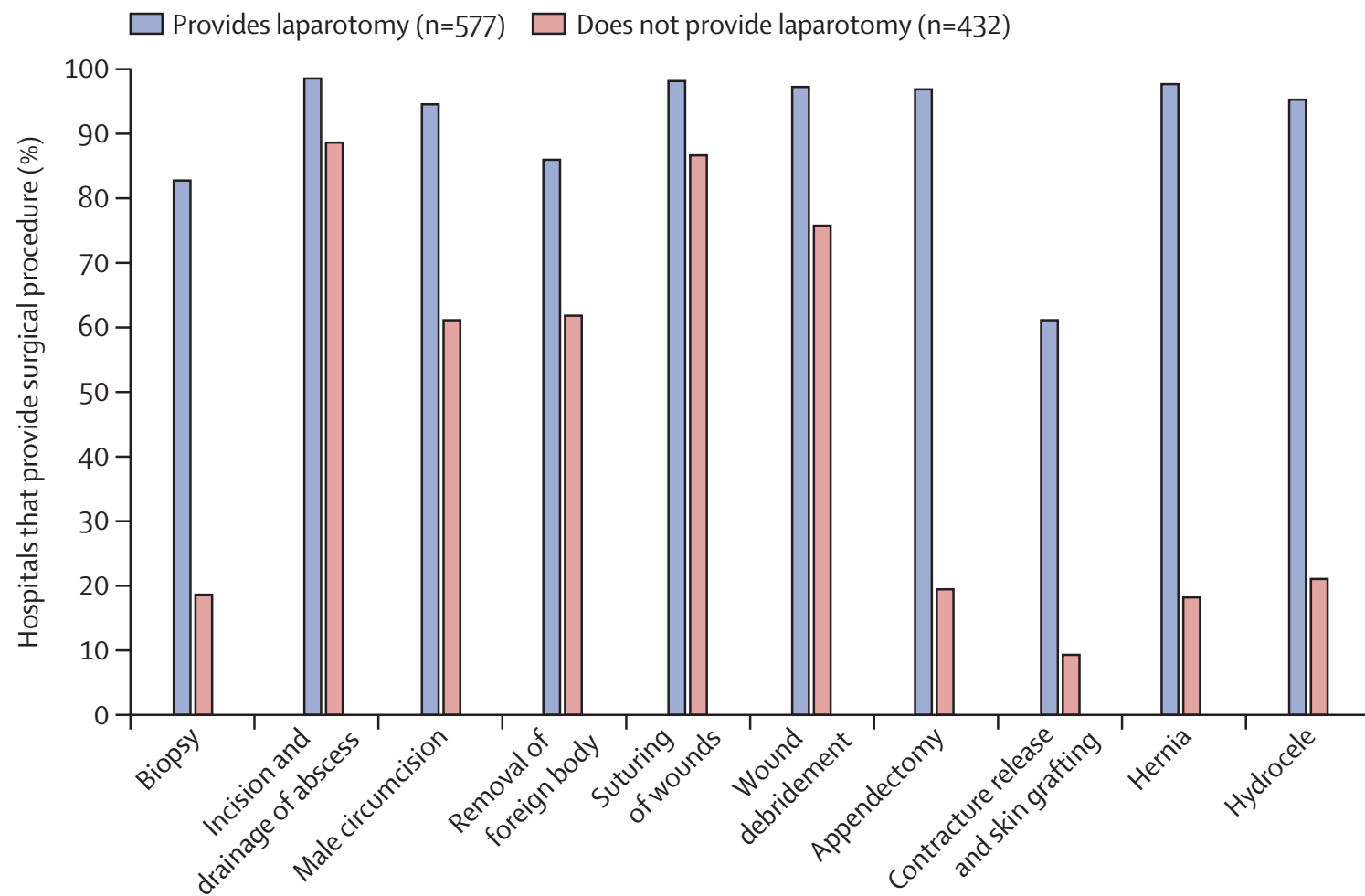
Examples include

- Thoracic surgery
- Transurethral resection of prostate
- Uretero-teroscopy
- Vesicovaginal fistula
- Basic skin flaps
- Rectal prolapse repair
- Cataract
- Cleft lip and palate repair

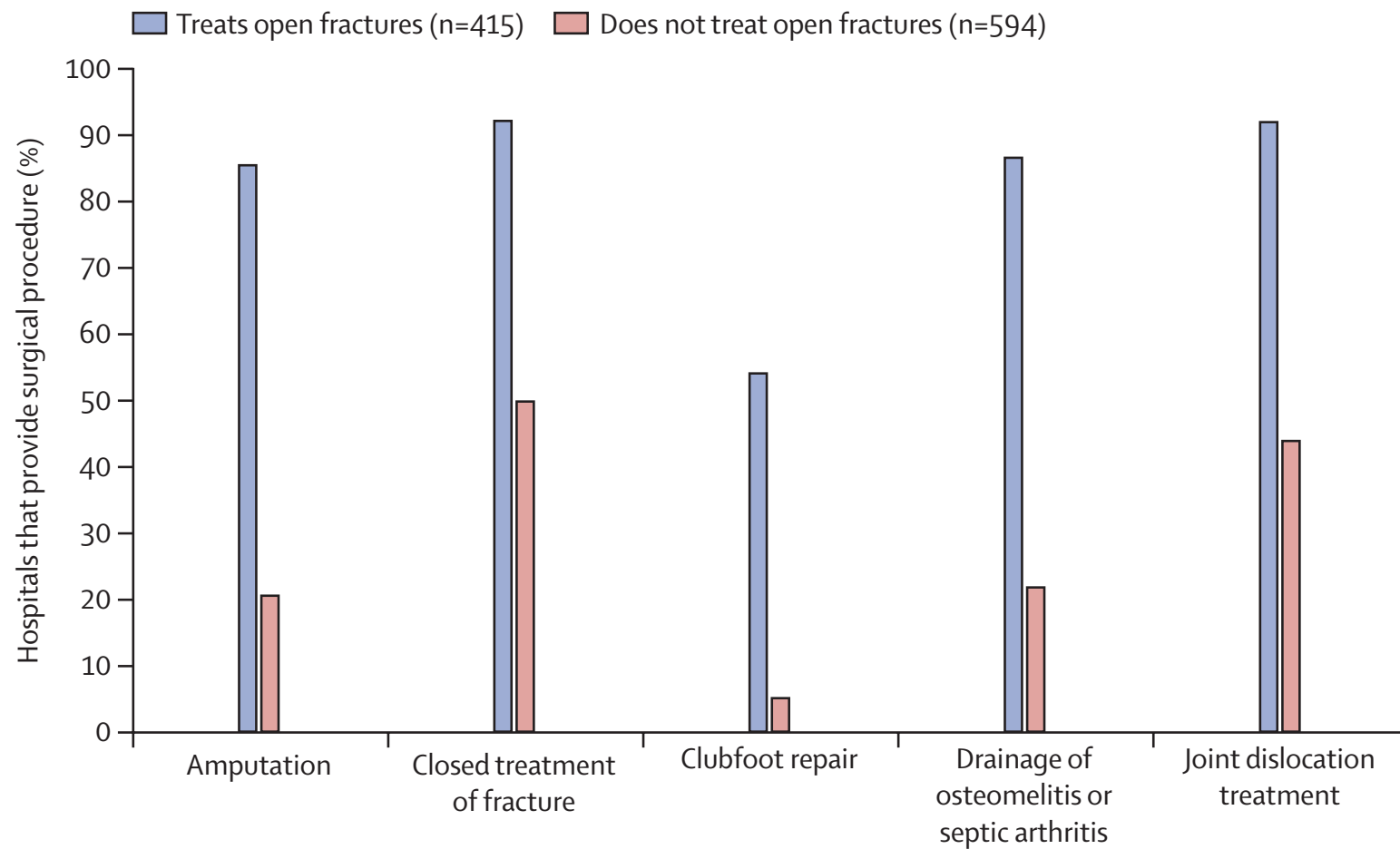
### A Obstetric procedure provision



## B General surgical procedure provision



### C Orthopaedic procedure provision





# Needs for Safe Surgical and Anesthesia Care

1. Trained surgical provider
2. Trained anaesthesia provider
3. Infrastructure, equipment and supplies necessary to perform safe general anaesthesia, loco-regional anaesthesia, laparotomy, caesarean delivery, and treatment of open fracture (including, for example, electricity, water, personal protective equipment for staff, basic laboratories, and HIV-testing capabilities)
4. Decontamination and sterilisation capacity
5. Blood supply that is safe and affordable (screened and cross-matched blood)
6. Drugs, including antibiotics, pain medicines, and anaesthetics (from the WHO Model List of Essential Medicines)<sup>116</sup>
7. Nursing care, which includes a record of appropriate physiological observations
8. 24 h surgical cover with the ability to review and respond to a deteriorating patient
9. Quality-improvement processes, including audit of perioperative mortality
10. Risk assessment and operation planning for planned procedures



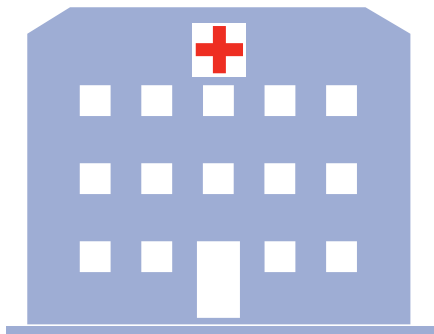
# Strengthen Blood Collection & Delivery

Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
Delay in  
Receiving Care

- Target 15 donations/1000 population
- Encourage and train in tranexamic acid
- Ensure adequate and safe testing kits
- Train providers on safe transfusion practices
- Assess for well-distributed banking & delivery infrastructure

# Optimize Usage of Secondary and Tertiary System

Strategies for  
**The 3<sup>rd</sup>  
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Receiving Care



Ancillary service coordination

- Complex Radiology
- Pathology
- Laboratory testing

Focus on complex planned care

System-wide education, training, research

# Build Local Equipment Maintenance Capacity

Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
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Receiving Care

## BMET Training Program



GE Foundation

**Duke**  
PRATT SCHOOL OF  
Engineering

# Coordinated Surgical Volunteerism

Strategies for  
The 3<sup>rd</sup>  
Delay  
Delay in  
Receiving Care



The screenshot shows the website for the Royal Australasian College of Surgeons Pacific Islands Project. The header is dark red with a search bar and navigation links: Home, The College, Fellows, Trainees, IMGs, Education and Training, Foundation, and Contact. The main content area features the Royal Australian Coat of Arms on the left and the text "ROYAL AUSTRALASIAN COLLEGE OF SURGEONS PACIFIC ISLANDS PROJECT" on the right. Below this, a list of bullet points is displayed: "Consistent", "Demand-driven", and "Planned surgical provision". At the bottom, there is a section for "RACS Global Health" with a dropdown menu showing "Advocacy" and "International Development". A small image of a surgical team is visible in the bottom right corner.

ROYAL AUSTRALASIAN  
COLLEGE OF SURGEONS  
PACIFIC ISLANDS PROJECT

- **Consistent**
- **Demand-driven**
- **Planned surgical provision**

RACS Global Health  
Advocacy  
International Development

Through partnerships with Southeast Asian and Pacific neighbours, our mission is to increase access to emergency and essential surgery and safe anaesthesia and improve the safety and quality of surgical and anaesthetic care, in low income countries. Our vision is that surgical and anaesthetic care is available and accessible to all who need it.

# Opportunities for Surgical Volunteerism

Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
Delay in  
Receiving Care

**REQUIRES YEAR-  
ROUND COVERAGE**  
either through long-term  
engagements or multiple,  
back-to-back short term  
postings

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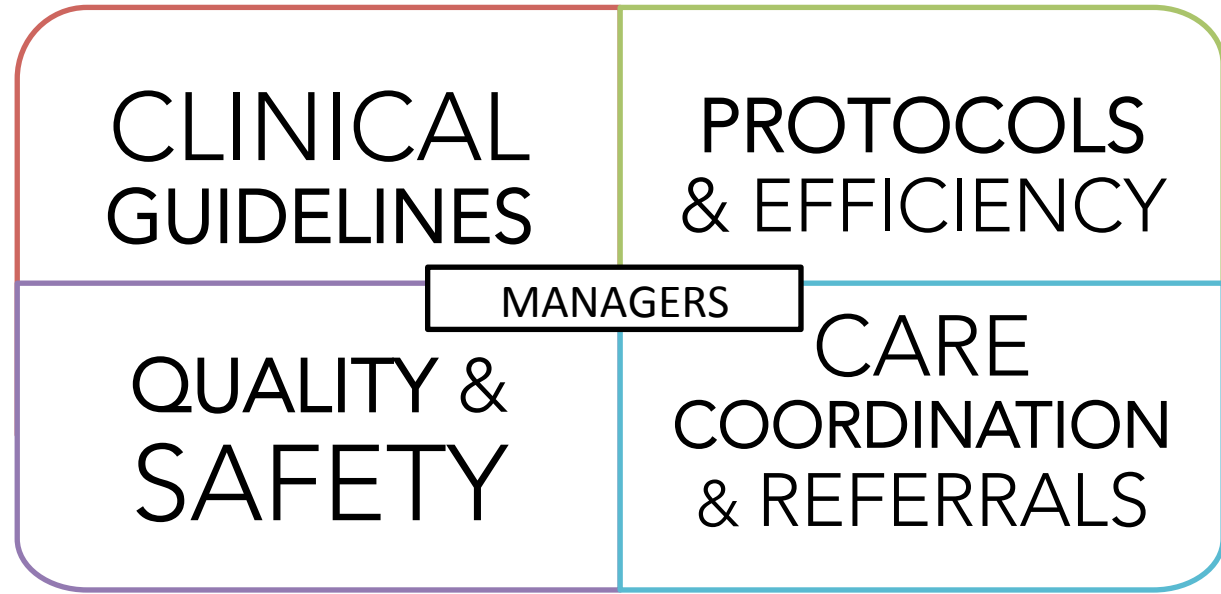
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**REQUIRES CONSISTENCY,**  
must be demand-driven, and must  
not distract from local priorities

# Invest in Professional Management

Strategies for  
**The 3<sup>rd</sup>**  
**Delay**  
Delay in  
Receiving Care



# The LCoGS HDM Working Group

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# Combating the First Delay

**The 1<sup>st</sup>  
Delay**  
Delay in  
Seeking Care

**The 2<sup>nd</sup>  
Delay**  
Delay in  
Reaching Care





CLINICAL  
GUIDELINES

PROTOCOLS  
& EFFICIENCY

QUALITY &  
SAFETY

CARE  
COORDINATION  
& REFERRALS