MATHEMATICAL MODELLING-UTILITY IN THE FATAL CASE DOCUMENTS

Dear Editor,

This is with reference to the article "Developing an operational decision rule for identifying the fatal case documents at risk of being returned through mathematical modelling" by Mishra, Matwankar and Bhalwar [1].

The authors have omitted to mention how many fatal case documents were subjected to evaluation by this mathematical model and whether the evaluation was prospective or retrospective.

The authors' contention that "The mathematical model was developed using statistical procedures which have already been validated in a large scale study in Armed Forces", has to be accepted with caution because the basis used to develop a model validated under one set of conditions may not be valid under another set of conditions. In fact the authors have quoted a model used to predict hypertension at high altitude which has no relation whatsoever to fatal case documents [2].

The sensitivity of 53% of this model indicates that almost half the fatal case documents at risk of being returned will be missed. Thus the utility of this model is questionable.

In fact, except for the time lag factor, all other variables used in operating this model are non-modifiable and beyond the control of the specialist in charge of the case. As such it is not understood as to how and what a 'a priori' action can be taken on documents identified at risk of being returned. A mathematical model identifying factors that can be modified by the specialist concerned would facilitate 'a priori' corrective action.

The mathematical model developed by the authors was used to calculate the probability of documents being returned in ten possible

situations. From an analysis of the results obtained after calculation, it appears that regardless of age and time factor, the documents of personnel who were serving at the time of demise stands a high chance of being returned. Conversely, the chances of the documents of all other categories of personnel stand less chance of being returned. Does this imply that the documents of personnel serving at the time of their demise are scrutinized more carefully by higher authorities than those of other categories of personnel?

While the authors statement that this model is simple enough to be used by even a junior clerk may be correct, in our opinion it serves no useful purpose because of the inherent pitfalls. Moreover, armed with this model, the individual is likely to blindly apply it and thereby ignore the routine checking of fatal case documents that is in practice now. This will, in fact, result in more documents being returned by higher authorities, thereby defeating the purpose of this model.

REFERENCES

1. Mishra UB, Matwankar SKP, Bhalwar R. Developing an operational decision rule for identifying the fatal case documents at risk of being returned through mathematical modelling. *Medical Journal Armed Forces India* 1998;54:47-8.
2. Bhalwar R, Sandhu HS, Ahuja RC, Singh GK, Misra RP. Clinico-epidemiological algorithm for predicting systemic arterial hypertension at high altitude through mathematical modelling. *Medical Journal Armed Forces India* 1994;50:175-80.

Surg Lt Cdr S NARAYAN*, Surg Lt Cdr V HANDE*

* Graded Specialist (Paediatrics), + Graded Specialist (Medicine), INHS Dhanavantari, C/o Navy Office, Port Blair-744 102.

FLEXOMETALLIC ENDOTRACHEAL TUBE AND NASAL INTUBATION

Dear Editor,

Flexometallic or armoured endotracheal tubes are very popular amongst anaesthesiologist for surgeries around head and neck. They offer several advantages like resistance to kinking and compression, exertion of minimal pressure on interarytenoid cartilages posteriorly and on trachea anteriorly. Commonly, oral route of insertion is preferred to the nasal route for these tubes. According to the traditionally held view, nasal passage of these tubes is considered extremely difficult or even impossible; hence anaesthesiologists the world over seldom use them via the nasal route.

However, as a routine we have been intubating the trachea with armoured tubes via the nasal route in various intraoral, mandibular and maxillofacial surgeries. In our experience, now in excess of 300 intubations, we experienced no difficulty in negotiating these tubes nasally. On the contrary, we found this technique simple, non-traumatic to the septum and the tubinates. In addition, these tubes invariably find their way into the oropharynx without getting stuck in the posterior pharyngeal wall, unlike the polyvinyl chloride (PVC) tubes, which not only cause disruption of pharyngeal mucosa and

bleeding, but also make reintubation messy and difficult. The tip of the armoured tube is softer compared to its PVC counterpart and has a greater bevel angle. If the correct size of tube is used with gentle insertion pressure, the result is indeed very gratifying with no nasal trauma at all.

As is intuitively obvious, these tubes cannot be used for blind nasal intubation. In addition, when the Magill's forceps is used to guide the tube into the larynx, caution must be exercised to avoid damaging the cuff.

Flexometallic tubes can easily be angulated away from the surgical field, hence they also serve well as replacement for preformed tubes. Therefore, in our opinion flexometallic tubes should be used more frequently by the anaesthesiologist wherever nasal intubation is indicated.

Lt Col PS GARCHA*, Maj DK SREEVASTAVA*,
Maj SK SINGH#

* Associate Professor, +Clinical Tutor, Department of Anaesthesiology and Critical Care, Armed Forces Medical College, Pune 411 040, # Anaesthesiologist, Military Hospital, Jhansi Cantt-284001.