

Nursing Activities Score: Instructions for Use

DESCRIPTION OF ITEMS

Item 1. Monitoring and titration activities ranging from the hourly baseline of monitoring in the intensive care unit (ICU) and the performance of routine daily tasks, up to extra nursing presence and/or professional activity because of a given patient condition. *Ia*, generally accepted as the baseline of monitoring in the ICU. *Ib*, the patient cannot be left alone, and the nurse needs to stay continuously next to the bed for observation and eventual action; in some occasions, although strict continuous presence may not be required, the patient's condition requires a much higher dedication of the nursing activity for a longer period of time (e.g., preparation of fluids and/or medication during a clinical condition of shock). *Ic*, continuous presence and increased activity may be necessary, such as assuring the patient's comfort during, and the patient's commitment to, a non-invasive mechanical ventilation mode or "keeping" the patient in bed during a period of restlessness or mental disorientation.

Item 2. Extra collection of samples for laboratory examinations of a given patient, other than the routine collection of samples ordered for (all) the patients in the ICU (e.g., daily biochemistry and BGA tests).

Item 4. Hygiene procedures. The text in item *4a* "Performing hygiene procedures through. . .infection, staff hygiene) belongs to item 4. The examples describe typical procedures that may consume "more" and "much more" time than the usual standard time. Items *4a*, *4b*, and *4c* should read: *4a*. The baseline hygiene procedures applicable in the unit. *4b*. The performance of hygiene procedures took >2 hrs in any shift. *4c*. The performance of hygiene procedures took >4 hrs in any shift

Item 5. The gastric tube is excluded because the activities involved are scored in other items.

Item 9. The patient requires invasive or noninvasive ventilatory support, disregard the mechanical modes used.

Items 10–11. Are self descriptive. "Thorax physiotherapy" includes usually

"tapotement," "lung insufflations with bag," and "endotracheal suctioning." The activities in this item are currently performed by the nursing staff, with or without the assistance of professionals of other disciplines. In case they are exclusively performed by professionals of other disciplines, item 11 is not scored.

Items 12. Vasoactive drug may be a "vasoconstrictor" (e.g., adrenalin) or a "vasodilator" (e.g., nitrates). These drugs can be administered separately or in combination. These drugs, administered for specific vasoactive purposes, require close monitoring and titration. Other drugs, however, though not administered primarily with vasoactive purposes (e.g., lidocaine, salbutamol) may have important vasoactive side effects. The eventual vasoactive side effects of these drugs may require the additional monitoring of the patient and/or the titration of these effects with specific vasoactive drugs.

Item 19. Administration of specific medication for correcting acidosis (>2 mEq Na HCO₃/kg/day) or alkalosis, excluding correction by means of adjusting the parameters of mechanical ventilation or increasing the circulating blood volume.

Item 20. Totalling more than 40 kcal/kg/day.

Item 22. The inclusion of specific intervention(s) in the ICU should consider the additional consumption of nursing work for assisting the patient and/or the physician performing the intervention. A list of indicated interventions helps to illustrate the general principle of inclusion of interventions in the item. The indicated exclusions (e.g., radiographs, echography, ECG, etc.) refer to interventions not necessarily representing an extra demand of nursing work. The examples are not exhaustive. To facilitate data collection, each ICU needs to identify a list of all specific local interventions to be included in this item.

Item 23. The interventions to be included in this item make an extra demand on manpower efforts in the ICU. Situations such as bringing the patient to a surgical intervention or diagnostic procedure should be included in the item.

Bringing the patient to the ward, after discharge from the ICU, for example, should not be included. To facilitate data collection, each ICU needs to identify a list of all specific local interventions to be included in this item. *Note:* The text of items 3, 6–8, 13–18, and 21 is self-descriptive.

REMARKS

1. NAS should be filled out once per 24 hrs, per patient. It is important that this is done at the same moment in the day, for example, at 8:00 am. If other than 24 hrs, the period of time covered by the score should be registered in the form.

2. The daily score of items 1, 4, 6, 7, and 8 depends on their performance per shift. Because the retrospective score of these items may be difficult, it is recommended to write down the performance of these items during each shift.

3. The items will be scored disregarding who performs them (e.g., the nurse of the patient continues the regular activity of care, and a colleague, of the nursing staff, performs the tasks, such as 7a, 8b, etc.; read also "definition of nursing staff").

4. The NAS items concern activities or clusters of activities. Their description allows inclusion of activities not mentioned in the examples provided: a) because the activity is similar or equivalent to the examples; b) because the activity can be included in another item (e.g., the active correction of hyperglycemia can be difficult and time consuming; although the activity is not consigned under "metabolic support," it may elect to be scored under *Ib* or *Ic*).

DEFINITION OF NURSING STAFF

NAS measures, at patient level, the workload of the nursing staff in the ICU. NAS will also be used to compare nursing workload across ICUs and across countries. It is, therefore, necessary that the instrument is equally understood by all users.

Although the tasks involved in patient care in the ICU are rather similar across

units and countries, the type of professionals involved in those tasks may vary. For example: 1) about all the nursing tasks are performed by registered intensive care nurses; 2) part of the tasks of patient care are performed by nursing aids; 3) some specific tasks (e.g., respiratory care, social care, administration) are performed by specific professionals. Although, e.g., nurses and nursing aids do always belong to the nursing staff of the unit (contributing to the total number of nursing FTEs), other professionals performing specific tasks may belong to other departments or professional organizations in the hospital. Two situations need, therefore, to be distinguished: a) all the tasks are attributed to members of the staff in the payroll of the ICU nursing (with or without professional and task differentiation); in this case, all the NAS items are applicable; b) some activities became specialized and are attributed to specific professionals (e.g., respiratory therapists, social workers, research monitors) not belonging to the nursing

staff; in this case some NAS items (e.g., item 8 or item 11) cannot be considered nursing activities and are, therefore, not applicable.

The clear definition of nursing staff and of the organization of the tasks of care in the ICU is, therefore, necessary before scoring NAS.

USE PER WORKING SHIFT

The weights of NAS were computed for periods of 24 hrs. With particular focus on five of the items, the weights were attributed (and defined) according to the duration of their execution and also the frequency of their performance during 24 hrs. The weights attributed to the NAS items are, therefore, not valid for any other period of time.

Moreover, each weight represents the average time spent with its performance in the period of 24 hrs and cannot be exactly read as time in hours or minutes during a particular shift or on an individual basis.

From a theoretical point of view, the construction of the instrument is based on the division of the 24 hrs in periods (shifts) of 8 hrs each. Concerning work delivered, however, “days” are, in principle, equal (in relation to illness and care); “shifts” are not (in relation to work organization). Comparing nursing activities between shifts (equal periods of time with different work profiles) is possible, IF the following conditions are fulfilled: a) large number of shifts are involved; b) data are collected and analyzed per shift, independently from the other shifts; c) the definitions of the items are not changed. The “overall” 24-hr nursing workload can only be determined by summation of original NAS weights as described in the original publication. Three individual shift scores cannot be summed up to the overall 24-hr score.

It is strictly recommended not to adjust NAS weights, even not proportionally, because this will introduce uncontrolled bias in the summation scores.