



Identification of Minimum Data Set of Neonatal Prematurity Information Management System for Iran

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Dear Editor-in-Chief

Preterm birth is a childbirth occurring at less than 37 completed weeks and about 120 million babies are born worldwide each year (1). According to statistics, an average of 32 million low birth weight babies are born each year in low-income countries, which two-thirds of them are in Asia (2). The WHO also reported a 10 percent prevalence of low birth weight in Iran (1).

The existence of suitable, up to dated, and integrated information is a practical tool for management, prevention, and eliminate the effects that arise from this condition (3). In Iran, a number of clinical Minimum Data Set (MDS) have been introduced so far; anesthesia method for cesarean delivery, Prematurity, and child abuse surveillance are the newest datasets that published(4–6). The aim of this study was to identification of a MDS for managing neonatal prematurity information systems.

This research was a descriptive cross-sectional study performed in 2020 with a multidisciplinary

method of combination of literature review and expert consensus to retrieve relevant data resources. First, data were gathered basically from 56 countries maternal and child registries and surveillance systems, in addition to reviewing the guidelines, documents, strategies, reports, and credible websites. A focus group discussion was sorted to classify the extracted data elements to develop a questionnaire. This focus group was held in the division of neonatology at Semnan University of medical sciences with eight experts including neonatologists, gynecologist, epidemiologist, informatics and health information management of Semsums and Tums. Finally, a questionnaire was designed by using the comments of expert team, and its reliability was calculated through Cronbach's 0.938 alpha for maternal and 0.915 for newborns part.

As a result of the Delphi study, data elements at two data categories were determined with 12 data classes as shown in Table 1.



Table 1: Minimum data set approved by the experts for prematurity information system registry

<i>Data Categories</i>	<i>Data class</i>	<i>Data elements</i>
Maternal	Demo-graphic	Record number, national code, name, sure name, father name, birth date, age, nationality, birthplace, marital status, education, job, income, socio-economic status, insurance, supplementary insurance, Admit date/time, address, postal code, phone/mobile number
	Prenatal	height, pregnancy start/delivery weight, BG, pregnancy hx, past: pregnancy status/interval, gravida, abortion, para number, delivery method, infertility, preeclampsia, prematurity, pregnancy/delivery complication, family hx, tea/ coffee/alcohol/cigarette/opium/drug, operation, underline disease, menarche age, marital duration, contraception
	Pregnancy	screening, prenatal care, test result, prenatal care, weight, BMI, PAHx, LMP, EDC, GA, pregnancy status, complication, tea and coffee, alcohol, cigarette, opium, X-ray, Lead, sonography result, AFI/color, drugs, , nutrition, physical/sexual activity, stress, disease
	Delivery and Child Birth	weight gain, GA, PROM, delivery method/outcome, fetal presentation, newborn status/count, antibiotic, drugs, pregnancy/current delivery complication, sonography, sonography AFI/color/test result, labor team, mother death
New-born	Demo-graphic	Record no, national code, name, sure name, father name, gender, birth place, admit date, admit time
	Admission	Hospital name, refer from/to, status, doctor/nurse, date/time
	Birth	GA, BW, BH, HC, VS, apgarmin1/5, newborn count, birth intervention, tracheal tube, injuries, umbilical ABG, resuscitation, CPAP, excessiveo2, anomaly, respiratory/nervous/immune/urinary /digestion/musculoskeletal/ blood/ocular/auditory/cardiovascular/genitalia/metabolic disorder, skin, feeding, consciousness, birth by midwife, birth certifier/certify no, pediatrician name, primary/Final diagnosis
	NICU admission	weight, height, HC, temperature, VS, discharge nurse, admission status/recommendation, NAS, primary/midterm diagnosis, Parents learning
	Interventions	Respiratory support, medical/invasive/noninvasive intervention, vaccination, drugs, lab data, sonography/radiology/echo/ ECG/EEG results, , clinical consultation
	Discharge	weight, height, CC, VS, lab/x-ray result, type, transformation, date/time, physician/ nurse, status, recommendation, prescribed drugs, nutrition, parent education, death information
	Alerts and reminders Reporting	O2/saturation, respiratory, V/S, parents to hospital/ ward, Vaccination, educational General , mother, newborn, compound reports

This MDS is not only applicable in Iran, but it has basic potential to use internationally. As mentioned in above, information management systems will reduce the cost of prematurity. This system can predict the birth of a premature baby by comparing the mother's previous history. This can be

the ultimate management of premature births. Researcher estimated that define of a strategic plan for development infrastructures, standards, and communication tools for integrating subsystems for comprehensive systems such electronic health record (EHRs) is essential for future studies.

Conflicts of interest

The authors declare that there is no conflict of interest.

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