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Is there a need for a computerised neonatal system?

The purposes of computerised neonatal systems are the following

– Epidemiological surveillance and studies, cross-sectional surveys.
– A neonatal audit.
– The outcome of surviving infants.
– The workload.
– The cost-effectivness.

Detailed information is nowadays more often required for the purpose of negotiating contracts between purchasers and providers.
A number of computerised systems has been implemented in swiss Neonatal Units and used with more or less success and enthusiasm.

There are three prerequesites before setting up a database

– The appropriate formulation of the dataset including the choice of categories, such as: demographic data, mother, admission details, progress, diagnoses, procedures, discharge details and recommendations.
– The establishment of a precise and relevant dataset, based on planned outputs as shown in table 1.

Type of output	Purpose of output
Comprehensive discharge Summary	Communicate with Paediatricians Permanent record
Regular cumulative reports on:	Comprehensive annual report
Perinatal mortality	Audit
Admissions and survival	Resource management
Mortality review	Quality assurance
Outcome	Research
Intracranial scan results	
Ventilation review	
Procedure review	
Infection and antibiotics	
Workload	

Table 1. *Type and purpose of dataset output.*

– A diagnostic coding: even when similar information is collected, there may be variations in the coding classifications used. Such differences mean that it will be difficult to compare data collected on different databases. It would be helpful, if an interested group formulated an "agreed core dataset" which should be not large and should be carefully defined. Each Neonatal Unit could then add its own information relevant to local requirement or research interest.
There is a need for diagnostic coding. A dictionary of codes specific for neonatal diagnoses is under development by the British Peadiatric Association and it will be soon available. It might offer a good basis to reach a consensus in Switzerland between the different Neonatal Units.

Two databases can be proposed

I) Dataset designed for epidemiological purposes

These systems will include two categories (12 items).

Administrative data: name, surname, sex, date of birth, place of birth, father's occupation, father's origin and address.
Neonatal data: birth weight, gestation, death, cause of death.

II) Dataset designed for neonatal audit and outcome

This system will include 10 categories (25 items).

Administrative data: name, surname, sex, date of birth, father's occupation, father's origin and address.
Pregnancy: multiple pregnancy, outborn/inborn.
Delivery: Apgar score, asphyxia.
Neonatal data: gestation, birth weight.
Diagnoses
Respiratory system
Respiratory distress syndrom: Aspiration, hyaline membrane diseases, infectious pneumopathy, pneumothorax, others.
Cardio-vascular system: Patent ductus arteriosus, pulmonary hypertension.
Gastrointestinal tract: Necrotising Enterocolitis.
Neurological system: Meningitis, post-anoxic Encephalopathy.
Metabolic-endocrine disorders
Infections – Foetopathies
Congenital malformations
Complications
Pulmonary dysplasia, retinopathy, pneumothorax.
Treatments
Ventilation – Surfactant.
Cerebral Ultrasound
Normal, haemorrhage, leucomalacia, others.
Follow up: yes, no.
Death: yes, no.

Although the sound proposal is more complex, we would prefer it as it will provide necessary information which is anyway required in our current practice with regard to survival rate, outcome, cost-effectivness and limits of care. The main categories and items have been carefully discussed and chosen in the view of type and purpose of outputs (comprehensive annual reports, audit, resource management and workload). This system is under development in Lausanne and will be soon in application. Such dataset would represent the most useful tool, not only for neonatologists, paediatricians and epidemiologists, but also for health planificators and politicians.