



## NATIONAL NEONATOLOGY FORUM

### Enhancing Fire Safety and Emergency Preparedness in Neonatal Intensive Care Units

Dt: 03.06.2024

Dear Sir/Madam,

National Neonatology Forum (NNF) wishes to bring to your attention to the critical issue of fire safety in hospitals, particularly those with Neonatal Intensive Care Units (NICUs).

The recent fire disaster in healthcare facility in Delhi highlights the critical importance of implementing strict safety measures to safeguard our most vulnerable patients—newborns. It has evoked deepest anguish and sorrow amongst all pediatricians and neonatologists apart from general public. Fire accidents can be categorized as man-made disasters which can be prevented to a large extent by adopting and following fire safety regulations specifically aimed at NICUs which have loads of electrical equipments along with installation of heating, ventilation, vacuum, oxygen and air conditioning (HVAC) systems.

#### **Prevention at Different Levels:**

A. **Accreditation/Certification of Hospital**: NNF-UNICEF accreditation guidelines were prepared in early 1990s to implement quality of care to newborns. It had put lot of emphasis on patient safety issues whether related to clinical care processes standardization or to essential extraneous environmental infrastructural norms. Latest NNF-Unicef accreditation guidelines can be accessed from <http://www.nnfi.org/download-form.php> . It is imperative that all hospitals, especially those with NICUs, adhere to strict fire safety regulations. We recommend the implementation of mandatory fire safety certification as a prerequisite for the licensing and operation of healthcare facilities. NNF accreditation inspections are conducted every two years. The process should be regularly reviewed at more frequent intervals and updated to reflect current best practices.

B. **Maintenance of Safety Criteria**: Regular maintenance and auditing of fire safety equipment and protocols are essential. Hospitals should be required to conduct periodic fire mock drills and inspections to ensure that all safety measures are in place and functioning correctly. This includes the maintenance of fire alarms, explosive materials (oxygen cylinders, etc.) sprinkler systems, and emergency exits. A comprehensive evacuation plan must be in place for fire emergencies, ensuring each neonate has at least 100 square feet of space. Additionally, an analogue addressable (AA) fire alarm system is essential. The NICU should also be equipped with an adequate supply of water and carbon dioxide (CO<sub>2</sub>) fire extinguishers.

C. **Utilization of Resources in the Event of a Fire Disaster**: In the unfortunate event of a fire, hospitals must have well-defined emergency response plans. These plans should include:

- Immediate evacuation procedures for newborns, sick children and staff by implementing immediate evacuation protocols and ensuring all staff undergo fire training annually.
- Periodic practice evacuations and drills should be conducted. Training should incorporate a "fire exit signpost following exercise" to ensure staff are familiar with evacuation routes.

- Designated safe zones within the hospital if possible or nearby.
- Availability of fire extinguishers and training for staff on their use to execute the services fearlessly in this stressful situation.
- Coordination with local fire departments and emergency services for rapid response as per emergency triage and holistic support.
- Post-incident review and improvement strategies to prevent future occurrences.

D. **Management of Fire in NICU:** Staff must adhere to the CARE protocol: **C**onfine the fire, **A**ctivate the alarm, **R**eport the fire, and **E**vacuate the occupants. During evacuation, the unit's oxygen supply should be turned off immediately. Patients should be evacuated in the following priority: those nearest to the fire or in the most danger, infants who can be easily carried while wrapped, and critically ill infants who require respiratory support. These seriously ill infants may need to remain in the ICU until the evacuation is nearly complete or the fire is under control. Each infant bed should have a designated "fire evacuation" package, which includes a self-inflating bag with a reservoir, a size E (small) oxygen cylinder (sufficient for a short journey and at least half full) with a reducing valve and flow meter, or a valve capable of delivering oxygen at a rate of 15 L/min.

E. **Collaboration and Support:** Joint task force needs to be established to develop comprehensive guidelines and conduct training programs for hospital staff. Organizations should allocate necessary funds to support this initiative. Other professional organizations which have disaster management groups or committees should collaborate to enhance fire safety in hospitals.

MOHFW has set up MusQan guidelines ([https://qps.nhsrindia.org/musqan/musqan- tools](https://qps.nhsrindia.org/musqan/musqan-tools)) for pediatric healthcare areas in a district hospital and CHCs. NABH has now circulated fire safety norms ([https://www.nabh.co/Images/PDF/Fire\\_Safety\\_NABH.pdf](https://www.nabh.co/Images/PDF/Fire_Safety_NABH.pdf)) for all hospitals while NNF - UNICEF accreditation guidelines since 2010, strictly prescribe power audit of each NICU (<http://www.nnfi.org/download-form.php>) along with fire safety norms.

All units must undergo a thorough safety inspection of all electrical installations (uncovered) to prevent any water contact while cleaning walls (wet cleaning), ensuring that switchboards and other electrical components are intact and fully operational. Ensuring that electrical wires do not come into contact with water/sewage while passing near drainage systems. Highly flammable substances (such as alcohol-based hand sanitizers) should not be used near electrical equipment like an electrosurgical unit, defibrillator, or a hot fiber optic light source in an oxygen-rich environment. The NICUs or SNCUs must be checked for record of power audits at defined intervals and for maintaining comprehensive records of these audits. Adequate numbers of voltage stabilizer outlets and heavy-duty sockets are required to be provided to handle the equipment load, and a proper earthing system which is a mandatory criterion. These gold standards, which align with international benchmarks should be rigorously followed and enforced across all units to avoid any avoidable disasters and ensure the safety of newborns.



For more details regarding accreditation criteria kindly follow the below link:

[www.nnfi.org](https://nnfi.org/download-form.php) : <https://nnfi.org/download-form.php>

In summary, it is crucial to prioritize the safety of both our newborns and healthcare providers. By putting in place these preventive measures and having strong response plans, we can greatly lower the chance of fire disasters and improve the overall safety of our hospitals, patients, and health staff.

Thank you for your attention to this critical matter. We look forward to your support and collaboration in making our hospitals safer for everyone across India.

Best Regards,

Dr Sushma Nangia

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