

from whom it is possible to obtain consent in time (Section 92 IPC)<sup>4</sup>. In an emergency involving children when their parents or guardians are not available, consent is taken from the person who brings the child to the emergency department like teacher, head master, relative etc<sup>7</sup>.

### Documentation

The documentation or medico-legal report should be prepared by the treating doctor himself in the prescribed format soon after providing life saving treatment to the patient. The report is always prepared in duplicate. One original copy is handed over to the investigating officer and the other duplicate or carbon copy is kept in hospital records. In suspected poisoning cases one copy of the report mentioning signs and symptoms and findings of clinical examination should be provided to the forensic science laboratory.

Every medico-legal report has three components, preamble, body of information and conclusions or inference. Preamble mentions particulars of patient like name, father's name, age, sex, address, religion, identifications marks including thumb impression, date and time of examination and name of person accompanying including relations or police officer with belt number and rank. In body of the report, details of illness like history, complaints, findings of medical/clinical examination including general physical and systemic examination along with vital parameters, details of injuries with nature, size, site and shape, treatment prescribed (both prophylactic and definitive treatment), details of exhibits/evidences (clothings, blood, vaginal slides, vaginal swabs, anal swabs, blood sample, gastric lavage, urine etc.) preserved, investigations suggested (X-rays, CT scan, USG, etc.) and referral made to other specialist should be mentioned. Firearm injuries should mention characteristics of entry wounds like burning, blackening, tattooing, abrasion collar, contusion collar etc. and details of exit wound if any. In conclusion the medical expert should give his opinion regarding nature of injuries whether simple; grievous or dangerous, age of injury and should also opine about probable weapon used. In case immediate opinion cannot be given for want of X-ray report or reports of other investigations, the same should be mentioned as "opinion reserved" with remarks/reasons. The report must be signed by the treating medical expert with full name, designation and address<sup>3,14</sup>.

### Preservation of Evidence

In medico-legal cases all relevant biological specimens from the body of accused or victim as

deemed necessary by medical officer or requested by the investigating officer must be preserved. Important specimens include blood for grouping, bullets/pellets recovered from the body of person, gastric lavage, blood or urine in poisoning cases, vaginal swabs, vaginal slides, anal swabs in cases of sexual offences.

Garments of the accused or victim are also important for further investigation of the case and could give valuable information. In case clothing are stained with wet blood they should be dried first and then sealed and handed over to the investigating officer.

All evidences should be properly preserved and labelled mentioning details about particulars of the patient. They should be properly sealed and handed over to the investigating officer along with sample of the seal. The description of preserved articles should be noted in the medico-legal report.

### Pediatric Trauma Cases

The various trauma cases include injury, hurt and assault. As per section 44 of IPC, injury has been defined as any harm caused to person's body, mind, property and reputation. Hurt is causing bodily pain, disease or infirmity caused to any person (319 IPC). Assault is an offer or threat or attempt to apply force to body of another in a hostile manner (351 IPC)<sup>4</sup>. The child may present with accidental or homicidal or suicidal injuries in form of abrasions, bruises, lacerations, sharp weapon injuries, firearm injuries, and explosion related injuries etc.

In medico-legal cases, after examination and treatment of the patient, physician is required to give opinion regarding the nature of injury and type of the weapon that could have caused the injury. The injuries which are not dangerous and do not fulfill the criteria of grievous hurt, are labelled as simple in nature. The opinion of the doctor should be guided by the Section 320 IPC by grading following injuries as grievous in nature<sup>4</sup>:

- (i) Emasculation
- (ii) Permanent privation of sight of either eye
- (iii) Permanent privation of hearing of either ear
- (iv) Fracture or dislocation of a bone or tooth
- (v) Permanent disfigurement of the head or face
- (vi) Privation of any limb or joint
- (vii) Destruction or permanent impairing of the powers of any limb or joint

# Transport of Sick Children

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A sick child may need to be transported to a higher level facility if the medical infrastructure and expertise required for care are not available locally<sup>1</sup>. Inter-hospital or intra-hospital transport may also be required for a sick child needing a specialized investigation. The third situation where transport is required is return or “back-transport” wherein after the child’s condition has improved, he/she is referred back to the parent hospital or another lower level facility for further ongoing care. This helps in decreasing the pressure on the beds in the tertiary care centers making them available for more sick patients and allows families to be closer to their homes.

Organization of the transport program is intimately linked to regionalization of care<sup>2</sup>. One of the major reasons for lack of organized transport services in our country is lack of effective regionalization or tier system. The major constraints in a developing country like ours are that the tertiary care facilities are too few and often too far away. The referral facilities are too distant, overcrowded and often beds are not available. The road network in rural areas is unsatisfactory and of poor quality. Well equipped transport vehicles are usually not available and there are very few trained paramedical/medical personnel available to accompany the patient during the transport. The communication system till recently was very poor though the current mobile revolution seems to be changing that scenario; however, there is poor networking between the referral and referring health facilities.

In the Western world, transport of sick patients is usually managed by specialized transport programs which have the responsibility of providing transport services as well as training and education of the personnel involved in transport. The responsibility of picking up a sick baby or child lies with the transport team of the tertiary care center. This is logical and more cost-effective because the

team members of the referral center are better equipped and trained to do this. They are also able to keep their skills upto date because of the frequency of performing such tasks. In our country, majority of the referral centers except for a few in the private sector have not taken up this responsibility. The burden of organizing the transport is on the family and the referring hospital, which makes it more difficult and compromises the outcomes.

## Components of Transport Program

The organization of a transport system requires a multidisciplinary team with a director/leader, transport equipment and vehicles, a good communication system and an inbuilt mechanism of quality assurance and improvement<sup>3, 4</sup>. The program must have for a system of ongoing training to update knowledge and skills of the current and new team members.

For effective and smooth functioning, there should be clearly identified and mutually agreed indications for transport, which should be known to both, the referral as well as the referring units. High risk perinatal patients need to be identified during the early prenatal, intrapartum and neonatal periods to provide timely access to appropriate level of care. Despite efforts to identify high risk perinatal patients in the antepartum period, 30-50 % of infants who ultimately require additional neonatal care are not recognized until late intrapartum or early neonatal period<sup>5</sup>.

## Transport Team

The team members for transport duty should be pre-identified and readily available to leave at short notice. The overall organizational leader of the team is a medical director. The other team members are a medical control physician (can be a consultant or senior resident), nurse and respiratory

**Table 10.5 Mortality index for neonatal transportation (MINT) score<sup>18</sup>**

Variable	Finding	Score
1. Birth weight	<750 g	5
	751-1000 g	2
	1001-1500 g	1
	>1500 g	0
2. 1-min Apgar score	0	8
	1	5
	2	2
	3	2
	>3	0
3. Age	0-1 hr	4
	> 1 hr	0
4. Congenital abnormality	Yes	5
	No	0
5. pH	<6.9	10
	6.9-7.1	4
	>7.1	0
6. PaO <sub>2</sub>	≤3 kPa	2
	>3 kPa	0
7. Intubated at time of call	Yes	6
	No	0

Broughton et al. Neonatal Intensive Care Study Group. The mortality index for neonatal transportation score: a new mortality prediction model for retrieved neonates. *Pediatrics* 2004; 114:e424-8.

### Recent developments in our country

In the recent years, the government has developed a network of modern transport vehicles under public-private partnership in several states. These ambulances are well equipped and reach the patient within 20 to 30 minutes by calling a central toll free number 108. They are free of cost and are available even for transporting laboring women to the hospital as well as back-transport after discharge. However, there is an acute shortage of trained para-medics to man these ambulances as well as there is a shortage of hospital beds providing specialized acute care<sup>20</sup>. Although transport facilities have become available, there is an urgent need for coordinated transport network programs, wherein the bed status of all hospitals in a geographic area is inter-linked and the patient can be taken directly to a place where facilities are available.

### Conclusions

Till recently, organized transport programs in our country have been virtually non-existent. The most important reason for that is lack of effective regionalization. Development of reliable and model transport system requires cooperative efforts of the apex institutions, district hospitals, private hospitals, government and the professional associations of pediatricians. With the currently available technology, it should not be difficult to develop a good communication module and establish networking between the referring and referral units. The organization of the transport program would need training of multidisciplinary teams of physicians, nurses and other paramedical staff. When transport is required, the referral unit must be contacted without any delay for seeking prompt consultation and help. The transport team should rush to referring unit. The patient must be stabilized before the start of journey and the process of transport should be steady and smooth and handled with confidence and due expertise.

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