

# Mistakes and Errors in Minimal Access Surgery

R.K.Mishra

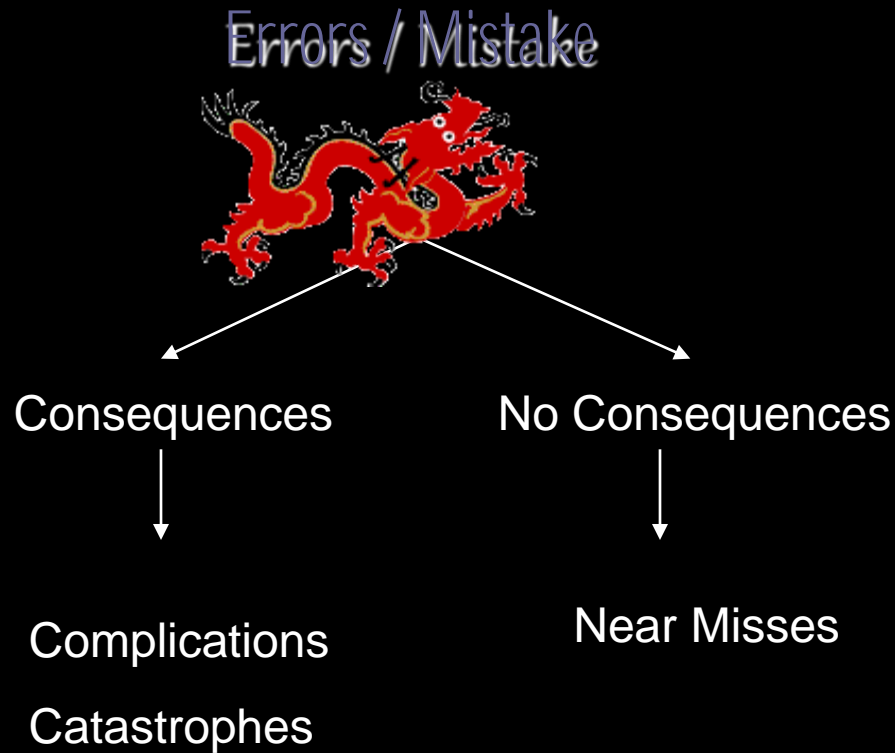


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# Concepts and mind set



# Skilled Surgeon Safer Surgery

There are some patients  
Whom we can not help...  
There are none  
whom we can not harm...

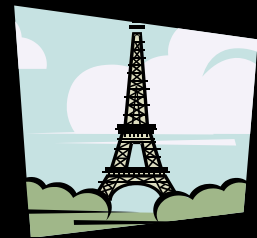
*Training gives  
Skill*

-Arthur L Bloomfield (1888-1962)



# HRA applicable to all higher risk industries

- Aviation industries
- Nuclear Industries
- Satellites
- Cloning
- MAS





# Nursing homes under Govt X-ray

By Radhika D Srivastava  
TIMES NEWS NETWORK

New Delhi: The Delhi government has decided to crack the whip on nursing homes.

A survey will determine how many are unregistered and how nursing homes and hospitals are disposing of bio-medical waste.

The health ministry is looking for a private company to undertake the survey in the city. An official said, "We have asked for tenders and hopefully, within a fortnight the work will be awarded."

The purpose behind the survey is to find out all those who were not disposing of bio-medical waste in a proper manner. Besides, the survey will also put on paper the infrastructure, staff and their qualification and services available in these unregistered nursing homes.

City health minister A K Walia said, "We will give the agency a list of registered nursing homes and hospitals so that these are not touched. Once we have the names and addresses of all unregistered nursing homes, we will decide on the next course of action."

Running an unregistered nursing home itself is illegal. On top of it, if this establishment is not taking care of its waste properly, the crime only becomes more serious, said Walia.

As per the government's records, there were close to 500 nursing homes and hospitals that were registered. There is no conservative estimate on the number running without registration.

Walia said, "It is clear that there are nursing homes without registration. Our field workers tell us that the real number of nursing homes and hospitals could be about 1,200 —

twice of what is on paper."

He further added, "The process of getting an establishment registered has been simplified to a large extent. It is not something one would avoid just for the procedure. But we suppose there are people who simply do not care for rules."

Till date, no efforts have been made to detect unregistered nursing homes. As a result, there are many unregistered nursing homes in the city. A member of the nursing homes forum in the Delhi Medical Association said, "There are nursing homes that do not register to avoid the hassle of bio-medical waste disposal. Most of these homes are the ones that are either very new or not very popular."

There are only two agencies appointed by the government that remove waste from all private hospitals for a price.

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19 April, 2003, Times of India

# Court tells doctors to pay for leaving gauge wire in body

By Navneet Mendiratta  
TIMES NEWS NETWORK

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Medical negligence is usually tough to prove. Unless it can be established that the medical practitioner did not act with sufficient care and skill, it cannot be stated that the medical practitioner is guilty of negligence.

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## The petitioner gets

- Refund of treatment expense: Rs 31,000
- Amount spent on medicines: Rs 5,000
- Compensation on account of physical and mental agony: Rs 50,000
- Litigation cost: Rs 5,000

him to undergo surgery as there was fracture in the neck of the left femur (thigh-bone). He was discharged four days later.

On January 4, 1996, he returned for a check up. An X-ray was conducted and he was told that everything was normal. However, on January 7, the complainant noticed blood in his urine. He also reportedly experienced severe pain in the lower abdomen and right thigh. He immediately contacted Nadir, who told him that the pain could be due to infection and prescribed him antibiotics. On February 10, he was issued a fitness certificate.

The pain, however, did not subside and traces of blood

continued to show. A second X-ray report showed a guide wire running across from the left hip joint area to the right thigh area through the pelvis. A repeat ultrasound test was done which showed that the guide wire existed in the urinary bladder of the complainant. The guide had reportedly been left by Nadir during surgery. The complainant also alleged that the earlier X-ray also reflected the wire, but the fact was concealed by the accused. The complainant reportedly went to another doctor and a corrective surgery was performed on February 21, 1996.

The plaintiffs, in their reply denied any negligence. They, however, admitted to the presence of the guide wire in the body and its removal by another doctor. The court was also informed that they had borne the expense of Rs 23,000 for the corrective surgery.

But holding both the nursing home and the doctor accountable, it ordered a refund of treatment expense, the amount spent on medicines and a compensation of Rs 50,000 on account of mental agony.



# Man moves court against doc

Archis Mohan

New Delhi, December 3

THE HUSBAND of a woman who died in the Holy Family Hospital after what was supposed to be a minor procedure has launched court action against the surgeon.

Kusum Lata Sharma, 51, was scheduled for a cystoscopy because of recurrent urinary infection. It is regarded as a relatively minor medical procedure. She was to be discharged the same day but eight days later was dead from internal hemorrhaging and septicemia.

Her husband, Ved Prakash Sharma, has filed a FIR at the New Friends Colony police station against the surgeon, Dr G.S.

Kochar and hospital authorities under section 304A of IPC, culpable homicide not amounting to murder.

"The doctor told me the operation will take 20 minutes and it would be under local anaesthetic. My wife was to be discharged that very day," Sharma said.

Kusum was operated upon on August 9. Dr Kochar described it as a successful operation. That night her condition worsened and the following day Sharma was asked to arrange for blood, as his wife's haemoglobin count had dipped.

Later, an echocardiogram was done on Kusum without her husband's knowledge.

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"We gave her antibiotics. But her resistance was low as she was suffering from many other diseases. It was a totally unforeseen complication that happens rarely," he said.

Sharma, meanwhile, has taken his complaints to the Union and the Delhi health ministers as well as the Delhi and the Indian Medical Council.

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HTC, New Delhi

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# THE TIMES OF INDIA

New Delhi, Tuesday, July 23, 2002 www.timesofindia.com Capital 28 pages\* Invitation Price Rs. 1.50

## International

### Peres extends conditional

offer to general, who is in Bangalore, is said to have rubbished the report.

• Detailed report on page 7



## India

### Dal merger just a dream

more than \$3.8 billion of expected further layoffs for the time being. NYT News Service

## Times Sport

### Davenport, Seles

## Doctors dissect the noble profession

By Kalpana Jain  
TIMES NEWS NETWORK

New Delhi: Can doctors claim that they provide service to humanity through a noble profession if all they have on their minds is the money that they can make?

A symposium on ethics in clinical practice, organised by the National Academy of Medical Sciences, on Monday drew attention to the charging of exorbitant fees and the splitting of fees when a patient is referred for tests.

It is perhaps the first time that top doctors have shown a willingness to criticise unethical medical practices so openly.

"Integrity, it seems, is getting less and less," said director of the KGMC Institute of Clinical Epidemiology,

Lucknow, R.C. Ahuja. Fee splitting is getting to be the sole reason for referring patients. "This has become a major driving force for diagnostics and even for bringing patients from villages."

Of course, no one talks about it, admitted the top medical scientists who had gathered for the symposium. Hardly anyone in the profession reports colleagues indulging in unethical practices, which only ensures that they continue unchecked, Ahuja said.

What is making the situation worse is that an increasing number of doctors are marrying their colleagues, these doctors pointed out. Marriage between a physician and a pathologist leads to referrals within the house, said Ahuja. It is worse when patients are not even given a

choice but told to just go to a particular place or a doctor, he said.

"If you are in business, where market forces determine your fees, where fees splitting goes on and where payments take place under the table as well, should you call yourself part of the noble profession?" asked Dr JN Pande, professor of medicine at the All-India Institute of Medical Sciences.

Studies in the US have shown that 60 per cent of tests done on those going for elective surgery were not required. And unwarranted use of endoscopies and angiographies have been found to be 20 per cent more at prestigious hospitals there.

Such use in private practice, where much less control is exercised, is likely to be much more, said Ahuja.

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# Court directs police to file case against clinic doctors

By Bhadra Sinha  
Times News Network

NEW DELHI: Doctors at a private nursing home in north-west Delhi have been accused of giving an overdose of anaesthesia to a patient, thus causing her death. The patient, Vinay Sharma, was admitted to the nursing home for a laparoscopic surgery to remove a stone in her gall bladder.

A city court, which heard the complaint of the patient's husband, Pawan Sharma, directed the Jangirpuri police to register a case of criminal negligence against the nursing home and its doctors.

Metropolitan magistrate Sanjay Aggarwal gave the directions following a report by a doctor who conducted an autopsy on Vinay Sharma. Dr S K Singhal, who also filed an affidavit in the court, is the head of the department of forensic medicine and toxicology at a medical college in Dhule, Maharashtra.

Dr Singhal said in his report that Sharma's death was not due to a heart attack, as claimed by the nursing home. "In my opinion, the patient died within a short time of starting the operation," he said.

His affidavit added that the doctors had failed to complete the sur-

gery. He said the nursing home's claim that laparoscopic surgeries can be done without cuts and tears was non-scientific and misleading.

While referring to the nursing home's claim about Sharma suffering from a heart attack, the report said: "It is expected that every hospital should have proper infrastructure to resuscitate the heart.... It was noticed that there were prick marks on the left side of the chest but not on the heart surface."

According to the complaint, Sharma was admitted to the nursing home for a laparoscopic surgery on July 15, 2001. Three days later she was taken to for surgery. Pawan Sharma alleged that despite his request he was not permitted to inspect the operation theatre.

On July 18, Sharma was operated upon at 4 pm. While the doctors had assured that the operation would be over in 30 minutes, she was not brought out for two and a half hours.

When Pawan Sharma inquired about his wife's condition, he was informed that a heart attack had caused her death. Pawan Sharma filed the complaint after receiving the autopsy report. He also filed a videotape record of the autopsy test.

The Tribune dated 25th June, 2002.

## Health Dept writes to Home on IMA demand

Tribune  
25/6/2002

### OUR CORRESPONDENT

BARNALA, JUNE 24

The Punjab Health and Family Welfare Department has written to the Principal Secretary, Home, Punjab, drawing his attention towards an issue pertaining to not registering any case under Section 304 of the IPC against any private doctor for negligence prior to an objective probe. This has been done on a demand raised by

Dr R.C.Garg, Punjab IMA president, in a letter to the Punjab Health and Family Welfare Department.

Talking to this reporter here yesterday, Dr Garg disclosed that as per a communication received from Dr Romesh Chander Dogra, Punjab Health and Family Welfare Minister, about assault on doctors, the minister had written to the Punjab Home Department.

Dr Garg, in his letter dated May 20, had demanded that any doctor of a private hospital should not be booked under Section 304 of the IPC on the charge of negligence in the wake of the death of a patient at some private nursing home by the police before a proper probe.

Dr Garg had suggested that a

district-level panel comprising the district police chief, the Civil Surgeon, an IMA member, a medical expert in that particular area and a social worker should conduct a thorough probe into any such case and following confirmation by this panel a doctor be booked under Section 304 of the IPC.

Dr Garg hailed Mr Dogra's statement that there was no scam pertaining to recruitment of PCMSA doctors during PPSC Chairman Ravi Sidhu's tenure.

Commenting on the Punjab Government's proposal to bring the "clinical establishment Bill" on private nursing homes/hospitals in Punjab, Dr Garg said the Punjab IMA must be taken into confidence before such a Bill was passed.



Bomb'. In folklore, the mother's name remains a mystery. Favourite advertising slogan: Taste the Tandava!

As the Jharoo-pochchaman of the Nation, Kalam has invented the ultimate clean-up device — a

Most likely to say: 10, 8, 8, 7, 6, 5, 4, 3....  
See Dabyaman on page 18

called Hamsa colony, about 700-800 meters from the venue of inauguration ceremony. A joint party of the Army

In another development, a module of the Pakistan-based Lashkar-e-Taiba militant outfit was busted in Poonch district.

JUNE 16 TOP

# NRI doctor spends over Rs 1 crore in prolonged quest for justice

By Aditya Ghosh  
TIMES NEWS NETWORK

Kolkata: It took a doctor to get two fellow doctors convicted for negligence, in one of the first such cases in the country. When Anuradha Saha, a graduate in child psychology from Columbia University, died while on a short visit to Kolkata in 1998, it made no news. But her husband, Dr Kunal Saha, a US-based doctor conducting research on HIV, made sure that people in this city do not forget her death in a hurry.

He shuttled between the US

and India to lodge criminal cases against the three doctors who attended to his wife and followed it up with a complaint with the West Bengal Medical Council. A medical graduate from the city, Saha pursued his case against the three senior doctors with messianic zeal, eventually getting them convicted for causing death due to negligence. The lower court sentenced two of the doctors to undergo three months' imprisonment but acquitted the third.

Ironically, the sentence satisfied none of the parties. While doctors in the city cried foul,

threatened to go on strike, questioned magisterial wisdom, put on black badges and rushed to the defence of the two fellow doctors, who were going in appeal to the high court and are at large on bail, Saha felt the punishment was inadequate.

In an e-mail from the US this week, he said: "After I returned to the US after losing her, I started educating myself on this rare disease and approached almost every single expert on TEN around the world for their opinions and also the manufacturer of Depomedrol, both in US and in India."

Pointing out that medico-legal cases are rare in India, Saha said: "Even the attorneys who sought for me in Delhi and in Kolkata were totally clueless about how to proceed. I had to send them all the literature and supporting documents and then speak to them for hours to explain, fax them, e-mail them, day after day...."

His phone bills often came to \$1,000 a day. On one occasion, he ran up a bill of \$5,000. He claimed to have spent over one crore rupees in fighting the case and had to borrow part of it. Angry at accusations of being

propped up by the American Insurance lobby, he challenged anyone to prove it.

Saha also dismisses explanations that his wife suffered from a very rare disease, TEN (Toxic Epidermal Necrolysis, which occurs in one out of 1.2 million people), and that it was difficult to diagnose.

The first doctor to treat her, Sukumar Mukherjee, he points out, failed to make the diagnosis but prescribed, first on May 7 and again on May 11 an overdose of a long-acting steroid. The next two doctors made the correct diagnosis and were

aware of the lethal dose of steroids already used, but still proceeded to prescribe a "quick-acting" steroid. It is not the use of the steroid but the application of the steroid, an overdose, which killed Anuradha.

The medical fraternity in India has reacted hysterically to the verdict. IMA president Ketan Desai flew down to Kolkata to stand by the doctors and assured them that IMA would be a party when the convicted doctors go in appeal.

Anuradha's death is going to haunt doctors for a long time.

Related report on page 8



19 April, 2003, Times of India

# Court tells doctors to pay for leaving gauge wire in body

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4 Tuesday, April 1, 2003

DELHI

TIMES OF INDIA

# Woman sterilised without consent

TIMES NEWS NETWORK

**New Delhi:** A couple have alleged that doctors at the Sucheta Kriplani hospital conducted sterilisation procedure on the woman, who had come for delivery, without informing them. The couple, Rajendra Kumar and Urmila, have registered a FIR with the Mandir Marg police station.

Hospital authorities however said the patient had signed on the consent form. According to hospital medical superintendent Dr L K Sood, women admitted for the delivery of their second baby are persuaded to go in

for sterilisation. "But we go ahead only when the patient gives a formal consent," he said.

Sood said the police have taken a copy of Urmila's medical records, including the consent letter. "We shall know only after they have examined the case," he said.

Kumar, who runs a tailoring unit, said: "Urmila was admitted to the hospital on March 27 after her labour pains started."

The next day, they were told that the delivery would be done through the caesarean section. "The doctors told me that the child's heart beat had slowed

## Allegations

- The couple allege that doctors conducted a sterilisation on woman, without informing them.

- The couple have registered a FIR.

- Hospital superintendent Dr L K Sood, said women admitted for the delivery of their second baby are persuaded to go in for sterilisation.

down," Kumar said. Kumar said before Urmila was taken to the operation theatre, she was made to sign sever-

al papers — which the authorities claimed to be regarding caesarean. Her signatures were also taken after the delivery. The procedure had been done shortly after the caesarean.

This is Urmila's second child. Kumar said he came to know about the procedure, to be sterilised after two children, only when his wife was shifted to ward No. 3, where patients sterilised patients are kept.

The couple complained to the head of gynaecology Uma Goyal.

She could not be contacted on Monday despite repeated attempts.



# Danger to profession

## Man moves court against doc

Archis Mohan  
New Delhi, December 3

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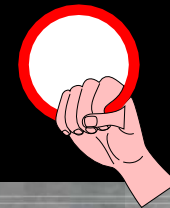
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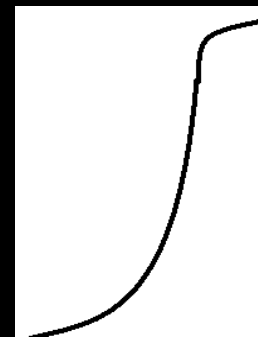
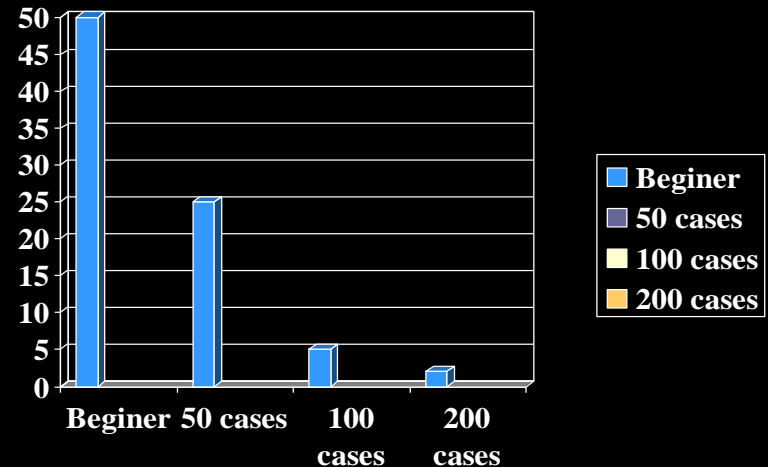
WALS

The Million Dollar Question is  
are you Prepared?



# Level of Human error- Rasmussen's model

- Skill base level
  - Learning curve
- Rule base level
  - Misapplication of good rules
  - Application of bad rules
- Knowledge base level
  - Incorrect knowledge
  - Incomplete knowledge



# Categories of human error

## Reason's Model

- Related to performance of frontline operator
  - Effect is immediate
- Latent, Hidden within the system
  - Lie dormant “*accident waiting to happen*”
  - Combine with other factors it is the greatest threat to the safety of MAS





# Human reliability analysis (HRA)

- Embraces 3 disciplines
  - Ergonomics
  - Psychology
  - Engineering



# Ergonomics

“Interface Between Man & Machine”





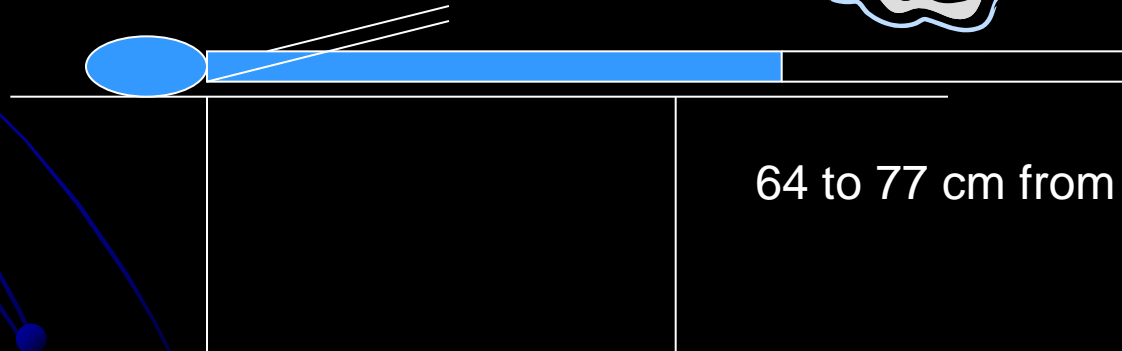
# Ergonomics

“Interface Between Man & Machine”



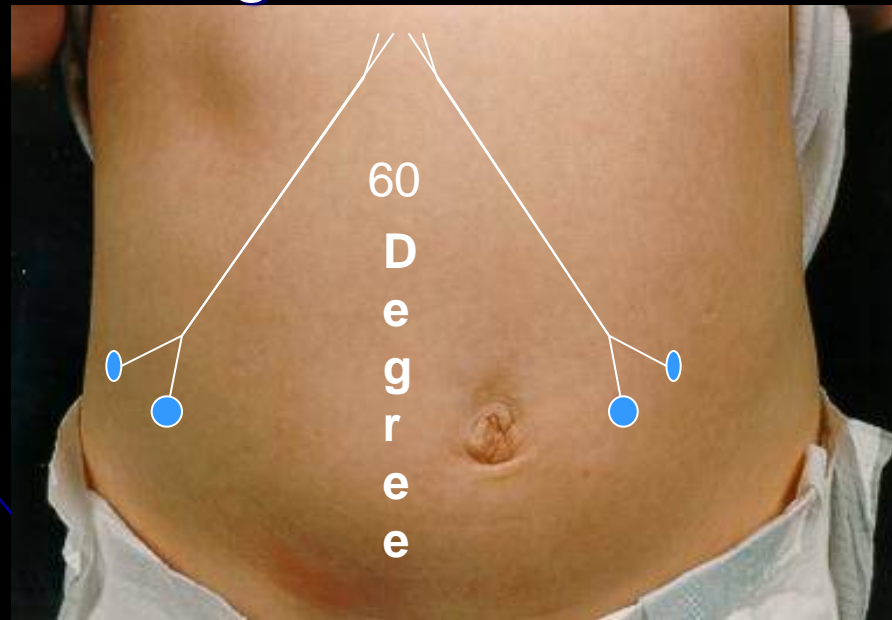
# Ergonomics of MAS

- Optimum table height should position the laparoscopic instrument handles close to surgeon's elbow. This is 64 to 77 cm above floor level.

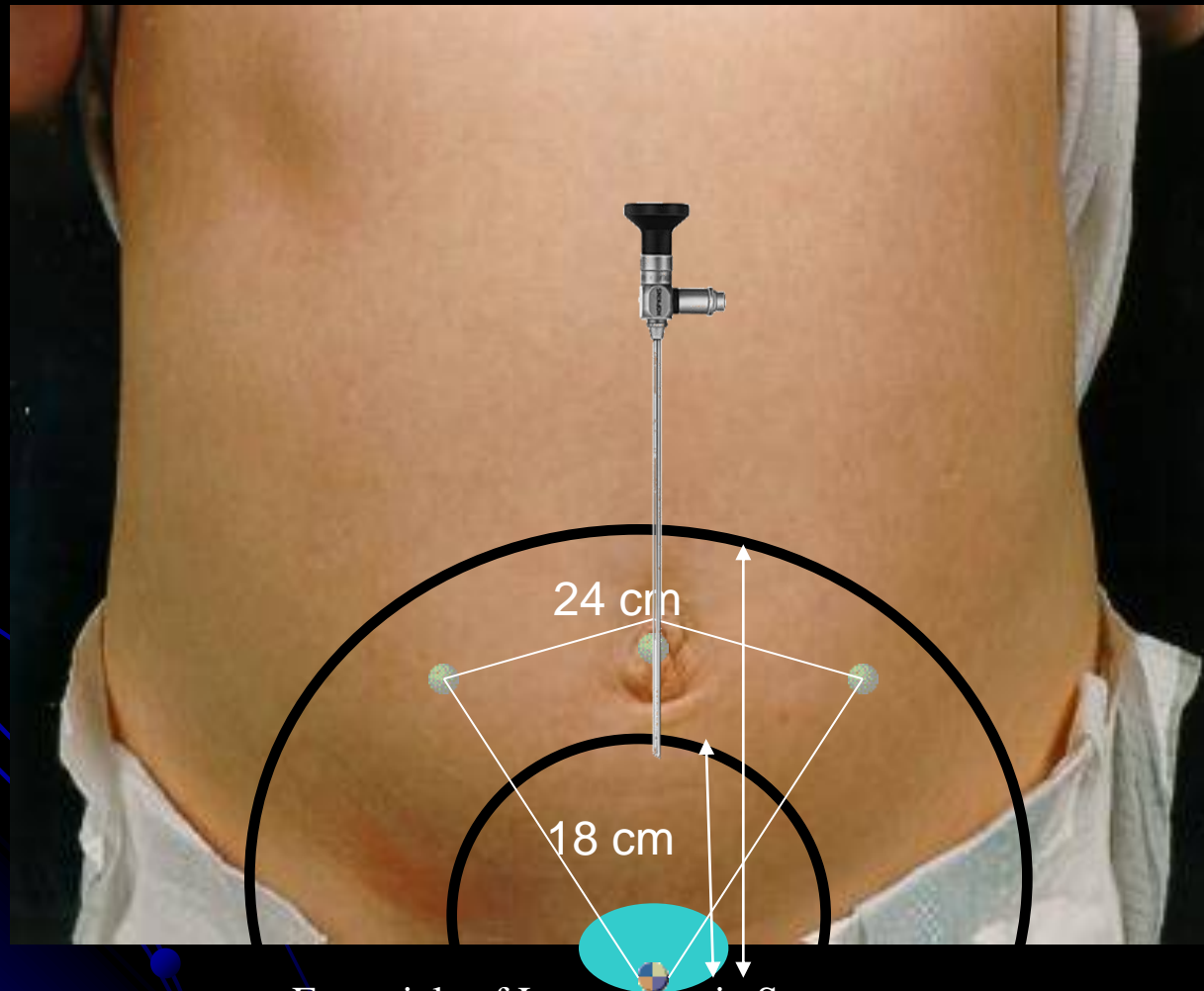


# Ergonomics of MAS contd...

- Manipulation angle should be as near as possible to 60 degree

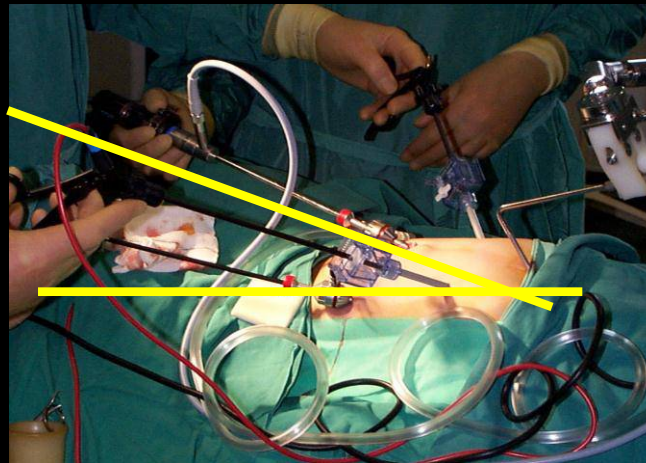


# Follow The Rule of Diamond



# Ergonomics of MAS contd...

- Elevation angle should be between 15 to 30 degree

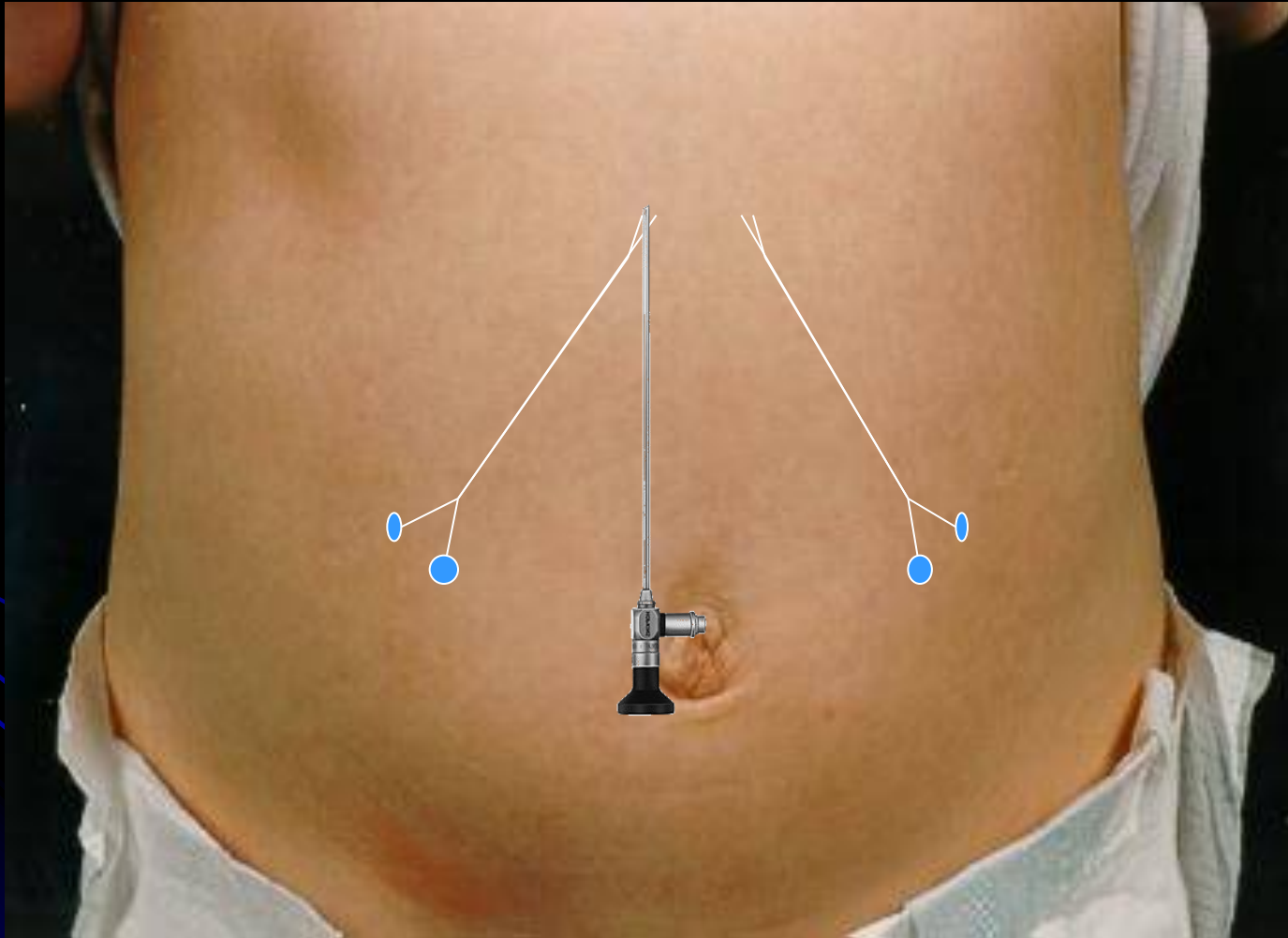


**30 degree**





# Prevent loosening Instrument



# Coaxial Alignment



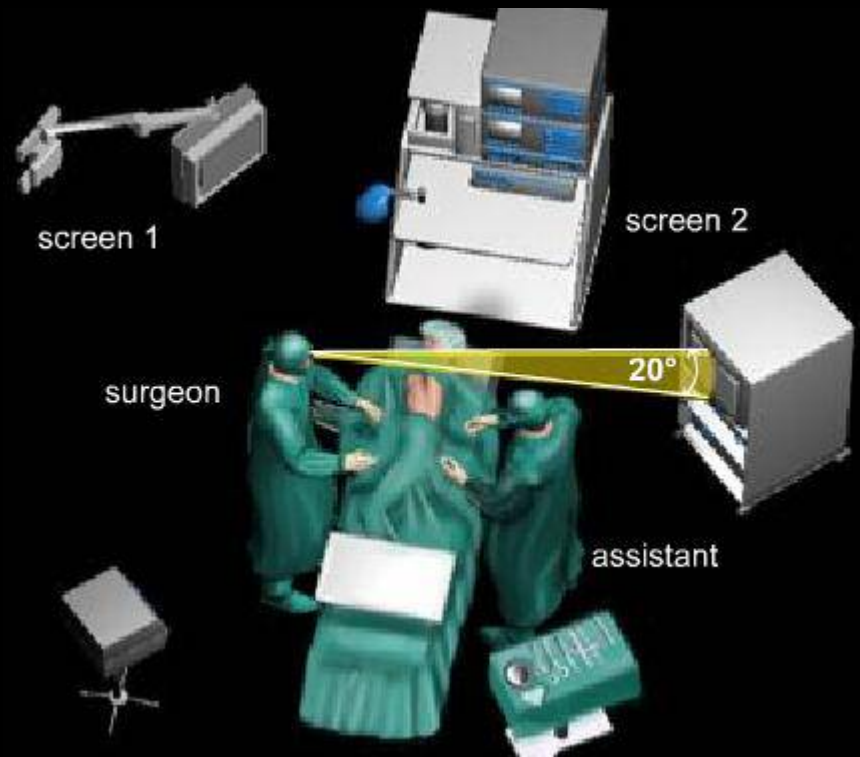
Monitor Plane of Dissection & Surgeon in same line



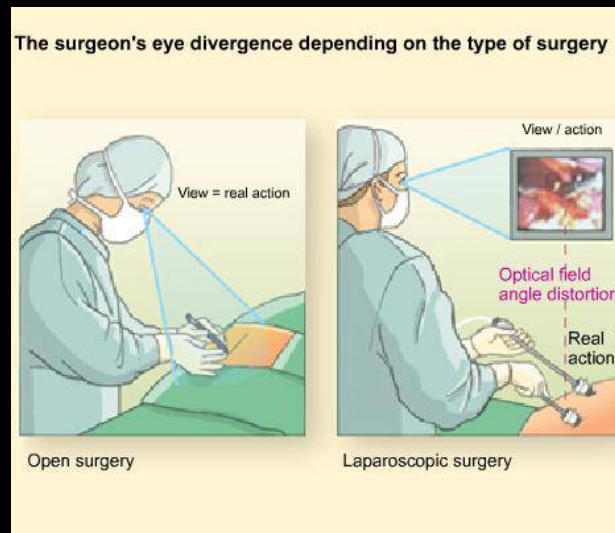
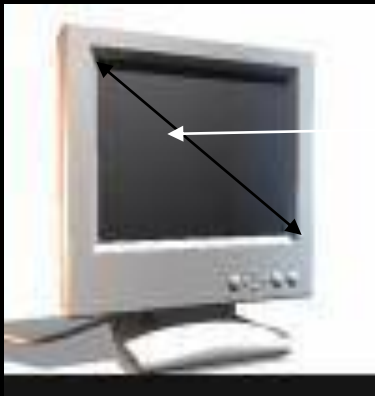
# Resting Eye

Centre of the Monitor should be placed 20 degree lower than the eye.

This position corresponds with the normal resting position of oculomotor muscle.



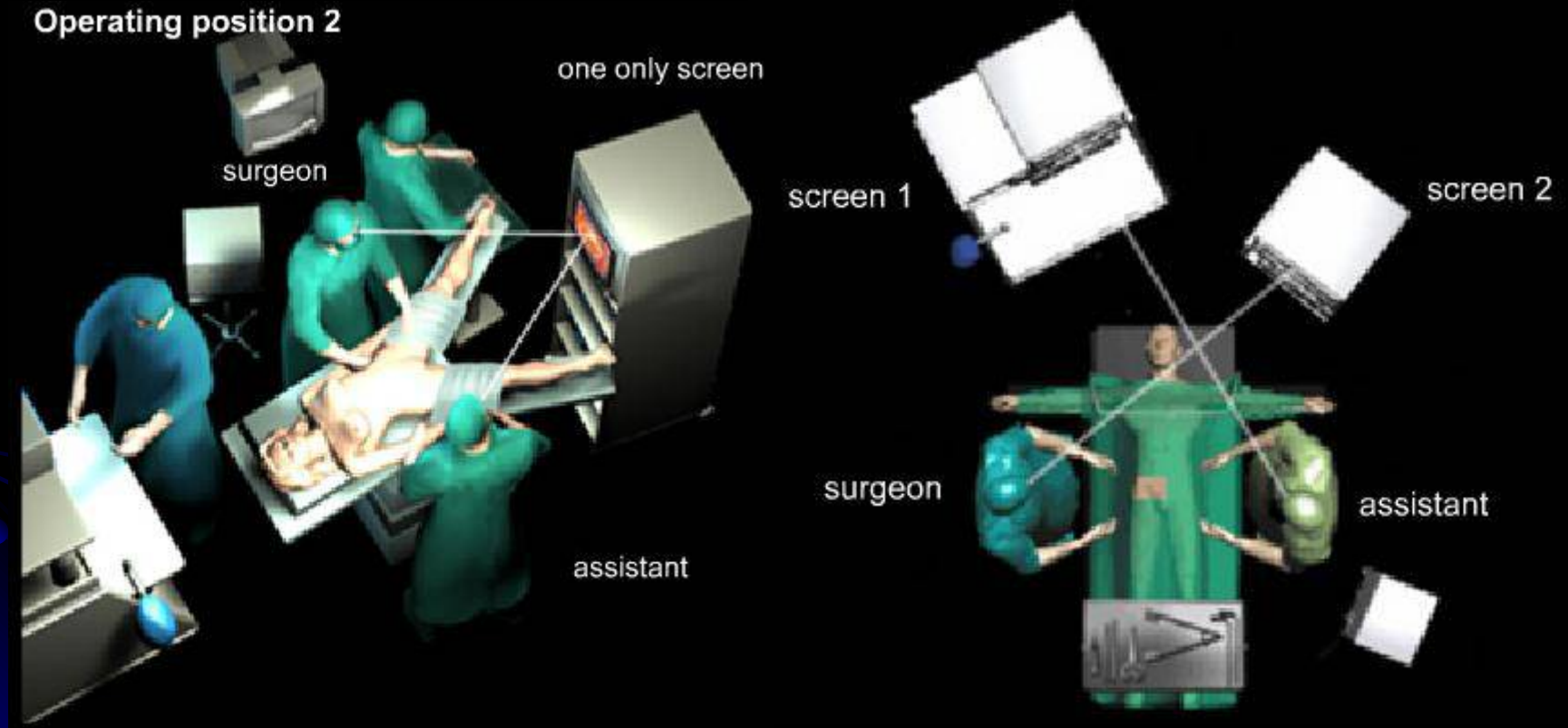
# Distance & size of Monitor



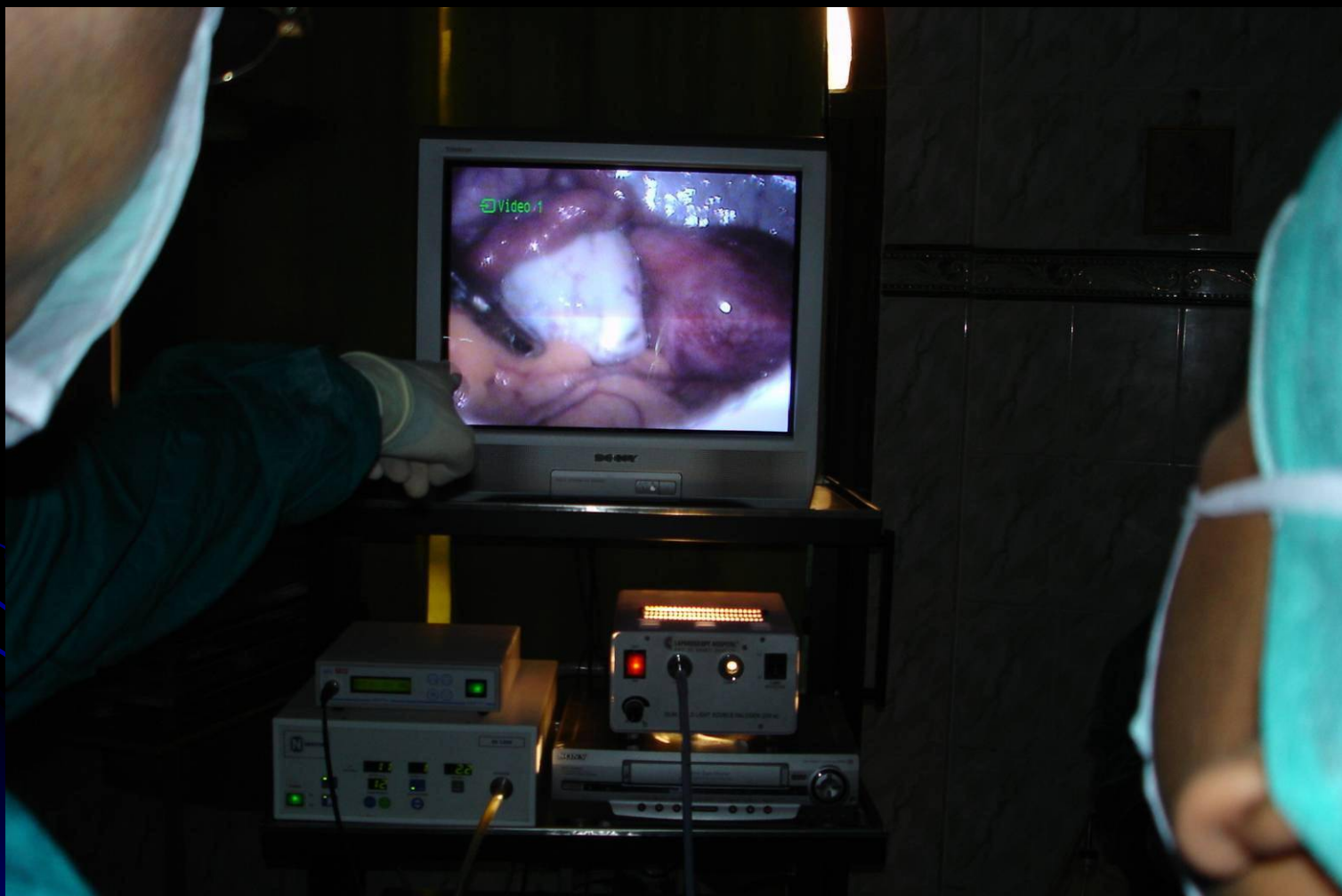
**Distance of monitor should be 5 times of Diagonal length of screen**



# Number of Monitor



# O.T. Light



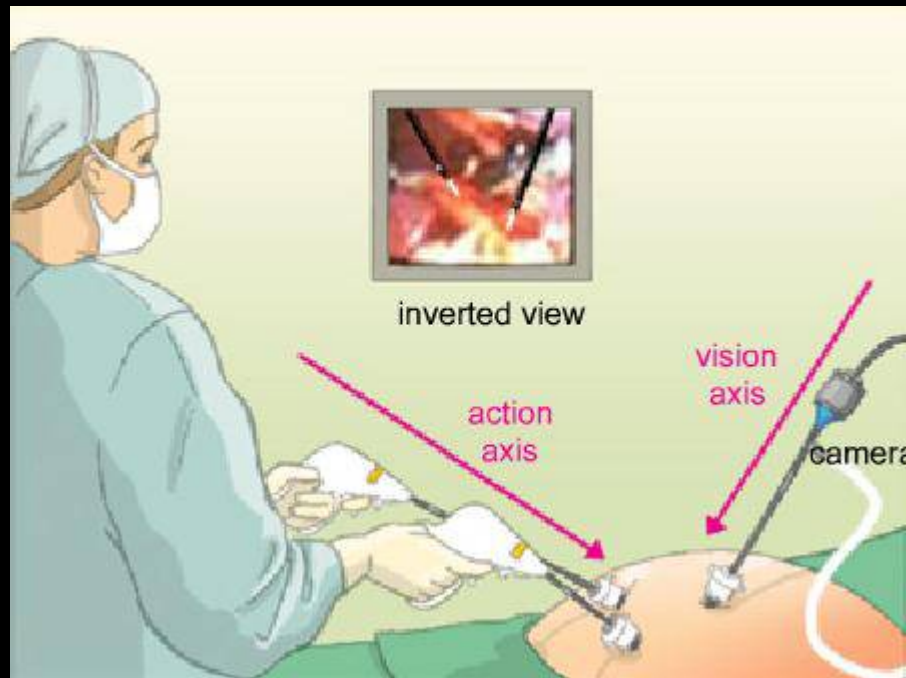
# Art of Maintaining Endoscopic eyes

- Avoid touching viscera by the tip of telescope
- Prevent fogging of telescope
- Keep telescope steady
- Keep panoramic vision when surgeon is inactive



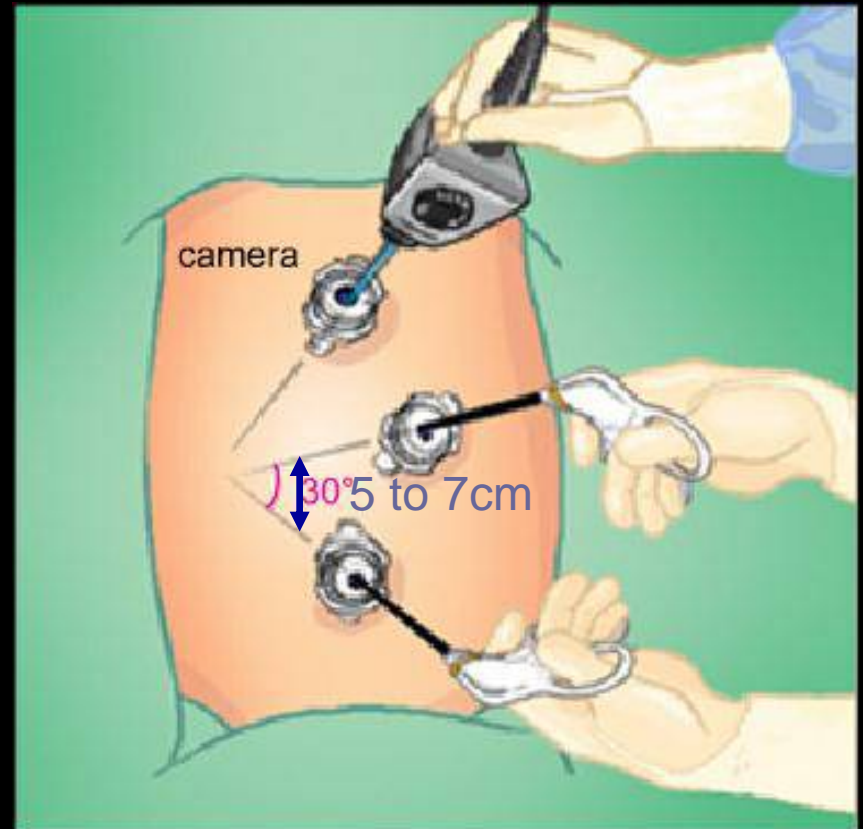


# Mirror Image



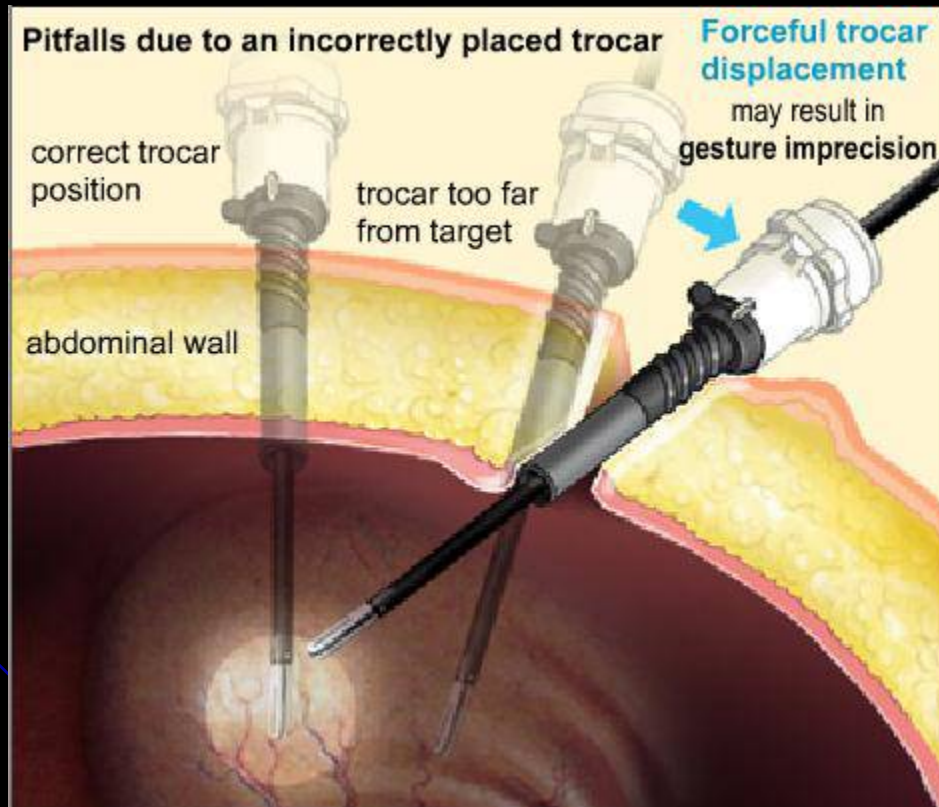
# Sectorization

The main advantage of sectoring is that it allows the surgeon to move freely, as the camera is away from the operative field and there is no physical contact between the surgeon and the camera holder.





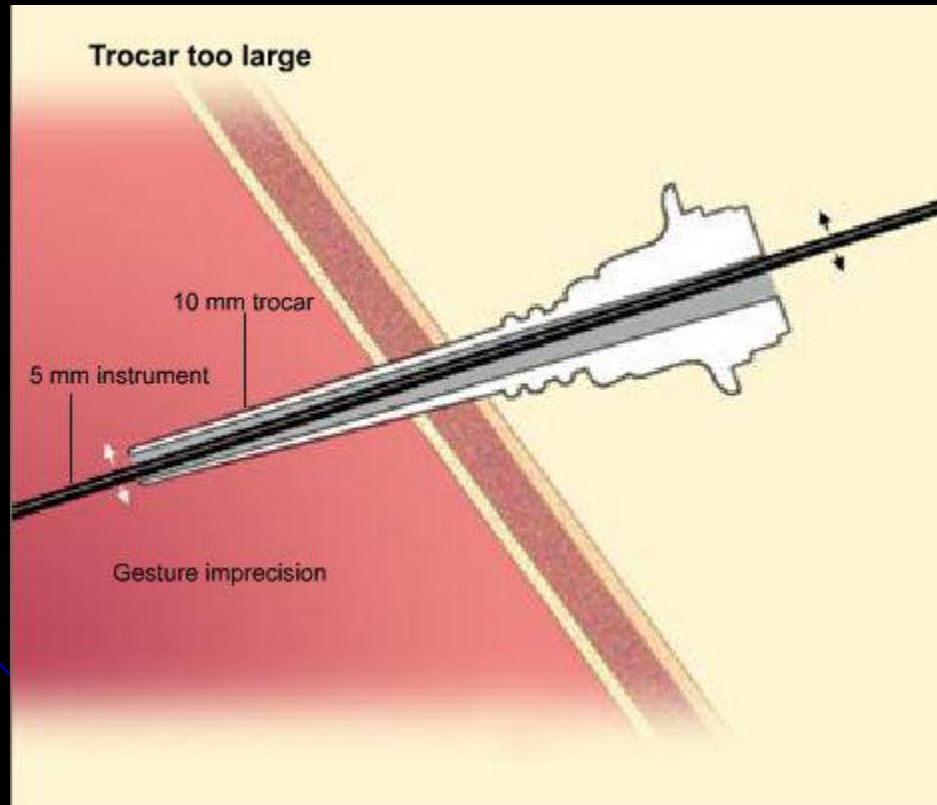
# Distance between Instruments



Not less than 5 cm

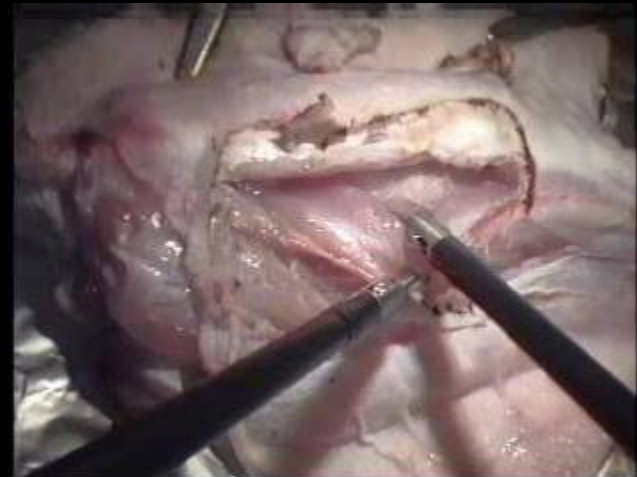
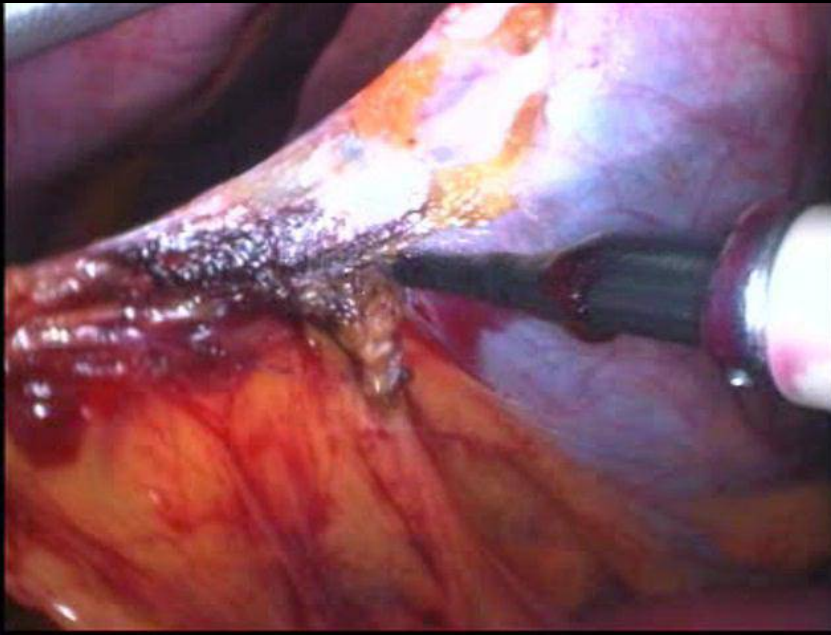


# Gesture Imprecision





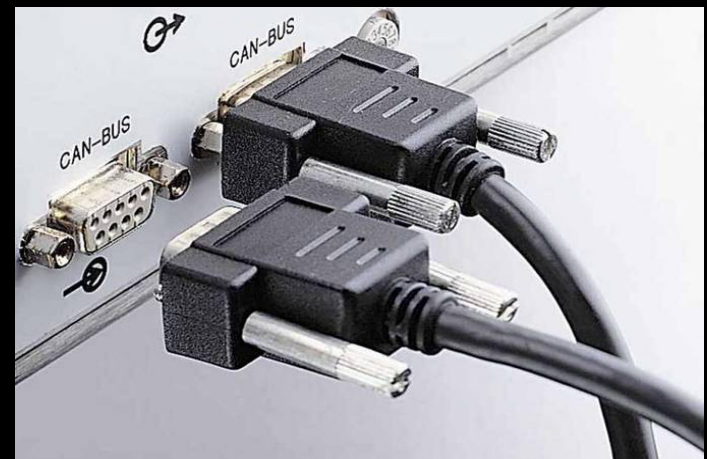
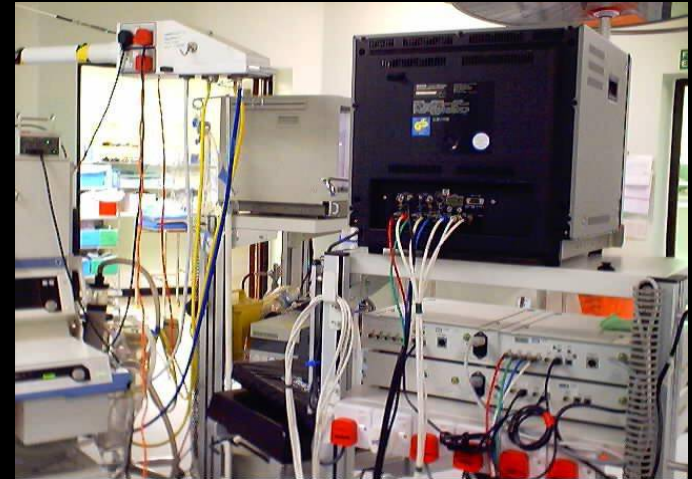
# Use of Shadow



# Engineering

“MAS is medical by-product of Engineering”

- Lack of Engineering knowledge
- Poor Engineered Equipments
- Lack of periodical checkups
- Faulty Power supply





# Psychology

“MAS Psychology is often Prejudice”

- Impatient
- Over enthusiastic
- Reluctant to training
- Dependent to others



# Risk factors for iatrogenic injuries

- Patient

- Previous surgery, adhesion, obesity, difficult anatomy

- Surgeon

- Misinterpretation of anatomy,
- Inexperience/faulty technique,
- Learning curve,
- Misuse of energised equipment,
- Some do not have the necessary attributes for laparoscopy





# Misinterpretation of anatomy

- ❑ Surgeon operates on image rather than reality
- ❑ Visual psychological studies has shown that laparoscopic surgeon works on snap interpretation by brain and success or disaster depends on whether snaps are right or wrong
- ❑ Snap interpretation will be wrong if there is
  - Eye ball degradation
- ❑ Lack of Initial identification & memory of key structure to the point of absolute certainty.



# Eagles Eye

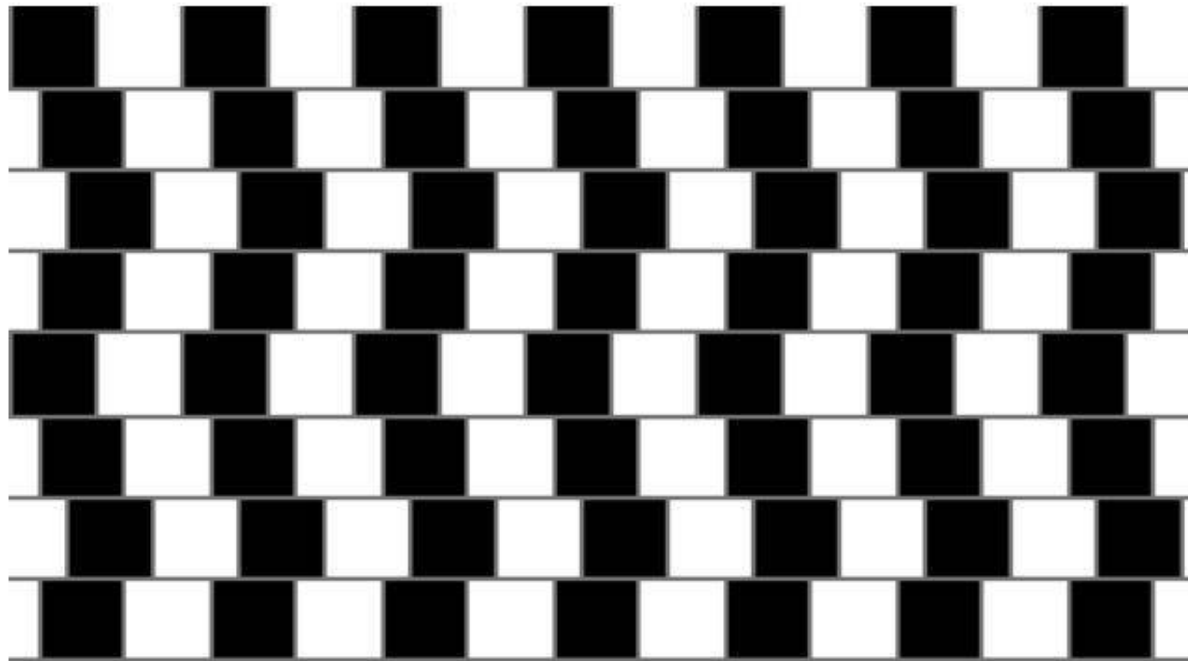




# Misinterpretation of anatomy



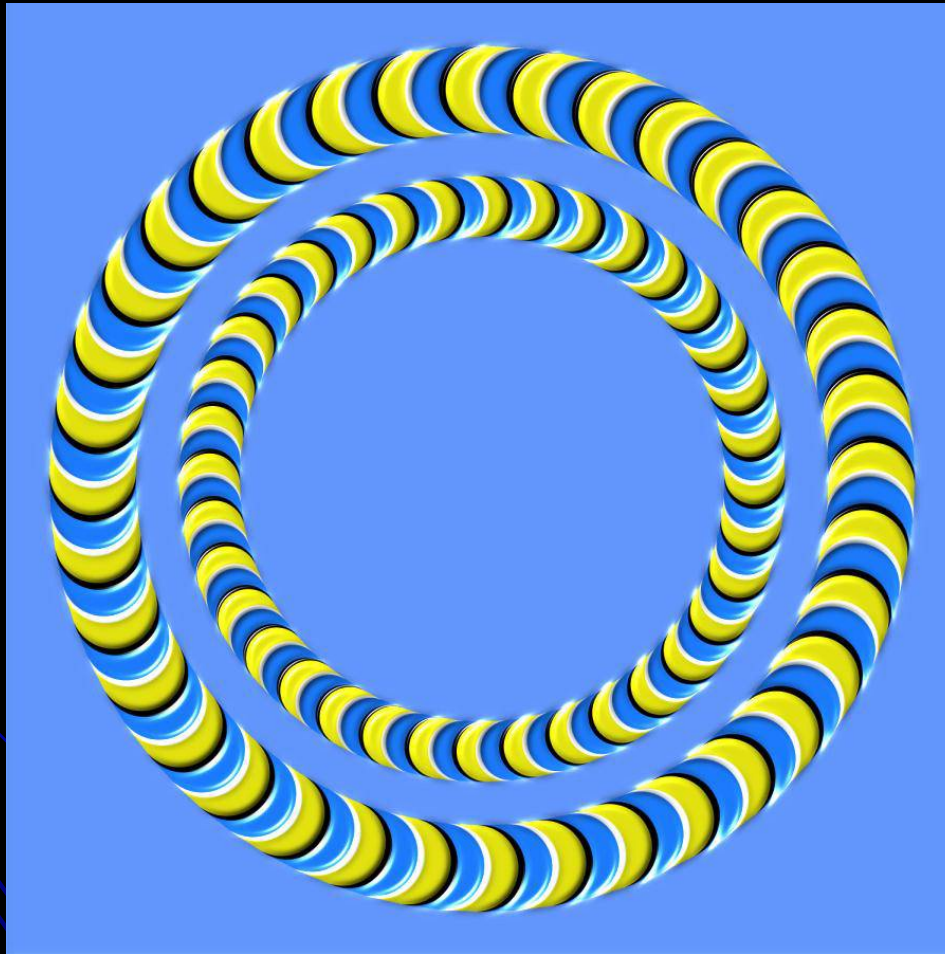
# Optical Illusions



Are the horizontal lines parallel or do they slope?



# Optical Illusions





# Optical Illusions

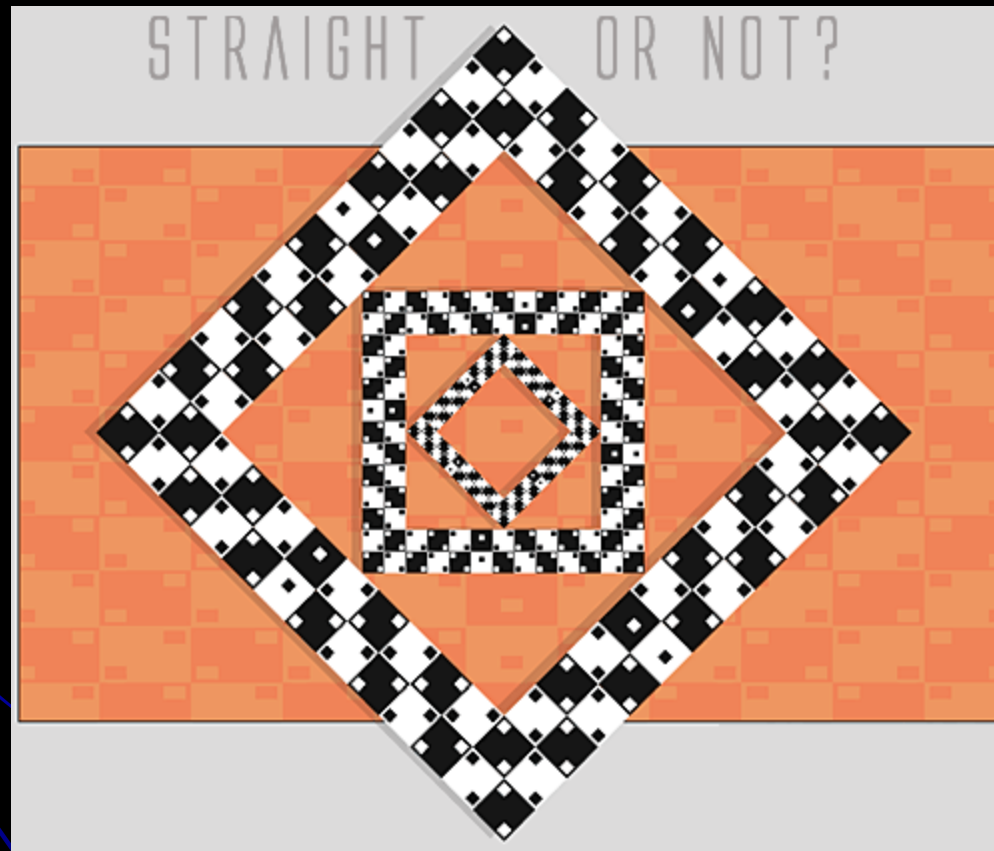


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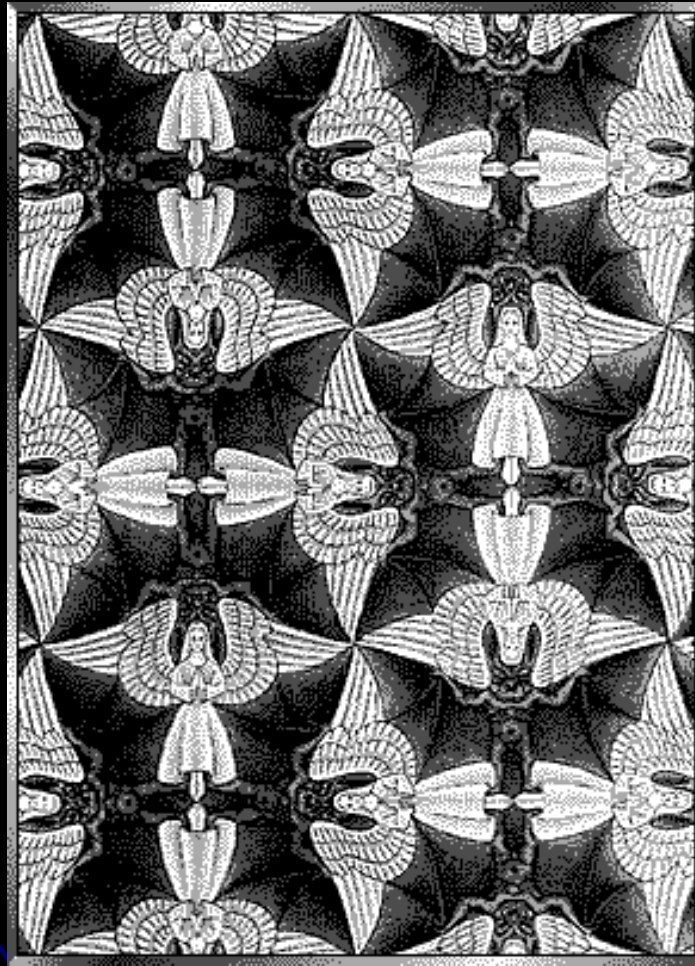
Essentials of Laparoscopic Surgery



# Optical Illusions



# Optical Illusions



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# Most Common Habit Steps of Error

- Confident entry and exit
- Overshooting
- Ignorance of assistant Port
- Less irrigation and suction
- Ignorance of Final inspection
- High Pressure Pneumoperitoneum
- Less blunt dissection



# Conversion Psychology of MAS

## Conversions threshold

- Elective – Minimal increase in morbidity
  - Initial assessment
  - Trial dissection
  - Lack of progress – operation not proceeding
- Enforced – Significant increase in morbidity/mortality
  - “Surgeon has to convert – major complication”



# Fatigue Psychology of MAS

## Fatigue factor

- Cerebrally 3 times more intensive
- Degradation of eye ball fixation
- Degraded judgement and dexterity
- Golden period
- Strategic rest breaks
- Operating duo – two surgeons share the execution of procedure





# Self Assessment

- Always define component steps of operation
  - Inter-step (Procedural)
  - Intra-step (Executional)
- Improve your ergonomics as much as possible
- Analyse the videos for error identification
- Give marks to yourself after each operation
- Maintain your instrument yourself
- Have a break after every 45 minute
- Keep low threshold of conversion



# Practice Makes The Man Perfect

A good training  
program makes a  
laparoscopic surgeons  
perfect



# Errors and Disasters - HRA

- Reduce errors to  
ALARP region  
AS  
LOW  
AS  
REASONABLY  
POSSIBLE”  
→
- Trainer should predict  
what may go wrong  
and then insert  
defence system





Thank You

# Human Errors:

*"ALARP"*

Those who were  
Sleeping Can  
Open Their  
Eyes Now !



## MISTAKES

IT COULD BE THAT THE PURPOSE OF YOUR LIFE IS  
ONLY TO SERVE AS A WARNING TO OTHERS.

One can not expect to perform surgery without encountering some type of adverse occurrence.



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