PERINATAL INFORMATION SYSTEM

for Windows & Internet

Abridged user's Manual

LATIN AMERICAN CENTER FOR PERINATOLOGY AND HUMAN DEVELOPMENT CLAP (PAHO/WHO)

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Introduction

CLAP is the PAHO/WHO specialized Centre for Perinatology, and as such has produced the Perinatal Information System (SIP) to support the countries in the Region of the Americas in their effort to achieve and guarantee the highest possible level of quality of perinatal services.

The Perinatal Information System (SIP) is a comprehensive set of technologies used to tackle the complex problems with clinical records and used to capture and analyse the effects of the decision making process that follows. Its functions include:

- to provide a database for planning
- to offer a data standard
- to be a communication tool for the different health providers over distance and time
- to provide reliable local statistics
- to train perinatal health staff
- to record data of legal importance
- to act as an audit tool
- to characterize the population
- to evaluate health care quality
- to rank problems
- to perform epidemiologic research

Manual Content

This abridged SIP user's manual describes the Perinatal Clinical Record (PCR) and how to complete it during clinical practice. It also describes the Perinatal Card, kept by the patient and the Neonatal Hospitalization Form (FHN).

The SIP software is introduced, starting with the installation, either from a compact disk (CD) or the interactive C.L.A.P. internet site. The use and interpretation of specific programs follows. The «Description of the Population», details gestational and service risk factors in order to merge them into a global measure of problem load specific to the population under study.

A report generator allows the user to select a set of indicators whose calculation formulae are built into the SIP software. Predefined sets of indicators are also available such as the «Basic Perinatal Indicators», «Immunization of the population», «Maternal Morbidity» and «Neonatal Hospitalization».

All indicators can be shown with the missing data rate that is associated with their calculation. This provides a measure of the quality of the data collected during care.

Special tables allow the monitoring of interventions related to perinatal health indicators. Furthermore, an interactive table of specific mortalities according to time of death and birth weight is a powerful tool for comparing the care given with a standard. This standard can be either external or internal, and is selected by the user.

SIP may also be used on internet: the reader will find ways of obtaining the same statistics as the local ones, but for larger populations, merged by country and year of birth. This facilitates easy benchmarking of indicators against reference values. Methods for further analyzing SIP data with other statistical packages such as Epi Info 2000 are described.

The SIP manual contains case studies for a pregnancy, a birth and a new born hospitalization. These examples can be used during training sessions. There is also a list of SIP variables and a list of SIP indicators available for guiding the user.

Perinatal Clinical Record

Identification of the pregnant woman

NAME The mother's paternal and maternal surnames and her complete first names. These should be copied from her identity card on presentation.

ADDRESS/CITY This refers to the usual residence of the pregnant woman. Register the street, the number and the locality (city, village, area, etc). If the address can not be identified with this information, use any reference which will locate her: for example Km 5, Local Drive 3, number 1345.

PHONE The home telephone. If there is none, take note of the nearest one where the health staff can leave a message for the pregnant woman and her family.

DATE OF BIRTH Write the date of birth of the pregnant woman (day, month and year).

AGE That of the pregnant woman in whole years. If she is under 15 or over 35 mark the yellow box.

RACE That of the pregnant woman. Mark the box of the ethnicity she declares. The purpose of this item includes the necessity of Sickle cell Disease screening when appropriate.

LITERACY If she can read and write, mark «yes», otherwise mark «no».

EDUCATION Formal education courses. Mark only the maximum level reached, whether or not it was completed.

YEARS APPROVED. The last year approved by the pregnant woman at the previously specified formal education level.

CIVIL STATUS The one which holds at the first visit. By «common law wife» we understand a stable union with a partner though not legally married. Under «other» are included separated, divorced and widowed.

PLACE OF ANTENATAL VISITS. Write the code of the hospital where the prenatal checks took place.

PLACE OF DELIVERY. The code of the hospital where the delivery took place. Eight digits are admitted.

IDENTITY NUMBER The ID number that identifies the patient at the hospital. The first recommendation is to use a National numbering system, also used in the Perinatal Card. Ten digits are admitted.

Family, Personal and Obstetric History

The family, personal and obstetric history obtained by interviewing the patient in the first general visit. If patient is admitted in labour, for treatment or study, and has not been seen in the hospital, these data can be obtained from the PERINATAL CARD or by

questioning on admittance. Mark the corresponding box and complete the Clinic Record sheet each time the answer corresponds to a yellow box.

FAMILY/PERSONAL The FAMILY items refer to the patient's nearest relatives (parents, siblings, grandparents, offspring's); the PERSONAL to the patient's own. Mark «yes» or «no» in the appropriate boxes, please specify when marking «other».

OBSTETRICAL Mark the corresponding boxes as you question the patient in the sequence shown. The number of previous pregnancies belongs to the HISTORY, and therefore please do not include the present pregnancy; write 00 if this is the first one. Mark the yellow boxes under «pregnancies» in case of last birth weight under 2500 g or over 4500 g or if the patient had preeclampsia/eclampsia syndrome.

In case of «abortions», if the patient had three or more spontaneous abortions, mark the corresponding yellow box.

Each multiple birth shall be registered as one pregnancy with two or more deliveries and with two or more children. The sum of «abortions» and «deliveries» must be the same as the number of «pregnancies», except in the case of a history of twins.

In «end of previous pregnancy» take a note the date of the previous pregnancy, whether it is a delivery or an abortion. Complete with 00 if dealing with a first pregnancy. Complete the yellow box in case the time between the end of previous pregnancy and the present is less than 6 months or more than 5 years.

In «Planned pregnancy» complete with «yes» the patient declares she planned her pregnancy, and complete with «no» otherwise.

In «Contraceptive failure», a failure is defined as conception while using one of the contraceptive methods. Write the method used: «barrier» refers to condom and diaphragm, «IUD» to a intrauterine device, «hormonal» oral contraceptive refers to the pill and to postcoital contraceptives and finally «natural» to the rhythm method and to other natural methods.

Present Pregnancy

All the data collected during the first prenatal control are registered, and are completed in the following ones.

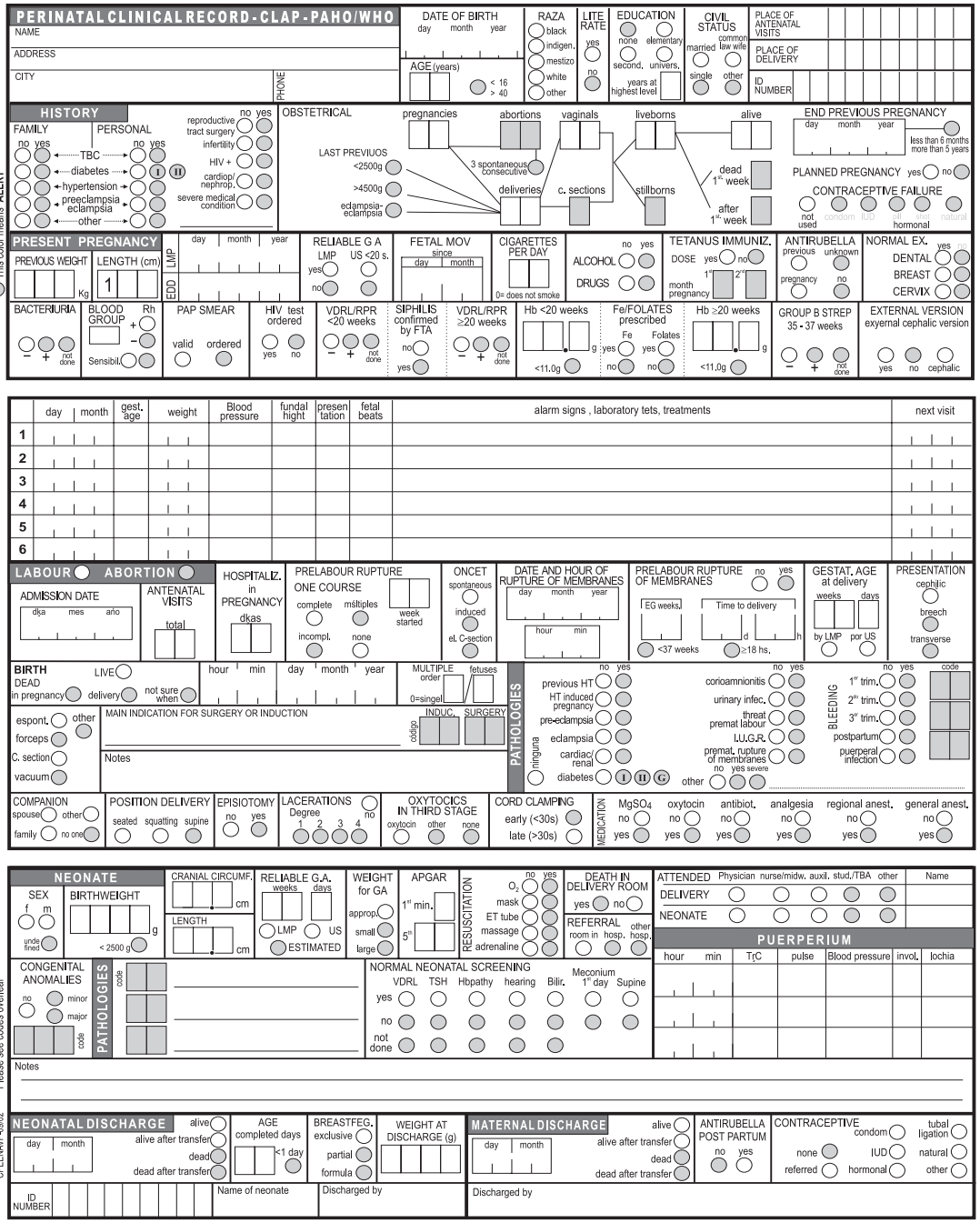
PRE-PREG. WEIGHT. The weight in kilograms of the woman, BEFORE the present pregnancy.

HEIGHT. Her height, standing and barefoot, in centimetres.

LMP (Last Menstrual Period) The first day, month and year of her last menstruation.

EDD (Estimated Date of Delivery) The day, month and year in which the 40 weeks of pregnancy will be completed. To calculate it uses the CLAP gestogram or any other obstetric calendar. As in the previous item it is recommended to always complete this entry, even though there may be doubts about the LMP. Note: the different methods used to calculate the EDD do not exactly

Perinatal Clinical Record (Front)



	day	month	gest. age	weight	Blood pressure	fundal hight	presen tation	fetal beats	alarm signs , laboratory tets, treatments	next visit
1										
2										
3										
4										
5										
6										

Patterns of uterine heigth and increase in maternal weight according to gestation age.
Once the gestational age in known, graph both values on the charts overleaf.

Perinatal Clinical Record (back)

CLAP (PAHO/WHO) - Perinatal Information System

CODING LISTS

Perinatal Clinical Record

The right column refers to the International Classification of Diseases, Rev. 10 (ICD - 10) PAHO/WHO 1992

PREGNANCY, DELIVERY AND PUERPERIUM PATHOLOGIES

50	MULTIPLE PREGNANCY	O30
51	PREVIOUS HYPERTENSION	O10
01	Pre-existing hypertension complicating PDP	O10.0
02	Pre-existing secondary hypertension complicating PDP	O10.4
52	PREECLAMPSIA	O13 and O14
04	Transient hypertension of pregnancy	O16
05	Mild eclampsia	O13
06	Severe and moderate preeclampsia	O14
53	Pre-existing hypertensive disorder with superimposed proteinuria	O11
54	ECLAMPSIA	O15
55	CARDIAC DISEASE	Z86.7
56	DIABETES	O24
57	Pre-existing diabetes mellitus insulin-dependent	O24.0
58	Pre-existing diabetes mellitus non insulin-dependent	O24.1
59	Diabetes mellitus arising in pregnancy	O24.4
07	Abnormal glucose tolerance test	R73.0
60	URINARY INFECTIONS	O23.0-23.4
08	Asymptomatic bacteriuria of pregnanccy	R82.7
61	OTHER INFECTIONS	O98, B50-B54,A60
62	Infections of the genital tract in pregnancy	O23.5
09	Syphillis complicating PDP	O98.1
10	Gonorrhea complicating PDP	O98.2
11	Malaria	B50-B54
12	Anogenital herpesvirus (herpesvirus simplex) infection	A60
63	Hepatitis	O98.4
64	TBC complicating PDP	O98.0
65	PARASITOSIS COMPLICATING PDP	O98.8
77	Chagas	O98.6
78	Toxoplasmosis	O98.6
66	INTRAUTERINE GROWTH RETARDATION	P05
67	PRETERM DELIVERY (THREATENED PREMATURE LABOUR)	O60
13	Cervical incompetence	O34.4
68	CEPHALOPELVIC DISPROPORTION	O64, O65, O69
14	Obstructed labour due to malposition and mal presentation of fetus	O64
15	Obstructed labour due to maternal pelvic-abnormality	O65
16	Other obstructed labour due to the fetus	O66
69	FIRST TRIMESTER BLEEDING	O20
17	Hydatiform mole	O01
18	Missed and spontaneous abortion	P021.1, O03
19	Ectopic pregnancy	O00
20	Induced or medical abortion	O06,O04
21	Threatened abortion	O20.0
70	SECOND AND THIRD TRIMESTER BLEEDING	
22	Placenta previa with hemorrhage	O44.1
23	Premature separation of the placenta	O45
24	Antepartum hemorrhage with coagulation defect	O46
25	Rupture of the uterus before of during labour	O71.0, O71.1
26	Obstetric laceration of the cervix	O71.3
71	ANAEMIA	O99.0
27	Iron deficiency anaemia	D50
72	PREMATURE RUPTURE OF MEMBRANES	O42
28	Infection of amniotic sac and membranes	O41.1
73	PUERPERAL INFECTION	O85, O86
29	Puerperal sepsis	Q85
30	Infection of breast associated with childbirth	O91
74	Postpartum hemorrhage	O72
31	Retained placenta	O72.0, O72.2
32	Atonic uterus	O72.1
33	1st. and 2nd. Degree perineal lacerations	O70.0, O70.1
34	3rd. and 4th degree perineal lacerations	O70.2, O70.3
75	OTHER PATHOLOGIES	(Min O00-O99)
35	Placenta previa specified as without hemorrhage	O44.0
36	Excessive vomiting in pregnancy	O21
37	Unspecified renal disease in pregnancy, without mentioning of hypertension	026.8, O99.8 (conditions in N00-N39)
38	Drug dependence	F10-F19
39	Fetal distress	O68
40	Polyhydramnios	O40
41	Oligoamnios (without mention of rupture of membranes)	O41.0
42	Labour and delivery complicated by umbilical cord complications	O69
43	Complication of anesthesia during delivery or puerperium	O74
44	Obstetric embolism	O88
45	Disruption of caesarean section wound	O90.0
46	Disruption of perineal obstetric wound	O90.1
47	AIDS	B20-B24
76	Positive HIV	R75
48	Malignant neoplasm of cervix	C53
49	Malignant neoplasm of breast	C50

MAIN INDICATION FOR INDUCTION AND/OR SURGICAL DELIVERY

01	Previous cesarean section
02	Acute fetal distress
03	Feto-pelvic disproportion
04	Abnormality of forces of labour
05	Prolonged labour
06	Failed induction
07	Arrested descent of presentation
08	Multiple pregnancy
09	I.U.G.R.
10	Preterm delivery
11	Posterm delivery
12	Breech presentation
13	Posterior position
14	Transverse position
15	Premature rupture of membranes
16	Ovular infection (suspected or confirmed)
17	Placenta praevia
18	Abruptio placentae
19	Uterine rupture
20	Preeclampsia and eclampsia
21	Anogenital herpes virus
22	Genital condilomatosis
23	Other maternal diseases
24	Fetal death
25	Maternal exhaustion
26	Other

MEDICATION DURING LABOUR

01	Lidocaine or similar
02	Sympathomimetic amines
03	Anesthetic gases (pentrane-fluorane-nitrous oxide)
04	Barbiturates
05	Muscle relaxants
06	Diazepoxides
07	Meperidine
08	Spasmolytics
09	Oxytocin
10	Prostaglandins
11	Betalactámics (Penicillin-cephalosporin)
12	Aminoglycosides (gentamicin-amykacin)
13	Erythromycin
14	Metronidazol
15	Betamimetics
16	Prostaglandin inhibitors
17	Calcium antagonists
18	Magnesium sulfate
19	Hydralazine
20	Beta blockers
21	Others antihypertensives
22	Blood and blood products
23	Heparin
24	Corticoids
25	Cardiotonics
26	Diuretics
27	Aminophyline
28	Insulin
29	Diphenylhydantoine
30	Others

PATHOLOGIES OF THE NEWBORN

50	HYALINE MEMBRANES DISEASE	P22.0
51	MECONIUM ASPIRATION SYNDROME	P24
52	PRETERM APNEA	P28.3-P28.4
53	OTHER RDS	Q25.0, P29.3, P23, P25, P22, P27
01	Patent ductus arteriosus	Q25.0
02	Primary pulmonary hypertension—	P29.3
03	Congenital pneumonia	P23
04	Pneumothorax and pie	P25
05	Transient tachipnea	P22.1
06	Chronic lung disease CLD	P27
	BLEEDING INCLUDING INTRACRANIAL	
07	Hemorrhagic disease of neonate	P53
55	Pulmonary hemorrhage	P26
56	Umbilical bleeding (excludes mild...	P51
	HYPERBILIRRUBINEMIA	
08	Hemolitic disease due to Rh conf...	P55.0
09	ABO hemolitic disease	P55.1
10	Neonatal jaundice in preterm	P59.0
58	HEMATOLOGIC	P60-P61
11	Polycitemia	P61.1
12	Congenital anemia	P61.3
13	Other blood disorders	(P35-P39,A09,G00,A54.3)
	INFECTIONS	
14	Diarrhea	G00
15	Meningitis	P38
16	Onfalitis	P39.1, A54.3
17	Conjuntivitis	P39.4,L00
59	Skin infections	P36
18	Sepsis	(rest of P35-P39)
20	NEC	P77
49	Neonatal tetanus	A33
60	Congenital sphylis	A50
61	Congenital viral diseases	P35
68	Congenital rubbela syndrome	P35.5
69	Cytomegalovirus	P35.1
70	Toxoplasmosis	P37.1
39	HIV positivo	R75
19	Other perinatal infections	(rest of P60-P61)
	NEUROLOGICA (EXCLUYE MALFORMACIONES)	
33	Acquired hydrocephaly	G91
34	Periventricular leucomalacia	P91.1,P91.2
35	Obstetric trauma with CNS injury or nerve injury	P10,P11,P14
36	Intracranial bleeding (non traumatic)	P52
37	Seizures	P90
71	Encephalopaty (Ischemic-Hypoxic)	P21
38	Other dideases of CNS	P91
	METABOLIC/NUTRITIONAL	
43	Infant of diabetic mother syndrome	P70.0, P70.1
45	Hypoglicemia	P70.3, P70.4, E16.2
46	Other metabolic/nutritional disorders	P75-P78
66	OTHER NEONATAL PROBLEMS	
40	Retinopathy of prematurity	H35
41	Inguinal hernia	K40
65	Extreme hypothermia	P80.0 (excludes mild hypothermia P80.8)

CONGENITAL ANOMALIES

120	Anencephaly	Q00.0
121	Spina bifida/Myelomeningocele	Q05,Q07.0
122	Hydrancephaly	Q04,3
123	Hidrocephaly	Q03
124	Microcephaly	Q02
125	Holoprosencephaly	Q04.2
127	Other central nervous system anomalies	Q04,Q06
128	Truncus arteriosus	Q20.0
129	D-Transposition of great arteries	Q20.3
130	Tetralogy of Fallot	Q21.3
131	Single ventricle	Q20.4
132	Double autlet right ventricle	Q20.1
133	Complete atrio-vent.	Q21,2
134	Pulmonary atresia	Q22.0
135	Tricuspid atresia	Q22.4
136	Hypoplastic left hear syndrome	Q23.4
137	Coartaction of aorta	Q25.1
138	Total anomalies pulmonary venous drainage	Q26.2
139	Other circulatroy/respiratory anomalies	Q24,28,34
140	Cleft palate	Q35
141	Tracheo-esophageal fistulae	Q39.1
142	Esophageal atresia	Q39,0,Q39,1
143	Colonic or rectal atresia	Q42.0,Q42.1,Q42.8,42.9
144	Imperforated anus	Q42,3
145	Onfalocele	Q79.2
146	Gastroschisis	Q79.3
147	Duodenal atresia	Q41.0
148	Yeyunal atresia	Q41.1
149	Ileal atresia	Q41.2
150	Other gastrointestinal anomalies	Q40,43,45
151	Malformed genitalia	Q50-56
152	Bilateral renal agenesis	Q60,1
153	Poli or multichistics or displasic kidneys	Q61.1-61.9
154	Congenital hydronephrosis	Q62.0
155	Bladder extrophy	Q54
156	Other nephrourinary anomalies	Q63,64
157	Trisomy 13	Q91,4, Q91,5,Q91,6
158	Trisomy 18	Q91.0, Q91,1,Q91,2
159	Down syndrome	Q90
160	Other chromosomic anomalies	Q92,97-99
126	Clef lip	Q36
161	Polydactyly	Q69
162	Syndactyly	Q70
163	Bone displasia	Q77-78
164	Pes equinovarus/talovalgus (Pied Bot)	Q66.8
165	Diaphragmatic hernia	Q79,0
166	Hidrops fetalis	P56,P83,2
167	Severe oligoamnios	P01,2
168	Other musculoskeletal/integumental anomalies	Q68,74,75,79
169	Skin anomalies	Q82,84

HCPENR/P-10/03

RELIABLE GA due to LMP / US<20 w. Mark if the GA is reliable due to the LMP or due to ultrasound before 20 weeks, choosing «yes» or «no» in each item.

CIGARETTES PER DAY. This is for smoking during the present pregnancy. If the answer is «yes», write the average number of cigarettes smoked a day. If the patient does not smoke write «00». Mark «passive smoker» if the patient lives in a smoking place.

ALCOHOL. Write «yes» when the diary alcohol ingest is more than the equivalent of two glasses of wine per day.

DRUGS. Write «yes» when the patient uses some substance, not indicated by the health staff that may cause addiction.

TETANUS IMMUNIZATION. Tetanus immunization follows local standards. If there are no specific rules to follow, then proceed in the following way: if the pregnant woman was immunized in the last 10 years, mark the «yes» box and leave the other boxes empty. If the patient was not immunized previously, and she is inoculated during the present pregnancy, mark the «1st» box with the month of pregnancy in which she was given the first dose, and the «2nd» box the month of the second dose.

ANTIRUBELLA. According to local standards. Mark the box «previous» if the pregnant woman was immunized previously; «pregnancy» if she was immunized during the present pregnancy; «unknown» if she does not remember if she was immunized or not; «no» if she never was immunized.

NORMAL EXAM (dental/breast/cervix). Mark the «yes» box when the result of the examination is normal and «no» when any abnormality is detected.

BACTERIURIA. Mark the result of the exam, either negative «(-)» or positive «(+)». Please record it at the time the patient has the first lab result. Write «not done» if at delivery the patient has not been tested.

BLOOD GROUP. The correct blood group (A, B, AB, O). For «Rh» and for «sensibilization» mark the corresponding boxes.

PAP SMEAR. Mark «negative» (-) if the result of the exam is normal, mark «(+)» if any abnormality is detected, and «not done» when the patient was not ordered and/or did not undergo the exam.

COLPOSCOPY. Mark «(-)» if the result of the exam is normal, mark «(+)» if any abnormality is detected, and «not done» when the patient did not do the exam.

HIV TEST ORDERED. Mark «yes» if it was ordered, «no» if it was not. Each country has to adapt the form to this variable. It is suggested that if the HIV test result is (+) mark the corresponding box in PATHOLOGIES «other - severe» and write the code according to the list at the back of the PCR (code 76 for HIV positive).

VDRL/RPR <20 weeks. Write the Venereal Disease Research Laboratory o Rapid Plasmatic Reagin result done before week 20, if it was negative select the «(-)» box, if it was positive mark the «(+)» box and if it was not done mark the «not done» box. Write the date of the exam at the back of the Perinatal Card.

SYPHILIS CONFIRMED BY FTA. Mark the «yes» box if it was confirmed the syphilis, and «no» if it was not.

VDRL/RPR > = 20 weeks. Write the Venereal Disease Research Laboratory o Rapid Plasmatic Reagin result done at 20 weeks or after, if it was negative select the «(-)» box, if it was positive mark the «(+)» box and if it was not done mark the «not done» box. Write the date of the exam at the back of the Perinatal Card.

Hb < 20 weeks Hb. Write the values in grams per 100 millilitres of haemoglobin done before 20 weeks, if the value is under 11, 0 g mark the yellow box.

Fe/FOLATES prescribed. Mark «yes» when they were prescribed during gestation, and «no» if they were not.

Hb > = 20 weeks. Write the values in grams per 100 millilitres of haemoglobin done at 20 weeks or after, if the value is under 11.0 g mark the yellow box.

GROUP B STREP 35-37 WEEKS. Mark the «(-)» box if the result of the screening of Group B Strep at 35 to 37 weeks of gestation (recto-vaginal smear) was negative. Mark the «(+)» box if the result was positive. Mark the «not done» box if the screening was not done.

BREECH PRESENTATION. External cephalic version at term. Mark «yes» if it was done in breech presentation at term, and «no» if it was not done. Mark the «n/c» box if the foetus was in cephalic.

Antenatal visits

This section records data at each visit during pregnancy. It has 7 lines, one for each visit. If there were to be more, add another PCR form, on which there will be only the patient's NAME, the CODE of the hospital and the number of the clinical record.

DAY/MONTH. Date of each visit, ordered by the number beside it.

GESTATIONAL AGE. Those which have been completed from the first day of the last menstruation period until the day of the present visit.

WEIGHT OF THE PATIENT. In kilograms to one decimal figure. The patient will be barefoot and with light clothes.

BLOOD PRESSURE. The systolic and diastolic of the seated patient.

UTERINE HEIGHT. The uterine height in centimetres, from the border of the pubis symphisis to the fundus of the uterus.

PRESENTATION. For the presentation write «vertex», «breech» or «transv». If it is not possible to determine it, draw a horizontal line in the space.

FOETAL HEART RATE. The foetal heart rate, in heartbeats per minute.

ALARM SIGN, LABORATORY TEST, TREATMENTS. Use these lines to record relevant data on the pregnancy and which have not been included in Standard variables. It can also been used to write lab test results or treatments prescribed during gestation.

The same procedure is repeated for each visit.

TECHNICIAN'S NAME. Write the initials of the technician's name.

NEXT VISIT. Write the date and month for the next visit.

Delivery or Abortion

This section is design to record data on the checks during the dilatation period as well as other events during labour and delivery. Mark the box, ABORTION or LABOUR. Write the admission date indicating day, month and year.

In case of ABORTION mark the yellow box in the title of the section; fill in all the variables except PRESENTATION, MEMBRANES, EPISIOTOMY, ANTENATAL STEROIDS, LACERATIONS, RETAINED PLACENTA, COMPANION, DATA OF THE NEW BORN, and labour variables. The ONSET variable allows discriminating a spontaneous abortion from and induced abortion.

In case of FOETAL DEATH mark the white box «labour» and fill all the variables except those referring to the New Born like ATTENDED BY, NEWBORN NAME, and ID NUMBER.

PERINATAL CARD. If the patient had the perinatal card when she was admitted, mark «yes», otherwise mark «no».

ANTENATAL VISITS (total). Write the number of antenatal visits. Write 00 if there have been none.

HOSPIT. IN PREGNANCY. Write the total days the patient was hospitalized during pregnancy, excluding birthing admission.

ANTENATAL STEROIDS (courses) Consider «one course complete» when the patient has received one course and she has the delivery at least 24 hours after the first dose; consider «one course incomplete» when the delivery occurs before 24 hours of the first dose. The option «multiples» is when the patient receives more than one course and «none» when she did not receive a steroid course. Mark «n/c» when it does not correspond. When the patient received an antenatal steroid course write in the box the week it was started.

ONSET. Mark the correct box: «spontaneous», «induced», or «caesarean section» (elective caesarean section).

PRELABOUR RUPTURE OF MEMBRANES. This item refers to the prelabour rupture of membranes (one hour before the onset). Mark the «no» box when they are intact at the time the patient is admitted. Mark the «yes» box when the membranes had ruptured before. Write the day, month and year of the rupture, also the time (hour and minutes).

Mark «<37 weeks» if the gestational age at the moment of the rupture was under 37 weeks, if the time of rupture is equal or more than 18 hours mark «^{3} 18hs». If the Temperature at admission is 38°C or higher mark the box «^{3}38°C».

GESTATIONAL AGE AT DELIVERY. Note down the gestational age at the moment of delivery in weeks and days, if it is calculated by the LMP mark the «by LMP» box, it is calculated by ultrasound mark the «by US» box.

PRESENTATION. This refers to the type of presentation, «cephalic», «breech» or «transverse» diagnosed at the beginning of labour. Mark the correct box.

FOETAL SIZE (corresponds to G.A.) Determine clinically by palpation or measuring the uterine height, whether the foetal size corresponds to the amenorrhea. Mark «yes» if it corresponds, «no» if it does not.

COMPANION AT LABOUR: Note down the type of companion the patient had during labour and delivery. It can be «spouse», «family», «other» or «no one».

LABOUR. In each column record the data of the specified variables. It is not always necessary to fill in all the items at each control, if nothing has changed. This does not substitute the PARTOGRAPH which should always be used to monitor the progress of labour. In case the partograph is used mark the «yes» box, otherwise mark «no» and give the reason in a blank space of the PCR.

Hour/min. Time of the day of each control.

Companion. If she had a companion during labour.

Position. Note down the position the patient has during labour. (Walking, supine, DD; on her left side, DLI among others).

BP/MHR: In mmHg the maximum diastolic and systolic pressure and the maternal heart rate between uterine contractions in each control.

Contractility /10 min. The number of contractions in 10 minutes

Dilatation. In each control write down the cervix dilatation.

Height: That of the presentation, using either the stages I, II, III, IV (Hodge) or the stations -2, -1, 0, +1, and +2.

Var. position. Note with the letters LA, LT, LP, RA, RT, S or A, the variations in position.

Meconium: Write down if meconium is present or not during labour.

FHR/DIPS. The foetal heart rate between contractions, during and after them, to detect the existence or not of late decelerations during the relaxation period (DIPS).

BIRTH. Mark the «live» box if the newborn was delivered alive. In case of intrauterine death (including abortions) mark the box that indicates the moment of death, «pregnancy», «labour» or «not sure when».

Note down the hour, minutes, day, month and year of birth.

In case of multiple pregnancies write the birth order in the box besides and the number of foetuses.

Note: in these cases each birth needs to have an individual PCR sheet, the sheet of the child who was born first is number 1 and the other is number 2. In case of a single birth complete the «order» box with 0.

TERMINATION. Mark the box according to the way the labour or abortion ended, «spontaneous», c-section», «forceps», «vacuum», «other».

MAIN INDICATION OF INDUCTION OR SURGICAL DELIVERY. Write the main indication of induction, caesarean section o forceps. Note the code according to the list printed at the back of the PCR form.

POSITION DELIVERY. Mark the box that corresponds to the position at delivery, «seated», «squatting» or «supine».

EPISIOTOMY. Mark the appropriate box.

LACERATIONS. In case of lacerations mark its gravity or grade (1 to 4). If there were not lacerations mark the «no» box.

OXYTOCICS IN THIRD STAGE. Mark the appropriate box, «yes» or «no» referring to the use of oxytocics in the third stage, before expulsion of the placenta or after it.

PLACENTA. Mark «yes» if it was complete, mark «no» if it the expulsion was partial. In case of retained placenta mark «yes», if it was normal mark «no».

CORD CLAMPING. Indicate the time between the birth and the cord clamping, less than 30 seconds («<30 sec»), between 30 seconds and 1 minute («30s-1m») or after 1 minute («>1 m»).

MEDICATION. That administered during dilatation or expulsion. Mark for each medication «yes» if it was used or «no if it was not used. It does not include the oxytocin that was marked in «Oxytocics in third stage». In case of other medication not found inn the sheet mark the corresponding box in «other» and also write the name of it. Note the code of the medication used, according to the list printed at the back of PCR.

ATTENDED / DELIVERY/ NEONATE. This refers to the kind of staff that took care of the delivery, and gave the neonate immediate care. Mark the appropriate box. After that, write the name of the person who attended the delivery, and that of the person who took care of the neonate at birth.

Maternal Pathologies

Mark the diseases of the pregnancy, delivery and puerperium which are appropriate, as the diagnoses proceed. If we mark «none» all the other boxes will be empty. In case of existing pathologies mark the yellow box that corresponds to it and leave empty the others.

After the last alternative there are three groups of boxes which are to specify, in more detail, three of the pathologies registered according to the preceding alternatives. It must be pointed out that these coding boxes do not substitute, but complement the information obtained from those alternatives and their optional use.

The maternal pathologies must be completed when the mother is discharged.

Neonate

In case of ABORTION fill only the SEX and the BIRTH WEIGHT in this section. It is important to fill in the birth weight because the SIP programme requires the weight under 500 grams and the condition of foetal death to confirm abortion.

In case of FOETAL DEATH, fill in the SEX, the BIRTH WEIGHT, G.A. ESTIMATED BY PHYSICAL EXAMINATION, and mark 0 for both Apgar scores at first and fifth minutes.

SEX. That of the neonate. Mark the appropriate box, female («f»), male («m) or not defined when by the physical examination it can be defined («undefined»).

BIRTH WEIGHT. That of the child weighed naked, in grams. If it weights less than 2.500 grams, mark the yellow box.

LENGTH. The length in centimetres.

HEAD CIRCUMF. The head circumference in centimetres.

RELIABLE GESTATIONAL AGE. The reliable gestational age is the one calculated by amenorrhea or early ultrasound. Note it in weeks and complete days, mark if it is reliable by LMP («LMP») or ultrasound («us»). If it the GA is not reliable, write down the estimated according to the physical examination («estimated»)

G.A. BIRTH WEIGHT. This refers to the relation between weight by G.A. compared with a standard weight. The weight can be appropriate to its gestational age («approp»), lower («small»), or higher («big»)

APGAR. Apgar score at the first («1st m») and fifth (5th m») minute of life.

RESUSCITATION. Mark the appropriate option according if it was necessary to assist the neonate with oxygen, mask, tube, heart massage or adrenaline.

DEATH IN DELIVERY ROOM. Mark «yes» if the neonate died in the delivery room, «no» if it is alive.

REFERRAL. Please record the destination of the neonate after birth. If the child remains with its mother in the same room mark «room in», if it remains in the neonatal ward mark «hosp», and if it is referred to another hospital mark «other hosp».

CONGENITAL ANOMALIES. Record any congenital anomaly of the child. In case the child has none, please mark «no». If it has one, please classify it into minor o major by marking the box. Please note the code of the congenital anomaly using the coding list at the back of the PCR

PATHOLOGIES. It refers to neonatal pathologies that are not congenital anomalies. Note the code of the pathology using the coding list of Pathologies of the Neonate at the back of the PCR.

NORMAL NEONATAL SCREENING. Please record the result of all screening, either normal by marking the «yes» box, or pathologic by marking «no», or else by specifying «not done».

In case of «meconium 1st day» only mark «yes» or «no». In the «supine» option record the position it is put to sleep. This piece of information is to be gathered just before discharge. Write «yes» when the baby is in supine position, and write «no» when it is in any other position. Mothers must be instructed to put the child in the supine position.

Puerperium

This sector has six columns, each one for the register of one post-natal check during hospitalization.

Hour/min Time of day of the clinical checks.

Temperature. In degrees Celsius, to one decimal point. For example: 36.4°C.

Pulse. Numbers of pulsations per minute.

Blood pressure The systolic and the diastolic pressure in mm of HG (millimetres of mercury). For example: 110/70

Invol (uterine retraction). Note whether or not there is a good retraction or involution of the uterus. It is measured in centimetres or finger widths from the uterine fundus to the pubis.

Lochia. Note the characteristics of lochia according to the usual abbreviations used in the hospital.

Neonatal Discharge

DISCHARGE is the date of the last day of neonatal hospitalization whatever the child is alive or dead. Note the hour, day and month in which the child is discharged and the condition it was in; «alive» if it was discharged alive, «alive after transfer» if it was discharged alive from the hospital it was transferred, «dead» if it dies where it was born, « death after transfer» if it dies after it was transferred.

In case of ABORTION and FOETAL DEATH this section remains empty.

AGE. Its age in completed days. If the value has more than two digits register it too because the computer programme allows the operator to enter it. If it is less than one day write down «0» and mark the yellow box.

BREASTFEEDING. Feeding which the child is receiving when discharged. Mark «exclusive» when breast is the only type of food the child receives, «partial» when the child receives breastfeeding and formula, and «formula» when it is only feed with formula.

WEIGHT AT DISCHARGE. The weight of the child, in grams, when discharged.

ID NUMBER. Child identification number. Write it down at discharge.

NAME OF NEONATE. Write the name of the child given by the parents.

DISCHARGED BY. Note down the physician name.

Maternal Discharge

It is the last day of hospitalization whatever is the patient's condition, alive or dead, at discharge. Write the day and month of the maternal discharge and her condition. Mark «alive» if she was discharged alive, «alive after transfer» « if she was discharged alive from

the hospital she was transferred, «dead» if she die at the place it was born, « death after transfer» if she die at the place she was transferred.

REFERRED. Mark «yes» if the mother was referred to another place or hospital, mark «no» if she was not. Remember that if «yes» is selected do nor fill in the MATERNAL DISCHARGE box until we know the condition of discharge from the other hospital.

ANTIRUBELLA POSTPARTUM. Mark «valid» if the patient has been immunized before and it is valid. The options «no» and «yes» refer to the immunization in the postpartum. Mark «yes» if she was immunized during this period, and «no» in case she was not.

CONTRACEPTIVE ADVICE. Mark the appropriate alternative according to the contraceptive method chosen. Mark «referred» when the woman is sent for an outside visit, after discharge, to be advised on contraceptive methods.

Mark «none» if she did not choose any method nor was referred.

DISCHARGED BY: Write the complete name of physician who discharged the patient.

Perinatal Card

The perinatal Card is a copy of the PCR that the patient keeps so that all the information may reach the hands of those who deliver perinatal care to the pregnant woman at any place and at any time.

The Perinatal Card has an inside (similar to PCR) and an outside with the identification data of the woman, curves of uterine height and for maternal weight, a place for results of lab exams and to write extra information («observations») and a box to specify any period of time the pregnant woman was hospitalized.

Inside of the Perinatal Card:

The data taken on the inside of the card are those of the PCR, and are therefore gathered in the same way.

Outside of the Card:

PLACE OF ANTENATAL VISITS (origin). Write down the Maternity code where the antenatal visits took place.

BOOKED MATERNITY. Write down the Maternity name and code where the delivery will take place.

Identification of the pregnant woman.

NAME. Her father's surname and her mother's surname and all her given names. They should be copied from any identity card she presents.

ADDRESS. This means her home address. Record the street, the house number, and the district (name of the city, village, area, etc). If the address can not be identified with these data, write in any other reference which allows her to be located; for example Km 5 of Route 3)

TELEPHONE. That of the home. Otherwise the nearest one available.

ANTENATAL VISITS

There is a box with items to be questioned in the antenatal visits.

Safe sex. Give advice on safe sex. Emphasize the risk of acquiring or transmitting STIs without the use of condoms.

Tobacco/alcohol. Advise women to stop the use of tobacco and alcohol explaining their harmful effects.

Breastfeeding. Advise on breast feeding, when to stop breast feeding previous child and when to begin breast feeding the expected child.

Emergency. Give advice on whom to call or where to go in case of bleeding, abdominal pain and any other emergency, or when in need of other advice.

Birth plan. Give advice on birth plan, where to go including special transport to delivery institution.

Next Scheduled Visit. Next visit, state day and hour.

Family. Advise the woman to bring her partner or a family member to later antenatal control so they can be involved in the activities and can learn how to support the woman through her pregnancy.

Bacteriuria. Do this test in the first visit, if it is (+) repeat it in the next visits.

Proteinuria. Do this test in the first visits. Repeat it in case of nullipara or if the woman has a history of hypertension, preeclampsia or eclampsia in previous pregnancies.

Haemoglobin. Determine haemoglobin before 20 weeks of gestation and at least one more time after the 20.

Iron and Folates. Supply with iron and folates all the patients, if anaemia has a high prevalence.

Syphilis. Do the screening of this pathology with the VDRL or RPR tests, in the first visit and in the third trimester.

Tetanus toxoid. Control the patient immunization. If it is not valid indicate it at 32 weeks.

Malaria. In endemic zone indicate sufadoxine/pyrimetamina, three pills in the second trimester and in the third trimester repeat the dose.

HOSPITALIZATION

In case of hospitalization during pregnancy, write the place, date of admittance and discharge. It is also useful to write down the diagnosis.

OBSERVATIONS

In this box write all clinical observations, lab results and therapeutic treatment that are considered important during the pregnancy and puerperium.

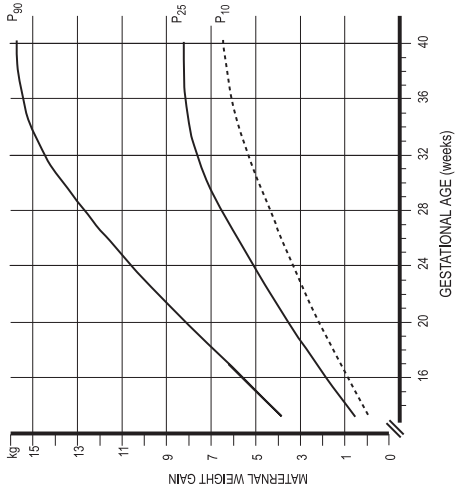
Curves of uterine height

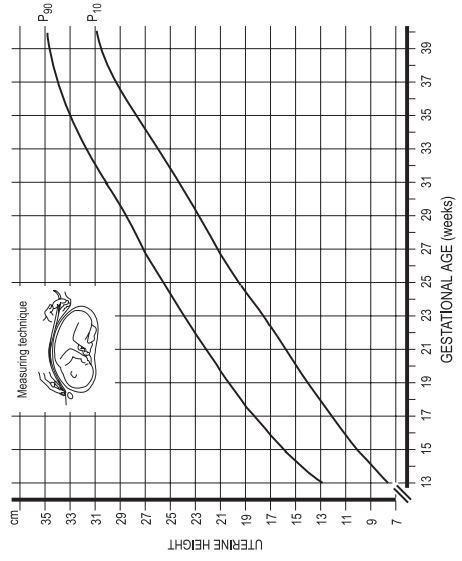
Measurement is made with the mother lying on her back. It is measured in centimetres with a flexible and inelastic tape, from the upper edge of the pubis to the uterine fundus as determined by palpation.

There are different methods of measurement of the uterine height that result in different data, so it is very important to standardize the technique and use reference patterns.

The standard values with which the PERINATAL CARD curve was drawn were obtained by means of the following measuring technique: one end of the tape measure was rested on the upper edge of the pubis with one hand, while the other hand holding the tape between the index and the middle fingers, slides along it till the outside edge of the hand rests at the height of the uterine fundus, as determined by palpation.

Perinatal Card (Front)





ANTENATAL VISITS	1st visit <12 weeks	2nd visit 26 weeks	3th visit 32 weeks	4th visit 36 weeks
Safe sex				
Tobacco / Alcohol	advise to stop use tobacco			
Breast feeding	If lactating		Preparation	
EMERGENCY				
Delivery plan				
Family	During pregnancy	during labour		
Next visit planned	26 weeks	32 weeks	36 weeks	41w / postpartum
Bacteriuria	All	if 1st test is positive		
Proteinuria	All	only in case of high blood pressure		
Hemoglobin test	If clinical anemia			
Fe / Folic acid		If necessary		
Syphilis test				
Tetanus toxoid	Current or 1st dose		2nd dose	
Malaria				

HOSPITALIZATION	ADMITTED		DISCHARGED	
	Day	Month	Day	Month

NOTES

PERINATAL CARD

Place of antenatal visits (Prenat. Clinic)

Maternity Hospital (Institution)

STAMP

Pregnancy is not a disease, but needs surveillance by the health team in order to avoid complications.

It is important to make your first visit to the health center without delay.

Keep your appointments and follow the health team advice.

This card contains important information for yuor health and you child's health. Take it with you as your identification document and deliver it to the health team whenever you need care, whether during pregnancy, labor, puerperium or when controlling the growth and development of your child.

In case of loss please notify:

NAME

ADDRESS

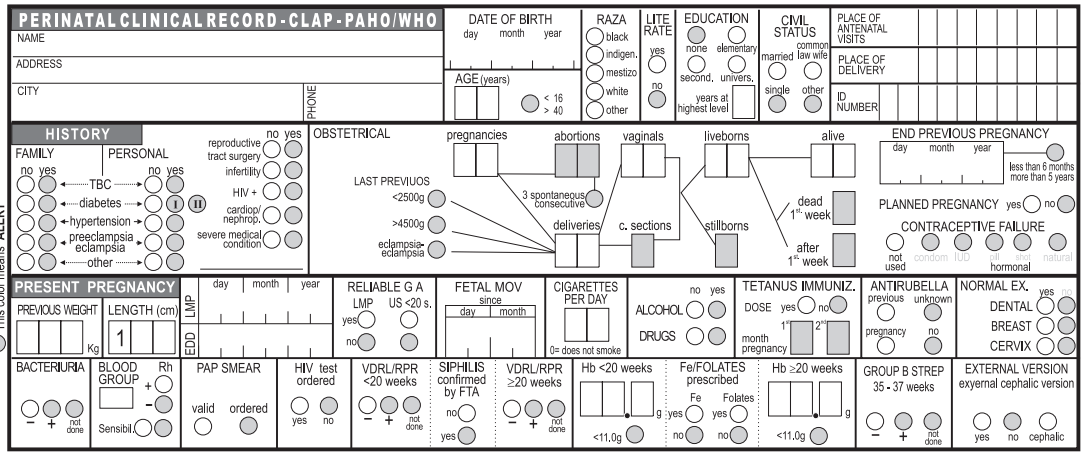
TELEPHONE

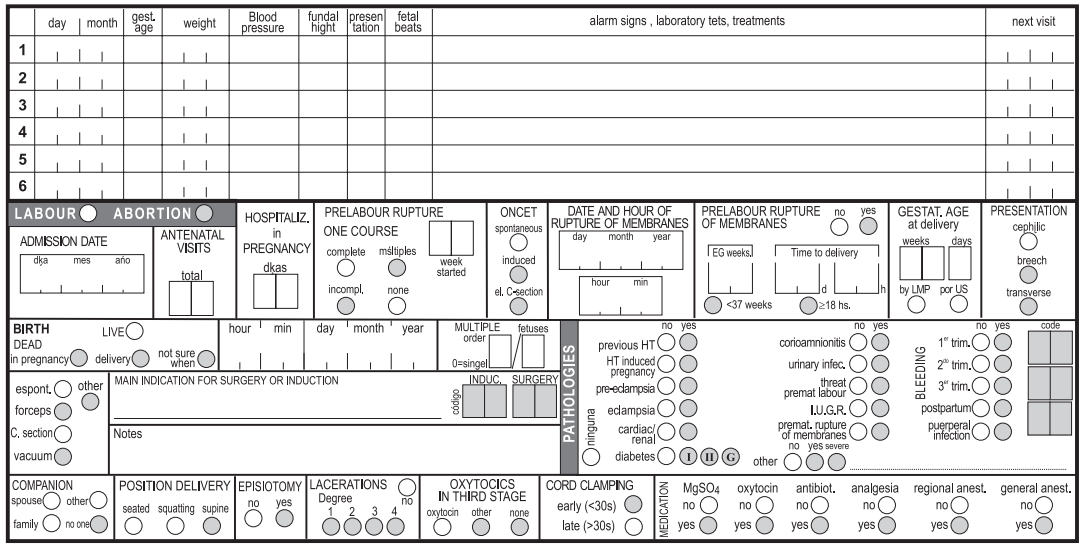
TOWN or CITY

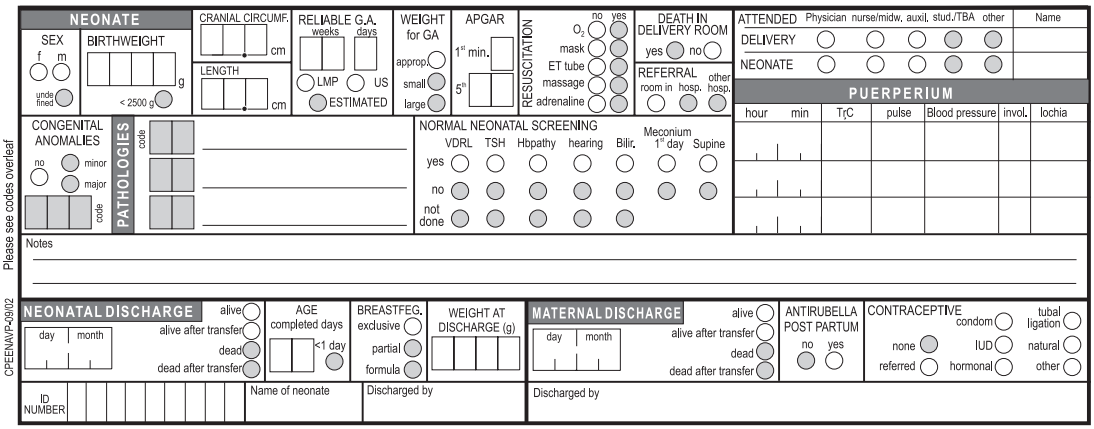
Latin American Center for Perinatology and Human Development (CLAP)
Panamerican Health Organization / World Health Organization (OPS/OMS)

CPEENAVP-10/03

Perinatal Card (back)







Patterns of uterine heigth and increase in maternal weight according to gestation age.
Once the gestational age in known, graph both values on the charts overleaf.

Interpretation. Normal Value: that included between centiles 10 and 90 of the standard curve for uterine height at a given gestational age.

Abnormal value: that which exceeds centile 90, or is less than centile 10 on the reference curve, for a given gestational age.

EXAMPLE. The patient is at 22 weeks gestation, and her uterine height is 17 cm. (Please graph the point in the Curve on the Perinatal Card)

From 22 weeks on the horizontal axis (abscissa) draw a vertical to reach the line at 17 cm mark on the vertical axis (ordinate). At the intersection, mark a point which will be a little above centile 10.

At the second visit, at 28 weeks, the uterine height is of 24 cm. When these values are transferred to the graph, the curve is found to be between 10^{th} and 50^{th} centile.

Curves for weight increase

Weight increases which are too low as well those which are too high have been associated with bad perinatal outcomes. Once the gestational week has been determined, subtract the present weight from the weight before pregnancy; thus the weight increase can be calculated for that G.A. and the value transferred to the graph.

Normal value: the increase is between centiles 25 and 90. Abnormal Value: the increases are above centile 90 or lower than centile 25.

Example: The patient weighed 52 Kg before pregnancy, and at 14 weeks of gestation weighed 53.5 kg. The weight increase by the 14^{th} week is calculated by subtracting 53.5-52 kg= 1.5 kg

To draw the graph, do the following steps: From the 14 weeks value, which is on the horizontal axis (abscissa), draw a vertical line to reach the 1.5 kg mark on the ordinate. At the intersection mark a point, this in this case will fall between the centiles 90 and 25.

At 32 weeks the weight is 60.5 kg so the increase is 60.5 - 52= 8.5 Kg. Again the value is transferred to the graph and in this case the point will be between the 90^{th} and 25^{th} centiles.

Neonatal Hospitalization Record

If a neonate needs special care in a Neonatal Ward three forms may help to organize basic information for clinical purposes:

- Perinatal Clinical Record (PCR)
- Neonatal Admission and Discharge Form (FHN)
- Neonatal Care Daily Flow Chart (FEN)

The three forms complement each other and cover most of the information avoiding unnecessary repetition of relevant patient data. The acronyms are taken from their names in Spanish.

A photocopy or handwritten copy of the Perinatal Clinical Record form should be attached to the Neonatal Record and the neonatal data filled out in the delivery room and at discharge. This information is collected for every neonate born in the hospital and covers also those that are never admitted to the neonatal ward and stay with their mothers in the post partum or rooming-in ward.

The Neonatal Hospitalization Form is filled out at admission and discharge of the neonate from the neonatal wards.

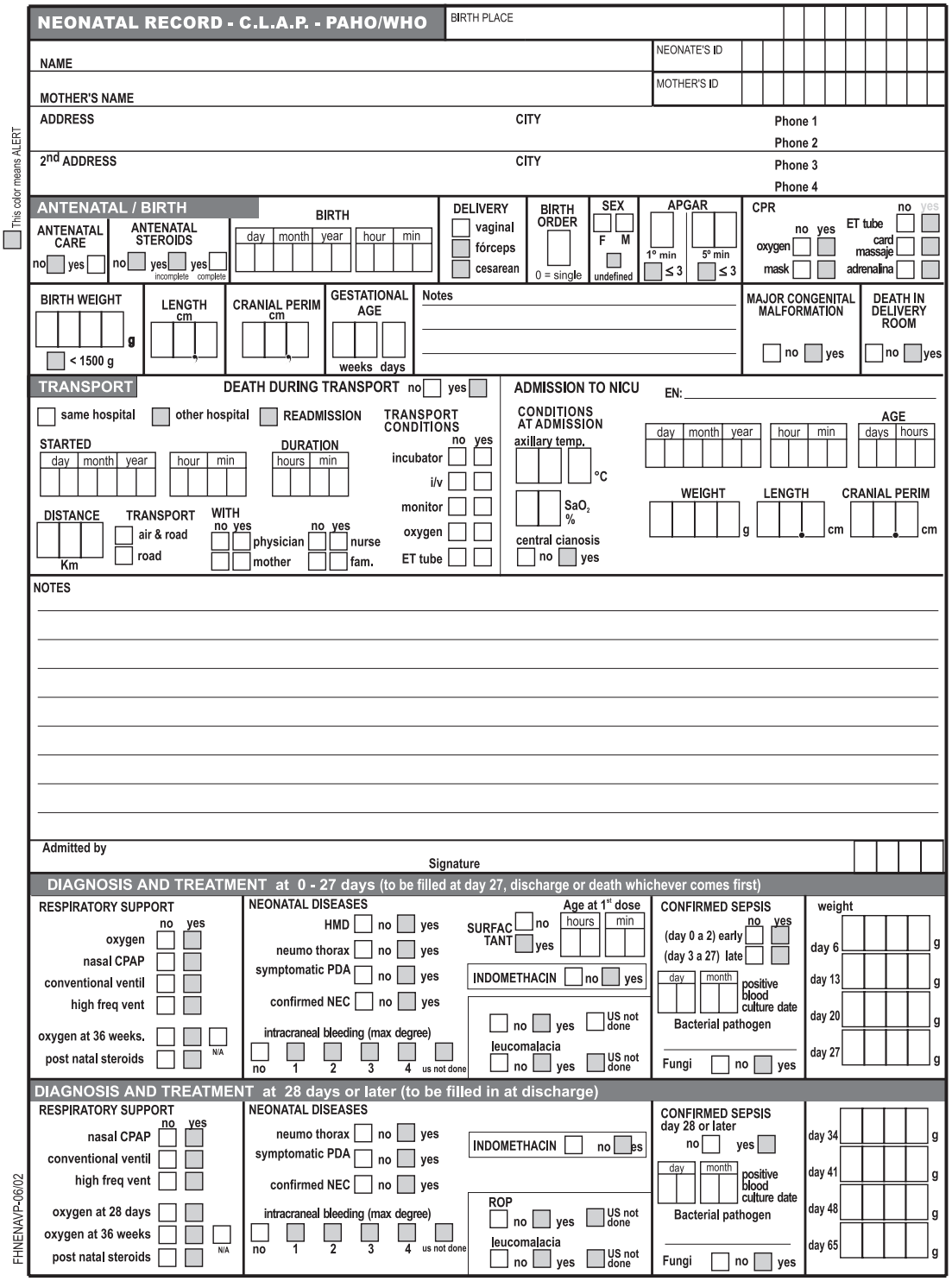
The Neonatal Care Daily Flow Chart designed for recording the neonatal nurses observations and the medical prescriptions is specially designed to collect all relevant information at each control (column) in a standardized format. It helps to recover relevant information on each patient for the discharge summary form.

Filling in the neonatal hospitalization form

This form is for all infants born at your hospital and admitted to the Neonatal Ward. This includes live born infants who die in the delivery room or who die prior to admission to the neonatal intensive care unit. A live born infant is one who breathes or has any evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Stillbirths are registered only in the Perinatal Basic Clinical Record.

The form is designed with 6 modules, 2 of them cover information more specific to the care of the VLBW infants.

Neonatal Hospitalization Record (Front)



NEONATAL RECORD - C.L.A.P. - PAHO/WHO | BIRTH PLACE

NAME | NEONATE'S ID

MOTHER'S NAME | MOTHER'S ID

ADDRESS | CITY | Phone 1 | Phone 2

2nd ADDRESS | CITY | Phone 3 | Phone 4

This color means ALERT

ANTENATAL / BIRTH

ANTENATAL CARE: no / yes

ANTENATAL STEROIDS: no / yes (incomplete) / yes (complete)

BIRTH: day | month | year | hour | min

DELIVERY: vaginal / fórceps / cesarean

BIRTH ORDER: 0 = single

SEX: F / M / undefined

APGAR: 1° min ≤ 3 | 5° min ≤ 3

CPR: no / yes — oxygen / mask / ET tube / card massaje / adrenalina

BIRTH WEIGHT: g — < 1500 g

LENGTH: cm

CRANIAL PERIM: cm

GESTATIONAL AGE: weeks | days

Notes

MAJOR CONGENITAL MALFORMATION: no / yes

DEATH IN DELIVERY ROOM: no / yes

TRANSPORT

same hospital / other hospital / READMISSION

STARTED: day | month | year | hour | min

DURATION: hours | min

DISTANCE: Km

TRANSPORT: air & road / road

WITH: physician / mother / nurse / fam.

DEATH DURING TRANSPORT: no / yes

TRANSPORT CONDITIONS: incubator / i/v / monitor / oxygen / ET tube

ADMISSION TO NICU

EN:

CONDITIONS AT ADMISSION: axillary temp. °C; SaO_2 %; central cianosis: no / yes

AGE: day | month | year | hour | min | days | hours

WEIGHT: g | LENGTH: cm | CRANIAL PERIM: cm

NOTES

Admitted by | Signature

DIAGNOSIS AND TREATMENT at 0 - 27 days (to be filled at day 27, discharge or death whichever comes first)

RESPIRATORY SUPPORT: oxygen / nasal CPAP / conventional ventil / high freq vent / oxygen at 36 weeks. (N/A) / post natal steroids (N/A)

NEONATAL DISEASES: HMD / neumo thorax / symptomatic PDA / confirmed NEC / intracraneal bleeding (max degree): no 1 2 3 4 us not done

SURFAC TANT: no / yes — Age at 1st dose: hours | min

INDOMETHACIN: no / yes

leucomalacia: no / yes / US not done

CONFIRMED SEPSIS: (day 0 a 2) early / (day 3 a 27) late; day | month positive blood culture date; Bacterial pathogen; Fungi: no / yes

weight: day 6 / day 13 / day 20 / day 27 (g)

DIAGNOSIS AND TREATMENT at 28 days or later (to be filled in at discharge)

RESPIRATORY SUPPORT: nasal CPAP / conventional ventil / high freq vent / oxygen at 28 days / oxygen at 36 weeks (N/A) / post natal steroids (N/A)

NEONATAL DISEASES: neumo thorax / symptomatic PDA / confirmed NEC / intracraneal bleeding (max degree): no 1 2 3 4 us not done

INDOMETHACIN: no / yes

ROP: no / yes / US not done

leucomalacia: no / yes / US not done

CONFIRMED SEPSIS day 28 or later: no / yes; day | month positive blood culture date; Bacterial pathogen; Fungi: no / yes

day 34 / day 41 / day 48 / day 65 (g)

FHNENAVP-06/02

Neonatal Hospitalization Record (back)

NEONATAL DISCHARGE

This color means ALERT

LIST OF DISEASES

50	**HYALINE MEMBRANES DISEASE**	P22.0
51	**MECONIUM ASPIRATION SYNDROME**	P24
52	**PRETERM APNEA**	P28.3-P28.4
53	**OTHER RDS**	Q25.0, P28.3, P23, P25, P22, P27
01	Patent ductus arteriosus	Q25.0
02	Primary pulmonary hypertension—	P29.3
03	Congenital pneumonia	P23
04	Pneumothorax and pie	P25
05	Transient tachipnea	P22.1
06	Chronic lung disease CLD	P27
	BLEEDING INCLUDING INTRACRANIAL	
07	Hemorrhagic disease of neonate	P53
55	Pulmonary hemorrhage	P26
56	Umbilical bleeding (excludes mild...	P51
	HYPERBILIRRUBINEMIA	
08	Hemolitic disease due to Rh confl...	P55.0
09	ABO hemolitic disease	P55.1
10	Neonatal jaundice in preterm	P59.0
58	**HEMATOLOGIC**	P60-P61
11	Polycitemia	P61.1
12	Congenital anemia	P61.3
13	Other blood disorders	(P35-P39,A09,G00,A54,3)
	INFECTIONS	
14	Diarrhea	G00
15	Meningitis	P38
16	Onfalitis	P39.1, A54.3
17	Conjuntivitis	P39.4,L00
59	Skin infections	P36
18	Sepsis	(resto del P35-P39)
20	NEC	P77
49	Neonatal tetanus	A33
60	Congenital sphylis	A50
61	Congenital viral diseases	P35
68	Congenital rubbela syndrome	P35.5
69	Cytomegalovirus	P35.1
70	Toxoplasmosis	P37.1
39	HIV positivo	R75
19	Other perinatal infections	(rest of P60-P61)
	NEUROLOGICA (EXCLUYE MALFORMACIONES)	
33	Acquired hydrocephaly	G91
34	Periventricular leucomalacia	P91,1,P91,2
35	Obstetric trauma with CNS injury or nerve injury	P10,P11,P14
36	Intracranial bleeding (non traumatic)	P52
37	Seizures	P90
71	Encephalopaty (Ischemic-Hypoxic)	P21
38	Other dideases of CNS	P91
	METABOLIC/NUTRITIONAL	
43	Infant of diabetic mother syndrome	P70.0, P70.1
45	Hypoglicemia	P70.3, P70.4, E16.2
46	Other metabolic/nutritional disorders	P75-PT8
66	**OTHER NEONATAL PROBLEMS**	
40	Retinopathy of prematurity	H35
41	Inguinal hernia	K40
65	Extreme hypothermia	P80.0 (excludes mild hypothermia P80.8)

CONGENITAL ANOMALIES

120	Anencephaly	Q00.0
121	Spina bifida/Myelomeningocele	Q05,Q07.0
122	Hydranencephaly	Q04,3
123	Hidrocephaly	Q03
124	Microcephaly	Q02
125	Holoprosencephaly	Q04.2
127	Other central nervous system anomalies	Q04,Q06
128	Truncus arteriosus	Q20.0
129	D-Transposition of great arteries	Q20.3
130	Tetralogy of Fallot	Q21.3
131	Single ventricle	Q20.4
132	Double autlet right ventricle	Q20.1
133	Complete atrio-vent.	Q21.2
134	Pulmonary atresia	Q22.0
135	Tricuspid atresia	Q22.4
136	Hypoplastic left hear syndrome	Q23,4
137	Coartaction of aorta	Q25,1
138	Total anomalies pulmonary venous drainage	Q26.2
139	Other circulatroy/respiratory anomalies	Q24,28,34
140	Cleft palate	Q35
141	Tracheo-esophageal fistulae	Q39,1
142	Esophageal atresia	Q39.0,Q39.1
143	Colonic or rectal atresia	Q42.0,Q42.1,Q42.8,42.9
144	Imperforated anus	Q42,3
145	Onfalocele	Q79.2
146	Gastroschisis	Q79.3
147	Duodenal atresia	Q41,0
148	Yeyunal atresia	Q41.1
149	Ileal atresia	Q41.2
150	Other gastrointestinal anomalies	Q40,43,45
151	Malformed genitalia	Q50-56
152	Bilateral renal agenesis	Q60,1
153	Poli or multichistics or displasic kidneys	Q61.1-61.9
154	Congenital hydronephrosis	Q62,0
155	Bladder extrophy	Q54
156	Other nephrourinary anomalies	Q63,64
157	Trisomy 13	Q91.4, Q91.5,Q91.6
158	Trisomy 18	Q91.0, Q91.1,Q91.2
159	Down syndrome	Q90
160	Other chromosomic anomalies	Q92,97-99
126	Clef lip	Q36
161	Polydactyly	Q69
162	Syndactyly	Q70
163	Bone displasia	Q77-78
164	Pes equinovarus/talovalgus (Pied Bot)	Q66.8
165	Diaphragmatic hernia	Q79.0
166	Hidrops fetalis	P56,P83.2
167	Severe oligoamnios	P01.2
168	Other musculoskeletal/integumental anomalies	Q68,74,75,79
169	Skin anomalies	Q82,84

CONFIRMED DIAGNOSTIC

RESPIRATORY SUPPORT

length of ET intubation ___ d length of nasal CPAP ___ d

FEEDING

length of parenteral nutrition ___ d age at 1st enteral feed ___ d age at end of gavage feeds ___ d

SURGERY

☐ no ☐ yes, ECN

☐ yes, ductus ☐ yes, other

_____

BLOOD TRANS FUSIONS ___

DISCHARGE

WEIGHT ___ g LENGTH ___ cm HEAD CIRC ___ cm Age ___ days Corrected GA ___ weeks ___ days

DISCHARGE DATE day | month | year | hour | min

CONDITION ☐ healthy ☐ ill ☐ referral ☐ dead

FEEDIN ☐ exclusive mother's milk ☐ partial ☐ formula

GROWTH

lowest weight ___ g age at lowest weight ___ d age at recovery of birth weight ___ d

weight at 36 weeks ___ g

weight at 40 weeks ___ g

Referred to hospital or home address _____

NECROPSY ☐ N/A ☐ yes ☐ no

NOTES

PRESCRIPTIONS AND ADVICE AT DISCHARGE

Discharged by _____ **Signature** _____ **Date** ___

FHNENRVP-06/02

The modules are

- IDENTIFICATION
- PRENATAL AND DELIVERY ROOM CARE
- TRANSPORTATION AND ADMISSION TO NICU
- DIAGNOSES AND TREATMENTS OF VLBW INFANTS DURING THE FIRST 28 DAYS
- DIAGNOSES AND TREATMENTS OF VLBW INFANTS AFTER THE FIRST 28 DAYS
- NEONATAL DISCHARGE

All data of coded variables is filled in with a check in the respective box.

All rectangular boxes are filled with digits.

Text should be written with block letters.

For some variables some values are highlighted in yellow to make them more visible to those in charge of the patient.

IDENTIFICATION:

Place of birth: The name of the Institution. In non institutional birth the place where was born should be detailed i.e. Home, Ambulance, etc.

INSTITUTIONAL OFFICIAL CODE:

Local authorities in each country should provide a list of Codes that identify each institution.

NAME OF THE NEONATE: Write the one that is provided by any of the parents.

IDENTIFICATION NUMBER OF THE NEONATE: Defined at each country level.

NAME OF THE MOTHER: According to her ID documents.

MATERNAL ID # : The number in her ID document.

MAIN / HOME ADDRESS AND PHONE #: Where the mother will live after hospital discharge. Preferably her permanent address and can be contacted for follow up.

SECOND ADDRESS: Other family members or work address of any of the parents to use in case of failure to contact home address.

PRENATAL AND DELIVERY ROOM INFORMATION:

PRENATAL CARE:
Check “Yes” if the mother received any prenatal obstetrical care prior to the admission during which birth occurred.
Check “No” if the mother did not receive any prenatal obstetrical care.

ANTENATAL STEROIDS:
Check "Yes" if corticosteroids were administered IM or IV to the mother during pregnancy at any time prior to delivery
Check "No" if no corticosteroids were administered IM or IV to the mother during pregnancy at any time prior to delivery
(Corticosteroids include betamethasone, dexamethasone and hydrocortisone).

DATE OF BIRTH: Enter the infant's date and time of birth.

MODE OF DELIVERY:
Check "Vaginal" for any vaginal delivery when forceps has not been used.
Check "Forceps" for vaginal deliveries when Forceps has been used.
Check "Cesarean Section" for any cesarean delivery (elective or emergent).

MULTIPLE BIRTHS
Enter "0" in singleton births.
Enter the "order of birth" in multiple births.

INFANT SEX
Check the assigned sex.
Check "Undefined" In case of ambiguous genitalia.

APGAR SCORE
Enter Apgar Score at 1 minute and at 5 minute.

DELIVERY ROOM RESUSCITATION
Check "Yes" for all interventions that apply.

OXYGEN
Check "Yes" if the infant received any supplemental oxygen in the delivery room
Check "No" if the infant did not receive supplemental oxygen in the delivery room

BAG AND MASK
Check "Yes" if the infant received any positive pressure breaths with a bag and face mask in the delivery room.
Check "No" if the infant did not receive any positive pressure breaths with a bag and face mask in the delivery room.
Check "No" if a bag and face mask were only used to administer CPAP (continuous positive airway pressure) and no positive pressure breaths were given.

ENDOTRACHEAL TUBE VENTILATION
Check "Yes" if the infant received ventilation through an endotracheal tube in the delivery room.
Check "No" if the infant did not receive ventilation through an endotracheal tube in the delivery room.
Check "No" if an endotracheal tube was placed only for suctioning and assisted ventilation was not given through the tube.

EPINEPHRINE
Check "Yes" if epinephrine was given in the delivery room via intravenous, intracardiac or intratracheal (through and endotracheal tube) routes.

Check “No” if epinephrine was given in the delivery room via intravenous, intracardiac or intratracheal routes.

CARDIAC MASSAGE
Check “Yes” if external cardiac compressions were performed in the delivery room.
Check “No” if external cardiac compressions were not performed in the delivery room.

BIRTH WEIGHT
Enter the birth weight in grams. Since many weighs may be obtained on an infant shortly after birth, enter the weight obtained in the delivery room if available and judged to be accurate. If unavailable or judged to be inaccurate, use the weight on admission to the neonatal unit or lastly, the weight obtained on autopsy (if the infant expired within 24 hours of birth).

LENGTH
Enter of length in millimetres, measured in the delivery room. If unavailable or judged to be inaccurate, use the length on admission to the neonatal unit or lastly, the length obtained on autopsy (if the infant expired within 24 hours of birth).

CRANIAL PERIMETER
Enter of cranial perimeter in millimetres, measured in the delivery room. If unavailable or judged to be inaccurate, use the cranial perimeter on admission to the neonatal unit or lastly, the cranial perimeter obtained on autopsy (if the infant expired within 24 hours of birth).

GESTATIONAL AGE
Enter the best estimate of gestational age in weeks and days using the following hierarchy:
1 Obstetrical calculation based on first day of last menstrual period.
2 Obstetrical parameters and early prenatal ultrasound measurements.
3 Estimation based on physical and neurological criteria.
If the best estimate is an exact number of weeks enter “0” in days. Do not leave the number of days blank.

ETHNIA OF THE MOTHER AND FATHER
If this variable is considered necessary, CLAP provides forms that substitute the areas of notes with this variable.

MAJOR CONGENITAL MALFORMATION
Check “Yes” if the infant had one or more of the birth defects in the list congenital anomalies in the back of the form, except for : cleft lip, polydactyly and syndactyly.

DEATH IN THE DELIVERY ROOM
Check “Yes” if the infant was born in your hospital, was never admitted to the NICU and dies in the delivery room.
Check “No” if the infant was born in your hospital and left the delivery room alive.
Check “No” for all out born infants.
In case of death in the delivery room, the modules IDENTIFICATION AND PRENATAL AND DELIVERY CARE should be filled out completely. It is recommended that the Delivery Room Log Book should be checked weekly to assure that for every baby dying in the Delivery Room there is a Neonatal Hospitalization Form filled out.

TRANSPORTATION

DIES DURING TRANSPORTATION
Check “Yes” if the infant dies during transportation.
Check “No “ if the infant is alive at admission to the NICU.

DESTINY OF TRANSPORTATION
Enter the destiny of the transportation.
Check “In hospital transportation” when the infant is transported to the NICU in the same hospital.
Check “Other Hospital” when the infant is sent to a hospital different from the place of birth.
Check “Readmission” when the infant is transported to the hospital where was born before having been discharged home.

TIME OF TRANSPORTATION
Enter the date and time of initiation of the transport.

DURATION
Enter the duration of the transport in hours and minutes.

DISTANCE
Enter the approximate distance of travel during transport in kilometres.

TYPE OF TRANSPORT
Check “Air and road” when the infant was partially transported by plain or boat.
Check “Road” when the infant was transported only by car.

ACCOMPANIED BY PHYSICIAN
Check “Yes” when a medical doctor was in the transport team.
Check “No” when a medical doctor was not in the transport team.

NURSE/MIDWIFE
Check “Yes” when a nurse/midwife was in the transport team.
Check “No” when a nurse/midwife was not in the transport team

MOTHER
Check “Yes” when the mother was transported with the infant
Check “No” when the mother was not transported with the infant.

FAMILY MEMBER
Check “Yes” when a family member was transported with the infant
Check “No” when a family member was not transported with the infant.

TRANSPORT CONDITIONS

INCUBATOR
Check “Yes” when the infant was transported in an incubator
Check “No” when the infant was not transported in an incubator

I-V INFUSION
Check “Yes” when the infant was transported with an I-V infusion
Check “No” when the infant was not transported with an I-V infusion

MONITORS
Check "Yes" when the infant was transported with a monitor for vital signs
Check "No" when the infant was not transported with a monitor for vital signs

OXYGEN
Check "Yes" when the infant received additional oxygen during transportation
Check "No" when the infant did not receive additional oxygen during transportation.

ENDOTRACHEAL INTUBATION
Check "Yes" when the infant was transported with an endotracheal tube
Check "No" when the infant was not transported without and endotracheal tube.

ADMISSION TO THE NEONATAL UNIT

PLACE
Enter the name of the place where the infant was admitted.

TIME OF ADMISSION
Enter date and time of admission.

AGE
Enter time from birth to admission in days and hours. If admitted in the first hour enter "0".

TEMPERATURE
Enter the axilar temperature of the infant (in Celsius) on admission to the unit.

SaO_2
Enter the SaO2 (measured with a pulse oxymeter) of the infant on admission to the

NICU CENTRAL CYANOSIS
Check "Yes" if the infant is cyanotic on admission
Check "No" if the infant is not cyanotic on admission.

WEIGHT
Enter the weight in grams on admission.

LENGTH
Enter of length in millimetres on admission.

CRANIAL PERIMETER
Enter of cranial perimeter in millimetres on admission.

NOTES
Space for additional information on admission. These notes can be expanded in blank pages if necessary. The notes should not repeat those data that have already been filled in this form or in the Perinatal Clinical Basic Form.

ADMITTED BY
Enter the name, signature and code of the person in charge of the admission of the infant to the unit.

DIAGNOSES AND TREATMENTS FROM 0-27 DAYS OF LIFE

This section is mainly prepared for data relevant to the care of VLBW infants but can be filled out for every neonate admitted to the Unit.

Events recorded in this section are only those occurring during this period of time. The purpose of this section is to collect information valid for statistics of the neonatal period. If the infant stays in the NICU after 27 days additional information will be collected in a similar section. Information of both sections is complementary and will be added in the analysis of events during hospitalization.

RESPIRATORY SUPPORT

Check “Yes” if the infant was given supplemental oxygen at anytime after leaving the delivery room.

Check “No” if the infant was never given supplemental oxygen after leaving the delivery room.

NASAL CPAP

Check “Yes” if the infant was given continuous airway pressure applied through the nose at anytime after leaving the delivery room.

Check “No” if the infant was never given continuous airway pressure applied through the nose after leaving the delivery room.

CONVENTIONAL VENTILATION

Check “Yes” if the infant was given intermittent positive airway pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at anytime after leaving the delivery room.

Check “No” if the infant was never given intermittent positive airway pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at anytime after leaving the delivery room.

If it is via nasal prongs is not considered conventional ventilation.

HI-Fi

Check “Yes” if the infant was given high frequency ventilation (IMV rate >240/minute) at anytime after leaving the delivery room.

Check “No” if the infant was never given high frequency ventilation (IMV rate >240/ minute) after leaving the delivery room.

If it is via nasal prongs is not considered HI-FI ventilation.

OXYGEN AT 36 WEEKS OF ADJUSTED GESTATIONAL AGE

Check “Yes” if the infant is in the hospital and receives supplemental oxygen when reaches the adjusted gestational age of 36 weeks.

Check “No “if the infant is in the hospital and does not receive supplemental oxygen when reaches the adjusted gestational age of 36 weeks.

Check “Not applicable” when the infant is not alive in the hospital on the date at which the infant 36 weeks adjusted gestational age, was born after 36 weeks of GA or has not reached 36 weeks of adjusted gestational age, before 28 days of life.

POST NATAL STEROIDS FOR CLD

Check “Yes” if systemic steroids were used after birth to treat or prevent bronchopulmonary dysplasia or chronic lung disease.

Check “No” if systemic steroids were not used after birth. Check “Yes” if systemic steroids were used after birth to treat or prevent bronchopulmonary dysplasia or chronic lung disease.

Inhaled steroids are not considered systemic corticosteroids.

NEONATAL DISEASES AND OTHER TREATMENTS

Hyaline Membranes Disease

Check «Yes» if the infant had Respiratory Distress Syndrome (RDS) defined as:

A. A Pa02 <50 mmHg in room air, central cyanosis in room air, or a requirement for supplemental oxygen to maintain Pa02 >50 mmHg AND

B. A chest radiograph consistent with RDS (low lung volumes and reticulogranular appearance to lung fields, with or without air bronchograms).

Check «No» if the infant did not satisfy both criteria A and B above.

SURFACTANT AT ANY TIME

Check «Yes» if the infant received an exogenous surfactant at any time.

Check «No» if the infant never received an exogenous surfactant.

AGE AT FIRST DOSE:

If surfactant was given at any time, enter the infant’s postnatal age in hours at the time when the first dose of surfactant was administered. For **inborn** infants, the first dose may have occurred prior to or after NICU admission. For **out born** infants, the first dose may have occurred before transfer, during transport or at your hospital.

The postnatal age at first dose is the interval in hours and minutes, to the nearest minute, between the date and time of birth and the date and time at which the first dose was given. If the postnatal age at the time of the first dose was exact in hours, a «0» should be entered in the “minutes» portion of this item. Do not leave hours or minutes blank. If the precise age at first dose is unknown, but an estimated age at first dose can be reliably determined to the nearest 15 minutes, please record this estimate.

PNEUMOTHORAX:

Check “Yes» If the infant had extra pleural air diagnosed by chest radiograph or needle aspiration (thoracentesis).

Check «No» if the infant did not have extra pleural air as defined above.

For infants who had thoracic surgery and a chest tube was placed at the time of surgery OR if free air was only present on a CXR taken immediately after thoracic surgery and was not treated with a chest tube, check «No».

For infants who had thoracic surgery and then later developed extra pleural air diagnosed by CXR or needle thoracentesis, check «Yes».

PATENT DUCTUS ARTERIOSUS:

Check «Yes» if there was a heart murmur compatible with a patent ductus arteriosus (PDA) and/or Doppler evidence of left-to-right ductal shunting plus two or more of the following:

· bounding peripheral arterial pulses

· hyper dynamic precordial pulsation

· radiographic evidence of cardiomegaly

· or pulmonary oedema inability to decrease ventilator settings (pressure, rate, Fi02) after 48 hours from the time of birth. (If one or more of these parameters can be consistently decreased, an infant does not meet this criterion.)

Check «No» if the infant does not satisfy the above definition. This definition is adapted from Bandstra et al Paediatrics 1988,82:533.

INDOMETHACIN:

Check «Yes» if Indomethacin was administered. The answer to this question may be «yes» even if an infant did not meet the definition of PDA given above.

Check «No» if Indomethacin was not administered.

NECROTIZING ENTEROCOLITIS:

Check «Yes» if the infant had Necrotizing Enterocolitis (NEC) diagnosed at surgery, at post-mortem examination or clinically and radiographically using the following criteria:

A. One or more of the following clinical signs present:

1. Bilious gastric aspirate or emesis
2. Abdominal distension
3. Occult or gross blood in stool (no fissure)

AND

B. One or more of the following radiographic findings present:

1. Pneumatosis intestinalis
2. Hepato-biliary as
3. Pneumoperitoneum

Check «No» if the infant did not satisfy the above definition of NEC

Note: There may be cases in which a surgeon or pathologist classifies an infant who satisfies the above definition of NEC as «focal intestinal perforation» rather than necrotizing enterocolitis. All infants satisfying the above definition of NEC should however be coded as having NEC.

PERIVENTRICULAR-INTRAVENTRICULAR HAEMORRHAGE (PIH) CRANIAL ULTRASOUND DONE ON OR BEFORE DAY 28:

Check «Yes» if at least one cranial ultrasound was performed on or before day 28.

Check «No» if no cranial ultrasound was performed on or before day 28.

If Yes, Enter Worst Grade:

If a cranial ultrasound was performed on or before day 28, enter grade based on criteria below:

Grade 0: No subependymal or intraventricular haemorrhage

Grade 1: Subependymal germinal matrix haemorrhage only

Grade 2: Intraventricular blood, no ventricular dilation

Grade 3: Intraventricular blood, ventricular dilation

Grade 4: Intraparenchymal haemorrhage

If multiple ultrasounds were done on or before day 28 record the most severe grade.

CYSTIC PERIVENTRICULAR LEUKOMALACIA:

Check «Yes» if the infant has evidence of cystic periventricular leukomalacia on a cranial ultrasound obtained at any time

Check «Not applicable» if a cranial ultrasound was never done.

To be considered cystic periventricular leukomalacia there must be multiple small periventricular cysts identified.

Periventricular echogenicity without cysts should not be coded as cystic periventricular leukomalacia.

A porencephalic cyst in the area of previously identified intraparenchymal haemorrhage should not be coded as cystic periventricular leukomalacia.

SEPSIS AND/OR MENINGITIS EARLY (ON OR BEFORE DAY 3):

Note: The date of birth counts as day I regardless of the time of birth. For an infant born at 11:59 PM on September 1, day 3 will be September 3rd.

Check "Yes" if a bacterial pathogen was recovered from blood and/or cerebrospinal fluid culture on or before day 3.

Check "No" if a bacterial pathogen was not recovered from blood and/or cerebrospinal fluid culture on or before day 3.

SEPSIS AND/OR MENINGITIS LATE (AFTER DAY-3)

Check "Yes" if a bacterial pathogen was recovered from blood and/or cerebrospinal fluid culture after day 3.

Check "No" if a bacterial pathogen was not recovered from blood and/or cerebrospinal fluid culture on or before day 3.

DATE OF CULTURE:

Enter the date of the first positive blood and/or cerebrospinal fluid culture

BACTERIAL PATHOGEN:

Enter the name of the bacterial pathogen recovered from and/or cerebrospinal fluid culture.

FUNGAL:

Check «Yes» if a fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample after day 3 of life.

Check «No» if a fungus was not recovered from a blood culture obtained from either a central line or peripheral blood sample after day 3 of life.

WEIGHT

Enter the infant's weight in grams.

The day of birth is "day 0", weight on day 6 is the weight on the 7th day of life.

"6 day" is the weight on the seventh day of life ; enter the following weights every 7 days.

"13 day"= weight at 14 days of life, etc. until "55 day".

DIAGNOSES AND TREATMENTS AFTER 27 DAYS OF LIFE

This section collects information originated only after the 27th day of life. Most of the items definitions for the previous section apply in general for this section except for the time of occurrence.

RESPIRATORY SUPPORT

Check "Yes" if the infant was given supplemental oxygen at anytime after leaving the delivery room.

Check "No" if the infant was never given supplemental oxygen after leaving the delivery room.

NASAL CPAP

Check "Yes" if the infant was given continuous airway pressure applied through the nose at anytime after leaving the delivery room.

Check "No" if the infant was never given continuous airway pressure applied through the nose after leaving the delivery room.

CONVENTIONAL VENTILATION

Check “Yes” if the infant was given intermittent positive airway pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at anytime after leaving the delivery room.

Check “No” if the infant was never given intermittent positive airway pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at anytime after leaving the delivery room.

If it is via nasal prongs is not considered conventional ventilation.

HI-Fi

Check “Yes” if the infant was given high frequency ventilation (IMV rate >240/minute) at anytime after leaving the delivery room.

Check “No” if the infant was never given high frequency ventilation (IMV rate >240/ minute) after leaving the delivery room.

If it is via nasal prongs is not considered HI-FI ventilation.

OXYGEN AT 36 WEEKS OF ADJUSTED GESTATIONAL AGE

Check “Yes” if the infant is in the hospital and receives supplemental oxygen when reaches the adjusted gestational age of 36 weeks.

Check “No “if the infant is in the hospital and does not receive supplemental oxygen when reaches the adjusted gestational age of 36 weeks.

Check “Not applicable” when the infant is not alive in the hospital on the date at which the infant 36 weeks adjusted gestational age, was born after 36 weeks of GA or has not reached 36 weeks of adjusted gestational age, before 28 days of life.

POST NATAL STEROIDS FOR CLD

Check “Yes” if systemic steroids were used after birth to treat or prevent bronchopulmonary dysplasia or chronic lung disease.

Check “No” if systemic steroids were not used after birth. Check “Yes” if systemic steroids were used after birth to treat or prevent bronchopulmonary dysplasia or chronic lung disease.

Inhaled steroids are not considered systemic corticosteroids.

NEONATAL DISEASES AND OTHER TREATMENTS PNEUMOTHORAX:

Check “Yes» If the infant had extrapleural air diagnosed by chest radiograph or needle aspiration (thoracentesis).

Check «No» if the infant did not have extrapleural air as defined above.

For infants who had thoracic surgery and a chest tube was placed at the time of surgery OR if free air was only present on a CXR taken immediately after thoracic surgery and was not treated with a chest tube, check «No».

For infants who had thoracic surgery and then later developed extrapleural air diagnosed by CXR or needle thoracentesis, check «Yes».

PATENT DUCTUS ARTERIOSUS:

Check «Yes» if there was a heart murmur compatible with a patent ductus arteriosus (PDA) and/or Doppler evidence of left-to-right ductal shunting plus two or more of the following:

· bounding peripheral arterial pulses
· hyper dynamic precordial pulsation
· radiographic evidence of cardiomegaly
· pulmonary oedema inability to decrease ventilator settings (pressure, rate, Fi02) after

48 hours from the time of birth. (If one or more of these parameters can be consistently decreased, an infant does not meet this criterion.)

Check «No» if the infant does not satisfy the above definition. This definition is adapted from Bandstra et al Paediatrics 1988, 82:533.

INDOMETHACIN:

Check «Yes» if Indomethacin was administered. The answer to this question may be «yes» even if an infant did not meet the definition of PDA given above.

Check «No» if Indomethacin was not administered.

NECROTIZING ENTEROCOLITIS:

Check «Yes» if the infant had Necrotizing Enterocolitis (NEC) diagnosed at surgery, at post-mortem examination or clinically and radiographically using the following criteria:

A. One or more of the following clinical signs present:

4. Bilious gastric aspirate or emesis
5. Abdominal distension
6. Occult or gross blood in stool (no fissure)

AND

B. One or more of the following radiographic findings present:

4. Pneumatosis intestinalis
5. Hepato-biliary as
6. Pneumoperitoneum

Check «No» if the infant did not satisfy the above definition of NEC

Note: There may be cases in which a surgeon or pathologist classifies an infant who satisfies the above definition of NEC as «focal intestinal perforation» rather than necrotizing enterocolitis. All infants satisfying the above definition of NEC should however be coded as having NEC.

PERIVENTRICULAR-INTRAVENTRICULAR HAEMORRHAGE (PIH)
CRANIAL ULTRASOUND AFTER DAY 27:

Check «Yes» if at least one cranial ultrasound was performed after day 27.

Check «No» if no cranial ultrasound was performed after day 27.

If Yes, Enter Worst Grade:

If a cranial ultrasound was performed after day 27, enter grade based on criteria below:

Grade 0: No subependymal or intraventricular haemorrhage
Grade 1: Subependymal germinal matrix haemorrhage only
Grade 2: Intraventricular blood, no ventricular dilation
Grade 3: Intraventricular blood, ventricular dilation
Grade 4: Intraparenchymal haemorrhage

If multiple ultrasounds were done performed after day 27 record the most severe grade.

CYSTIC PERIVENTRICULAR LEUKOMALACIA:

Check «Yes» if the infant has evidence of cystic periventricular leukomalacia on a cranial ultrasound obtained at any time

Check «Not Applicable» if a cranial ultrasound was never done.

To be considered cystic periventricular leukomalacia there must be multiple small periventricular cysts identified.

Periventricular echogenicity without cysts should not be coded as cystic periventricular leukomalacia.

A porencephalic cyst in the area of previously identified intraparenchymal haemorrhage should not be coded as cystic periventricular leukomalacia.

RETINOPATHY OF PREMATURITY:

Check «No» if an indirect ophthalmologic examination for retinopathy of prematurity (ROP) and was normal.

Check “Yes” if an indirect ophthalmologic examination for retinopathy of prematurity (ROP) and was abnormal.

Check «Not done» if an indirect ophthalmologic examination for ROP was not performed.

SEPSIS AND/OR MENINGITIS LATE (AFTER DAY-3)

Check “Yes” if a bacterial pathogen was recovered from blood and/or cerebrospinal fluid culture after day 27.

Check “No” if a bacterial pathogen was not recovered from blood and/or cerebrospinal fluid culture on or before day 27.

DATE OF CULTURE:

Enter the date of the first positive blood and/or cerebrospinal fluid culture

BACTERIAL PATHOGEN:

Enter the name of the bacterial pathogen recovered from and/or cerebrospinal fluid culture.

FUNGAL:

Check «Yes» if a fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample after day 27 of life.

Check «No» if a fungus was not recovered from a blood culture obtained from either a central line or peripheral blood sample after day 27 of life.

WEIGHT

Enter the infant’s weight in grams.

The day of birth is “day 0”, weight on day 6 is the weight on the 7th day of life.

“6 day” is the weight on the seventh day of life ; enter the following weights every 7 days.

“13 day”= weight at 14 days of life, etc. until “55 day”.

NEONATAL OUTCOMES (BACK OF THE NEONATAL HOSPITALIZATION FORM)
DIAGNOSES DURING HOSPITALIZATION

The list of diagnoses provides at the right of each disease the ICD 10 code and at the left a code for filling in the forms. The two digit codes are for no congenital anomalies and the three digit codes on a separate list are for congenital anomalies.

Enter all the diagnoses for each neonate with their respective code and write the diagnosis with block letters.

RESPIRATORY SUPPORT SUMMARY
DURATION OF ENDOTRACHEAL INTUBATION

Enter the total number of days that the infant was intubated after the delivery room. Add every period of time that the infant was intubated independently if was mechanically ventilated.

DURATION OF THE NASAL CPAP

Enter the total number of days the infant was in Nasal CPAP. Add every period of time that the infant was on Nasal CPAP independently if was mechanically ventilated.

SURGERY

Check “No” if the infant had no surgery during hospitalization.

Check “NEC” if the infant had surgery for NEC.

Check “PDA” if the infant had Ductal Ligation

Check “Other” if the infant had other surgery except for venous cut-down, inguinal hernia or thoracentesis for PNEUMOTHORAX.

BLOOD TRANSFUSIONS

Enter the number of Packed Red Cells , Plasma or other blood products transfused to the infant before death or discharge home.

FEEDING DURING HOSPITALIZATION

DURATION OF PARENTERAL NUTRITION

Enter the total number of days that the infant received any Parenteral Nutrition (with lipids and or amino acids).

AGE AT START OF ENTERAL FEEDINGS

Enter the first day that enteral feeds were started and maintained for more than 48 hours.

AGE AT WEANING FROM TUBAL FEEDINGS

Enter the age at which full oral feedings (bottle or breast) were achieved without any tube feeding.

GROWTH DURING HOSPITALIZATION LOWEST WEIGHT

Enter the lowest weight since birth and before death or discharge.

AGE AT LOWEST WEIGHT

Enter the age at which the lowest weight occurred.

AGE AT RECOVERY OF BIRTH WEIGHT

Enter the age at which for the first time during hospitalization birth weight was recovered.

WEIGHT AT 36 WEEKS OF ADJUSTED GESTATIONAL AGE

Enter the weight at 36 weeks 0 day of adjusted gestational age if the infant has not yet been discharged from the hospital.

WEIGHT AT 40 WEEKS OF ADJUSTED GESTATIONAL AGE

Enter the weight at 40 weeks 0 day of adjusted gestational age if the infant has not yet been discharged from the hospital.

CONDITIONS AT DISCHARGE

WEIGHT

Enter the weight at discharge in grams

LENGTH

Enter length at discharge in centimetres

CRANIAL PERIMETER
Enter cranial perimeter at discharge in centimetres

AGE
Enter postnatal age at discharge in days.

ADJUSTED GESTATIONAL AGE
Enter adjusted gestational age at discharge in weeks and days.

DATE AND TIME OF DISCHARGE
Enter date and time in hours and minutes at discharge.

CONDITION AT DISCHARGE
Check “Healthy” when infant is discharged home without any obvious chronic disease
Check “Ill” when is discharged with a chronic disease.
Check “Referral” when infant is transferred to another hospital.
Check “Dead” when infant died during hospitalization or in the delivery room.

FEEDING AT DISCHARGE
Check “Exclusive Breast milk” when infant has not received other milk than human milk during the last 24 hours before discharge alive.
Check “Partial” when infant has received human milk and other milk during the last 24 hours before discharge alive.
Check “Artificial” when infant has not received any human milk during the last 24 hours before discharge alive.

REFERRAL TO
Enter the name of the institution where the infant is referred when is not discharged home.

AUTOPSY
Check “Not applicable” if infant is discharged alive.
Check “Yes” if the autopsy has been performed.
Check “No” if no autopsy is available.

NOTES
PERSON RESPONSIBLE FOR DISCHARGE
Enter name, signature and code of person responsible for discharge of the infant.

Neonatal Care Daily Chart

The Neonatal Care Daily Flow Chart is a form that organizes all the relevant information that nurses and doctors need to register during the care of a hospitalized neonate. At admission and every following day until discharge a form is filled out.

The form stays by the neonate's site (incubator or crib) and after being completed and replaced it is filed with the other forms of the Neonatal Clinical Record.

Its modules cover NEONATAL GENERAL DATA, VITAL CONTROL, BALANCE DATA, IN PUTS AND OUTPUTS, RESPIRATORY CARE, and SPECIAL NOTES: MEDICATION GIVEN, LAB EXAMS, NURSING NOTES, MEDICAL PRESCRIPTIONS AND FEEDING INDICATIONS.

GENERAL DATA

The items are filled in with a check for coded variables in the small square boxes, digits in the rectangular boxes and acronyms or abbreviations in the open boxes.

BED OR PLACE IN THE UNIT:

For those units that have # for each patient site, enter the number assigned to the place.

LEVEL OF CARE:

Check «intensive» «intermediate» «minimal» according to national standards.

INCUBATOR OR CRIB:

Check «incubator» «open bed»or «crib» according to the place where the infant is put on admission and where stays at the first control each day.

PHOTOTHERAPY:

Check «Yes» if the infant receives any phototherapy during any time of the day.

Check «No» if the infant did not receive any phototherapy during the day.

MONITORS:

Check which monitors the infant had at the first control of the day.

NAME:

Enter Full Name of the infant according to the one assigned by the parents or the institution at the time of admission and is the one used in the administrative process in the hospital.

CLINICAL RECORD

Enter this # according to hospital codes.

CURRENT DIAGNOSES AND TREATMENTS:

Enter the active diagnoses and treatments each day.

CONFIRMED SEPSIS IN TREATMENT

Check «Yes» if the infant is being treated for confirmed sepsis. Check «No» if the infant is not being treated for confirmed sepsis.

BACTERIAL PATHOGEN:

Check «yes» if a bacterial pathogen was recovered from blood or spinal fluid. Enter the name of the bacterial pathogen recovered. Check «No» if a bacterial pathogen was not recovered.

FUNGAL SEPSIS:

Check «Yes» if a fungal infection was confirmed by culture. Check «No» if a fungal infection was not confirmed by culture.

DATE:

Enter the current day, month and year.

AGE:

Enter the age in days of the neonate.

ADJUSTED GESTATIONAL AGE:

Enter each day the adjusted gestational age in weeks and days.

LENGTH OF HOSPITALIZATION:

Enter the time in days since admission.

TODAY'S WEIGHT:

Enter the weight in grams each day.

24 PREVIOUS HOURS

MATERNAL MILK COLLECTED:

Enter the total amount of mother's milk collected the previous day.

Neonatal Care Daily Chart (Front)

Neonatal Care Daily Chart (back)

TIME

PRESCRIPTIONS GIVEN

WRITE DRUG, DOSE AND ROUTE

VOLUME ml

RESPIRATORY CARE

ETT / Nasal / Hood / Secretions Amount and type

PIP PEEP CPAP MAP

RR IT

FiO_2

SaO_2

WRITE RESULTS

LAB, EXAMS, IMAGES & CONSULTATIONS

ORDERER (O) IN PROCES (P) RECEIVED (R)

NURSING NOTES

SPECIAL NURSING CARE

MEDICAL PRESCRIPTIONS

This color means ALERT

FENENRVP-06/02

DAILY WEIGHT VARIATION:

Enter the difference in grams from previous day weight. Enter a + or - sign according to the direction of the change. If the observed variation was in the correct direction enter the + or - sign in the white box if the observed variation was unexpected enter the sign in the yellow box.

FLUID BALANCE:

Enter + or - indicating the difference between INPUTs and OUTPUTs. Enter the volume in ml.

CALORIC INTAKE:

Enter the total amount of calories per Kg received in the previous 24 hours.

FLOW CHART

This module is a table with columns corresponding to each planned control of the infant. According to the level of care the number of columns needed for recording all pertinent data may vary. Each form has room for 12 controls and if more are needed a second form should be used for that day.

TIME OF PLANNED CARE

At the top of each column enter the time when the nurse starts the planned observation and/or procedures.

PERSON IN CHARGE:

Enter the initials of the person in charge of each control.

PARTICIPATING MOTHER/MILK COLLECTED

Check «Yes» if the mother was with the neonate any time since the last control. Check «No» if the mother did not visit the infant since last control.

Enter the amount of milk collected by the mother since last control (in ml).

THERMAL PROTECTION/POSITION

Enter the predefined initials of the observed garments o thermal protections the infant has on. (Hat, mittens, shirt, plastic sheet, etc.)

Enter the initials of the position in which the baby was found at the start of the control.

VITAL CONTROLS

When the observed variable is out of the normal or expected range check the yellow area of the box.

STATE OF THE NEONATE:

Enter the initials to define if the infant is Asleep, Calm alert, Active alert, Crying, with discomfort or pain.

INFANT'S TEMPERATURE/INCUBATOR'S TEMPERATURE

Enter the Axillary temperature in Celsius.

Enter the Incubator's temperature in Celsius.

RESPIRATORY RATE/PERIODIC BREATHING AND APNEAS

Enter the observed Respiratory Rate

Enter the initials of Periodic Breathing and the Number of Apneic Episodes since previous control.

HEART RATE / BLOOD PRESSURE

Enter HR in bpm and Blood Pressure in mmHg.

COLOUR/ CAPILLARY REFILL

Enter the colour of the infant.

Enter in seconds the time to refill the capillary bed after compression.

LOSSES

In the first perpendicular column enter the total volume of each of the following losses in the previous 24 hours.

BLOOD DRAWN:

Enter the volume (ml) of blood drawn for lab exams.

DIURESIS:

Enter the volume of urine measured in a bag or by double weighing of the diapers since last control.

STOOLS:

Enter the number and characteristics of the bowel movements since last control.

GASTRIC ASPIRATE/VOMITS:

Enter the volume of gastric aspirate if applicable/ Enter the number of vomits since last control.

ENTERAL INTAKE

In the first perpendicular column enter the total volume of oral intake in the previous 24 hours.

TYPE AND VOLUME:

Enter the type of fluid intake (breast milk, special formula, etc)

Enter the volume of intake at each control and the cumulative since first control.

METHOD:

Enter the method Tube, Breast feeding, Bottle, Continuous drip.

PARENTERAL INTAKE

CENTRAL LINE/PERIPHERAL IV

Enter the initials of the iv route for parenteral inputs.

There are 4 rows available to enter different solutions. Enter the solution and the volume administered since last control and the cumulative value received by the infant.

The total volume received in the 24 hours previous to the first control is entered in the first column.

REVERSE SIDE OF THE FORM

TIME OF PLANNED CARE:

Enter same time that in the corresponding column in the front side of the form.

MEDICATION GIVEN:

Enter medication given at each control, dose, via and volume administered in ml.

RESPIRATORY CARE

ET/NASAL/HOOD/SECRETIONS

Enter the initials of the type of respiratory device Endotracheal tube (ET) Nasal Prongs (Nasal CPAP) OxyHood

Enter the characteristics and quantity of upper respiratory secretions.

PIP/CPAP/MAP/ IMVRate/INS TIME

Enter the values of each of the parameters of the ventilator in a standard order, at each control.

F_iO_2/ SaO_2

Enter the values of Inspired Fraction of Oxygen and Oxygen Saturation by pulse oxymetry at each control.

SPECIAL NOTES

LABORATORY EXAMS AND OTHER DIAGNOSTIC TESTS

Enter the initials for the exam required and check when the result is received. Enter the results of the exam in the corresponding row.

ADDITIONAL NURSING OBSERVATIONS

Each nursing shift may write additional observations to those already recorded in the coded format. A vertical line may separate the notes of each nursing shift coinciding with the columns of the controls filled in by the same person.

NURSING CARE SPECIFICATIONS

Enter specific indications of nursing care of the neonate that should be followed in addition to medical prescriptions.

MEDICAL PRESCRIPTIONS

Enter all medical prescriptions including medications, parenteral fluids and nutrients, enteral nutrients, etc.

If additional space is needed a second form can be used.

System Installation, Maternity Set Up, Data Record and Analysis

Installation y configuration

SIP installation in your computer is an automatic process which begins when you insert the SIP disk into your CD drive. After installation, SIP must be configured for operation, following the steps included in the SET UP menu.

Go to "SET UP" from the main menu to specify the place you are working at. This will allow to have a tag for all clinical records avoiding confusion in a global environment.

1. Define the location of the institution you are working at. In "Geographical Location" the operator specifies the Country, the Province or State and County of the Maternity Hospital. SIP confirms the recording of these names into the location data files.

2. Define the Maternity Hospital. In "SET UP" select "HOSPITAL" to enter data on the Maternity Hospital. Next to the Maternity Code there is a box, which has to be marked in order to have the Maternity name as a label in all reports and screen with results. In case more than one Hospital is entered, the label must be specified in the "OPTIONS" screen, described below.

3. Antenatal Clinics and Referrals from. Define in much the same way as the Maternity Hospital, all the outpatient clinics where the pregnant women go for their antenatal visits.

4. Options. The SIP programme allows the operator to select the set of variables to be entered in the Maternity Hospital. The operator can choose to select all the variables of the Perinatal record or a subset of them. The inclusion of Neonatal Hospitalization is optional. The number of decimal figures is also set here. To have a label on reports and screens is an additional option and the text should be specified here: remember it may be changed at any time later.

5. Language. Define the language in use.

Once this information has been entered by the user, then SIP software allows both data entry and analysis. This is so because SIP does not allow entering any clinical information without knowing first where the data come from.

Data Record

CLINICAL RECORD ENTRY

The ideal person to do this activity is the physician who attended the birth or the physician in charge of discharging the patient. However, the staff in charge of filing medical records can do this duty. This moment is very important because the operator can concentrate in the case and think about all the variables, in doing this the missing data on the forms will stand out.

To entry the data in the program the operator clicks “CLINICAL RECORD” and then “Perinatal”. Data is organized in different chapters, one for each part of the PCR: name & address, patient, pregnancy, delivery, maternal pathologies, and neonate.

Clinical records are filed in the data files of the hard disk in the same order they are entered. However it is not necessary to enter them in strict chronological order. It can be useful nevertheless to do the entry after each maternal discharge. SIP software asks the operator for the variables values of the different sections, generally in the same order as they appear in the PCR to ease data entry.

The programme ensures that the entered data lies within the limits set for each variable. On entering a value that falls outside the variable range the program will display an error message and allowed the data to be modified. If any data is missing, the operator can add it later accessing again to the Perinatal Clinical Record. After all the variable data has been entered select “Apply” to store all the information.

SUMMARY (Letter of discharge)

After the data is entered the operator can obtain a detailed letter of discharge of the perinatal record. To do this access to Clinical Record by number or any other variable (e.g. N° 2.456.598) and click “Find a Record”. Once the data has been brought to screen, click “Summary” for a full text version of the clinical record (HTML format). Then print the summary that can be used as a reference document or to be incorporated into the patient history files.

Access to “SET UP - OPTIONS” and mark the option “only essential data in the letter of discharge”, click “Accept” and close the window. Access again to the Perinatal Clinical Record N° 2.456.598 and now examine the Letter of discharge. You will see that the verbose Letter of discharge has now changed to a brief text specifying only identification and abnormal results, omitting all normal values. After that go to “SET UP - OPTIONS” and select again summary complete option.

MODIFY RECORDS

The SIP programme allows the operator to modify or add any missing data. To do this access to “Clinical Record - Perinatal” and then write the patient history number and select “find a record”. Automatically the program will display it on screen. In case the operator does not remember the number, write any variable value, for example, birth weight=1505 g, and select “find a record”. The programme will display a table with all the cases with this birth weight. If you do a double click on the desired history the programme brings all the data to screen. As an example, select all the records with mother age 20 and access them one at a time.

DELETE RECORDS

Use this to delete a record or a group of records. The deleted records will be those specified by a given condition. The condition is selected in “Selection” where the operator can choose to select by places, dates or by variables. After that go to “Administration” and then “Delete records on file”, click this option and a window will show the user the details of the records to delete: in case the user agrees, click “Accept” and the records will be permanently erased from file.

There is another way to delete a record, the operator can go to “Clinical Record” and then to “Perinatal” to specify a condition in any variable so as to search for a given record. Click “Find a record” and then the program will display all the records with the condition selected. For example all neonates with birth weight of 3500 g or record number 123456789. Once the record is on screen, click “Delete” and the record will be deleted.

RECORD BACKUP

It is necessary to backup the data in a periodic and frequent way.

The backup is made with the option “Backup” that is selected from “Administration”, “Backup”. At this point the operator can select the database to backup and the target folder or disk unit. Remember that this Back Up facility includes all patient names and addresses that are highly confidential. There is a safer way to send clinical data to a central merging facility for statistical purposes described under “Send by internet”.

MODIFYING A RECORD

To modify or to look at a record select “Clinical Record” in the main SIP screen, then choose “Perinatal” and write the patient record number or name, then click “Find a Record”. The program will display the record which can be modified. To save the modified data select “apply”.

NEONATAL RECORD ENTRY

Get into “SET UP” “OPTIONS” to specify that the neonatal hospitalisation data will be included. Get into “Clinical Record” and then “Neonatal Hospitalization” to record the data. After filling the form select “Summary” to see the details in a text format. Comment about the use of this document.

Data Analysis

The Menu allows the operator to perform analysis of data.

Completeness control is a program to evaluate the filling of the clinical records as a whole. Important variables are listed separately to see whether mortality statistics are reliable.

1. Report generator. This program is a general purpose utility that groups a number of indicators according to a special interest such as maternal morbidity, basic epidemiological indicators or immunization. The options are:

    1. Description of the population. This program list the risk factors prevalence for an adverse perinatal outcome, that have a risk score associated with the burden or risk of the population associated with an adverse outcome. The operator can compare the risk in the assisted population with a low and a high risk population.

    2. Basic Indicators. The program displays 10 basic indicators taken from the database selected: Perinatal Mortality, caesarean section, and low birth weight are a few of them.

    3. Choose any indicators. With this programme the operator can choose a group of

indicators from a long list. For example it would be of interest to display in the same table the percentage of smoking mothers, the very low birth weight neonates and the absence of antenatal visits.

4. FIGO indicators. These indicators give a summary of the perinatal situation from basic information about each birth.

5. Rubella indicators. This programme shows the rates of rubella immunisation per age, it also shows the current tetanus toxoid immunisation rates.

6. Maternal Mortality indicators. The indicators shown in this section are those which can act on the maternal mortality studies, through pathologies and principal risk factors.

2. Indicators and Interventions. The interventions like caesarean section, episiotomy, person in charge of delivery, use of analgesics according to reproductive risk, are analysed. The risk level it is the same as the one use in Description of the Population.

3. Birth weight and outcome. This interactive table shows specific mortality rates according to time of death and birth weight. It is shown a double entry table displayed either in number of cases or rates of specific mortality. The mortality in the population may be compared with a reference population, from the same country or another; or with the low risk part of the population.

4. Geography of an indicator. The SIP programme merges databases from different maternities, each with its institutional record and geographical details (country, province, and state). The SIP programme calculates the indicators in a stratified way according of the administrative division (province, state, county). The programme calculates and uses Epi Map to display the result as a map. This programme may be useful by the Health Ministry in order to concentrate all databases from Maternity Hospitals of a given Country or region.

5. Trends of an indicator. Choose an indicator and a time variable and the programme displays a graph with the indicator trends in this period of time selected.

6. Data analysis with Epi Info 2000. This is possible because the SIP format of the data base is the same as the Epi Info 2000 data base.

Description of the Population: burden of problems

The user of SIP can characterise the population that seeks care at the Maternity by analysing its risk factors. The prevalence of the risk factors is evaluated for an adverse perinatal outcome. For each risk factor SIP shows the importance, the prevalence and the contribution to the total risk of the assisted population. The global score obtained can be taken as indication of the problem load faced by the health institution when caring for the population been evaluated.

The risk level of the assisted population is studied in relation to the risk factors of Table 2.

Table 2 - Risk factors evaluated in the population

Score	Risks Factors	Score	Risks Factors
1	Smoking	4	Isoimmunization
2	Maternal Age 35+	1	Previous Abortion
1	No previous gestation	2	Previous LBW
2	Previous gestation >=4	4	Previous Foetal Death
1	Mother alone	3	Previous Neonatal Death
2	Education None	1	BMI >29
1	Elementary Education	4	Chronic Hypertension
4	No prenatal visits	3	Diabetes
1	Maternal Age 10 to 14	4	VDRL+
4	Inter Birth interval <6 months	2	Antenatal Visits 1-4

The risk factors were deduced from the analysis of a SIP database of over one million and a half deliveries of 20 Countries of Latin America and the Caribbean, with a predominance of the Southern Cone countries.

We assigned to each risk factor a score between of 1 to 4 and called it its importance or “weight” to show the association between the factor and an adverse perinatal result (higher score level, higher is the probability of an adverse perinatal result). The “global risk score” or total importance is the sum of the products of the risk factor incidence (for example percentage of mothers under 15) and its weight.

To get a Description of the Population report, follow these steps:

- Select Analysis
- Select Report Generator
- Select Description of the Population

This report is but one of a series of special reports, such as Rubella, Basic indicators and others, described elsewhere in this manual. The user may order the risk factors in several ways

- by a predefined order
- by the importance of the risk factors
- by the weighted importance of the factors (Total importance)
- by the rate of missing data for each factor
- by the number of cases at risk

If “importance” is selected, they will be ordered by the weight assigned to each factor, regardless of their prevalence in the population under analysis. On the other hand if the first line is ordered by “total importance” it shows the factors that highly contribute to the adverse outcomes.

The operator may in addition alternate between three different ways of seeing the results:

- Rates
- Rates and cases
- Lack of information

SISTEMA INFORMATICO PERINATAL - Versión 1.24 - 7/07/2003
Hospital de Prueba - ARGENTINA
Descripción de la población

Selección por fecha: **Parto** fecha del parto entre 1/1/2002 y 12/31/2002;
5582 nacimientos
Población típica de bajo riesgo (baja carga de problemas): 180 puntos
Carga de problemas de esta población:: 339
Población típica de alto riesgo (alta carga de problemas): 650 puntos

Indicador	Cantidad	Tasa	Indicador	Cantidad	Tasa
Consultas prenatales 1-4	2,305	41.3	BPN previo	109	3.2
Sin consulta prenatal	937	16.8	Educación elemental	267	4.8
Gestas >=4	1,096	19.6	Educación ninguna	132	2.4
Gestas cero	1,500	26.9	IMC >29	212	3.8
Madre sin pareja	1,495	26.8	HTA crónica	44	0.8
Aborto previo	806	22.0	VDRL+	31	0.6
Edad materna 35 y más	486	8.7	Edad materna 10 a 14	58	1.0
Muerte fetal previa	122	3.3	Diabéticas	15	0.3
Muerte neonatal previa	84	2.5	Intervalo intergenésico corto (<6m)	6	0.2
Habito de fumar	361	6.5	Isoinmunización	2	0.0

Figure 1 *risk factors ordered according to their “weight”. In the “quantity” columns it shows the number of cases for each factor. In the “rate” column it shows the percentages of each factor.*

The importance of each risk factor detected in the population depends on the quality of data in particular not having missing information. In order to confirm the quality of data, the option “lack of information” indicates beside every factor the percentage of missing information, in order to have reliable results. For example a factor as “Hypertension”, which has a weight of 4, can result in a very low importance due to a prevalence of 0,02% since the measure of arterial tension (low or high) was omitted in 80% of the pregnant women. As a result, although the importance is low, the decision-maker has to consider the lack of data in 80% of the cases before concluding that “Hypertension” is not an important factor for adverse perinatal outcomes in the population.

A measure of risk is useful to the extent that it can be compared with reference values. In the report "Description of the Population" there are three columns whose highlights are proportional to three values of global risk of the three populations:

1. A very low risk Latin American population
2. The study population
3. A high risk Latin American population

In order to know the risk level of a population, the figure obtained is compared with two references, one of low problem load and one of very high problem load.

The risk of an adverse outcome was studied in a random sample of 50,000 cases of the SIP database (20 Countries, 1.8 million births. The risk factors were analyzed for four adverse perinatal outcomes: low birth weight, preterm, foetal death, and neonatal death.

Table 3 shows the relative risk (RR) of each factor for each adverse perinatal outcome. A score of between 1 and 4 is associated to the different values of RR according to the following:

RR	Score
1.00 - 1.49	**1**
1.50 - 1.74	**2**
1.75 - 2.00	**3**
> 2.00	**4**

The score of each factor multiplied by its prevalence gives a measure of the contribution to the risk factor of a population. The score of all factors can be added in a global score. Although these score derived from the analysis of each variable separately, this method was selected by its simplicity of interpretation.

Each mother may accumulate a risk score of one or more factors, and thus the distribution of the mothers according to their risk score allows to create categories. Cut off points were identified for the centiles in the score of the total risk, as a result a low score, smaller or equal to 1 is considered "low risk", a score between 2 and 6 is considered "average risk " and a score of 6 or greater is considered "high risk."

Table I - Relative risk of a number of Risk Factors for four adverse outcomes: Low Birth Weight (LBW), Preterm, Foetal Death and Early Neonatal Deaths.

Factor	LBW	Preterm pretérmino	Foetal Death	Early Neonatal Deaths
Age (yr)				
<15	1.72 (1.28-2.30)	1.85 (1.42-2.42)	1.03 (0.43-2.46)	2.10 (1.00-4.39)
15-19	1.31 (1.22-1.41)	1.28 (1.19-1.37)	0.95 (0.79-1.14)	1.13 (0.91-1.40)
20-34	1.00	1.00	1.00	1.00
³35	1.41 (1.28 - 1.54)	1.36 (1.25-1.49)	1.89 (1.58-2.27)	1.60 (1.26-2.03)
Parity				
0	1.31 (1.21-1.42)	1.17 (1.08-1.27)	1.12 (0.91-1.37)	1.24 (0.97-1.60)
1	1.00	1.00	1.00	1.00
2	1.08 (0.97-1.20)	1.05 (0.95-1.17)	1.16 (0.91-1.47)	1.25 (0.93-1.69)
3	1.11 (0.98-1.26)	1.16 (1.03-1.31)	1.23 (0.93-1.63)	1.29 (0.91-1.84)
³4	1.19 (1.07-1.32)	1.36 (1.23-1.50)	1.90 (1.52-2.38)	1.53 (1.13-2.07)
Marital status				
Married	1.00	1.00	1.00	1.00
Unmarried	1.28 (1.19-1.37)	1.25 (1.16-1.33)	1.28 (1.09-1.51)	1.36(1.12-1.66)
Education				
None	1.43 (1.23-1.65)	1.19 (1.03-1.38)	1.77 (1.31-2.38)	1.85 (1.31-2.61)
Elementary	1.26 (1.18-1.34)	1.20 (1.13-1.27)	1.28 (1.10-1.49)	1.17 (0.98-1.40)
Second/Univ	1.00	1.00	1.00	1.00
Previous Abortion				
No	1.00	1.00	1.00	1.00
Yes	1.13 (1.05-1.21)	1.09 (1.01-1.17)	1.46 (1.25-1.71)	1.40 (1.15-1.70)
Previous LBW				
No	1.00	1.00	1.00	1.00
Yes	1.96 (1.76-2.18)	1.71 (1.54-1.91)	1.75 (1.35-2.26)	1.64 (1.18-2.27)
Previous fetal death				
No	1.00	1.00	1.00	1.00
Yes	1.36 (1.15-1.60)	1.40 (1.20-1.64)	2.84 (2.17-3.71)	2.56 (1.81-3.62)
Previous early neonatal Death				
No	1.00	1.00	1.00	1.00
Yes	1.64 (1.40-1.93)	1.69 (1.45-1.96)	1.96 (1.40-2.75)	1.87 (1.22-2.88)
Maternal weight (kg)				
<55.1	1.60 (1.39-1.86)	1.44 (1.25-1.65)	1.32 (0.84-2.08)	2.06 (1.21-3.50)
55.1 - 61	1.00	1.00	1.00	1.00
61.1 - 69				
Maternal Height (cm)				
<152	1.59 (1.43-1.77)	1.21 (1.10-1.34)	1.35 (1.05-1.73)	1.36 (1.01-1.84)
153 - 157	1.31 (1.17-1.47)	1.08 (0.98-1.20)	1.03 (0.79-1.34)	1.17(0.86-1.60)
158 - 161	1.20 (1.07-1.35)	1.06 (0.95-1.17)	1.16 (0.88-1.52)	1.17 (0.85-1.63)
>161	1.00	1.00	1.00	1.00
Body Mass Index (kg/m2)				
<19.8	1.44 (1.18-1.77)	1.26 (1.04-1.54)	0.92 (0.69-1.21)	0.95(0.41-2.21)
19.8 - 26.0	1.00	1.00	1.00	1.00
26.1 - 29.0				
>29.0			1.29 (0.94-1.76)	
Smoking				
No	1.00	1.00	1.00	1.00
Yes	1.23 (1.08-1.41)	1.18 (1.04-1.34)	0.57 (0.33-0.97)	0.77 (0.53-1.12)
Diabetes mellitus				
No	1.00	1.00	1.00	1.00
Yes	1.12 (0.78-1.62)	1.74 (1.32-2.29)	1.94 (1.01-3.70)	1.95 (0.88-4.32)
Chronic hypertension				
No	1.00	1.00	1.00	1.00
Yes	2.12 (1.77-2.53)	2.16 (1.83-2.54)	2.70 (1.85-3.93)	1.60 (0.88-2.89)
Number of prenatal visits				
0	2.37 (2.19-2.57)	2.44 (2.25-2.75)	4.88 (4.05-5.95)	4.85 (3.76-6.25)
1-4	1.90 (1.76-2.05)	2.26 (2.09-2.43)	2.48 (2.02-3.04)	3.03(2.36-3.90)
³5	1.00	1.00	1.00	1.00
Interpregnancy interval				
<6 months	2.56 (2.11-3.12)	2.47 (2.02-3.01)	3.32 (2.10-5.25)	3.35 (1.84-6.11)
18-23 months	1.00	1.00	1.00	1.00

Report Generator

The Report Generator lists a number of indicators deduced from the SIP database under study. An indicator is obtained by applying an operation on all (or a selection) of clinical records. Looking at indicators is one of the tools available to look at the perinatal situation of a Maternity Hospital or of a Region.

The indicators may be chosen one by one by the user or asked for in pre-defined groups, such as the following:

- 10 basic indicators
- Report of indicators to election
- FIGO Indicators
- Rubella Indicators
- Maternal Morbidity and Mortality
- Neonatal Intensive Care Indicators

Select of the main menu «Analysis», then «Report Generator», where a screen will appear to the left of the screen in which to select one type of menu and details as to the order and content of each indicator.

To evaluate the quality of an indicator, SIP optionally shows the number of cases left blank and the missing value rate that were found while calculating the indicator. An indicator of mortality with 10% missing values has little credit in the mind of the decision maker, whereas a 0% missing value rate guarantees a good indicator.

Basic indicators

The 10 basic indicators calculated on the database are the following:

- Live newborn: this indicator reflects the number of live newborn of the institution in the specified period. Every product that shows signs of life at birth, regardless of its weight is understood by live Newborn. This indicator is used as denominator in the rates referred to neonatal mortalities for which it is limited to the live RN of over 500 grams.

- Newborn of Low Birth weight (LBW): This indicator reflects the births, with birth weight less than 2500 grams in the specified period. The birth weigh is the first weight obtained after the birth of the foetus or newborn.

- Number of newborn babies of very low birth weight (VLBW): This indicator reflects the births, with birth weight less than 1500 grams in the specified period. The birth weight is to the first weight obtained after the birth of the foetus or newborn

- Preterm New Born Babies: This indicator reflects the number of births in the specified period with gestational age less than 37 complete weeks (less than 259 days). The duration of the gestational age is measured since the first day of the last menstrual period.

- Small Newborn for the Gestational Age: This indicator reflects the number of births of the institution in the specified period, with birth weight smaller than the centile 10 for its gestational age according to a reference standard. The duration of the gestational age is measured since the first day of the last menstrual period.

- Caesarean sections: The number of caesarean sections in the specified period.

- Foetal death rate: This indicator reflects the number of foetal deaths on the total of births which are live or dead of over 500 grams; expressed by 1000 born.

- Early neonatal mortality: This indicator reflects the number of neonatal deaths on the first 7 days of life on the total of live births; expressed by 1000 born

- Perinatal mortality: This indicator reflects the number of foetal and neonatal deaths on the first 7 days of life on the total of born expressed by 1000 live- and stillbirths. The perinatal mortality is the ratio of the deaths of foetuses of minimum weight 500 grams or over 22 weeks plus the number of early neonatal deaths (before 7 days), divided by the total of live- and stillbirths. This perinatal mortality is known as Perinatal Mortality III, in opposition to Mortality II (20 weeks to 28 days) and Mortality I (28 weeks or 1000g until 7 days of neonatal life).

Maternal mortality rate: This indicator reflects the number of maternal deaths divided by the number of live births, expressed by 100 000 births. A maternal death is the death of a woman during pregnancy or on any of the following 42 days, regardless of the duration or localization of the gestation, due to pregnancy related causes, but excluding accidental causes. The maternal deaths in SIP are usually limited to the time the clinical record is available at the Maternity Hospital and therefore does not include the deaths that occur outside the perinatal area. Special provision should be taken to include this type of follow up information in order to have meaningful statistics for decision making.

The Report may have the appearance of Figure F.1 (rates and cases), but the operator may order the indicators according to the number of cases, the rate of missing information or the pre defined order.

Figo indicators

The FIGO indicators reflect the concern of FIGO to standardize basic quality of care evaluation in settings with little recording capacity. They are based on a limited set of very few variables, all included in the SIP list of variables. The FIGO indicators are the following:

C.L.A.P. (PAHO/WHO)
Latin American Centre for Perinatology and Human Development
Pan American Health Organization, World Health Organization
PERINATAL INFORMATION SYSTEM - Version 1.23 - 18/06/2003
Hospital de prueba - Montevideo - URUGUAY
Basic Indicators

Records: 4527 pregnancies

Indicator	Number of cases	Rate
Preterm Babies (%)	516	11.5
LBW (%)	441	9.9
Small for Gestational Age (%)	433	9.7
VLBW (%)	104	2.3
Perinatal Mortality (per thousand)	56	12.4
Fetal Mortality (per thousand)	32	7.1
Early Neonatal Mortality (per thousand)	19	4.2
Hospital Maternal Mortality (per 100.000)	4	89.5
Live Newborn Babies	4,471	-.-
Cesarean (%)	1,178	26.0

Figure F.1 10 *BASIC INDICATORS: the user has selected here to see «RATES AND CASES» and has chosen to order them by «Missing value rates», which are not shown.*

Live Newborn Babies
Maternal age 10 to 14
Maternal age 35 +
Education < 4 years
Parity >=4
Nulliparity
No Antenatal visits
Birth by unqualified attendant
Caesarean Section (%)
Referrals from other level of care
Hospitalized New Born
Fetal death during pregnancy
Fetal Death during labour
Neonatal Mortality (per thousand)
LBW (%) Low Birth Weight
Preterm Babies (%)
Congenital Defects of New born
Multiple Pregnancies
Hospital Maternal Mortality (per 100.000)

As usual for all reports, the user may choose the columns to display (only rates, Rates and cases or include Missing data rates).

C.L.A.P. (PAHO/WHO)
Latin American Centre for Perinatology and Human Development

Family and Community Health (FCH)-Pan American Health Organization / World Health Organization

PERINATAL INFORMATION SYSTEM - Version 1.26 - 13/10/2003
Consolidado - Buenos Aires
FIGO Indicators

Selection by dates: Delivery dates from 2/21/2000 to 8/1/2003:
5847 births

Indicator	Number of cases	Rate	no data	n/d %
Live Newborn Babies	5533	-.-	103	-.-
Mat. Age 10 to 14	5	0.09	353	6.04
Mat. Age 35 +	839	14.35	353	6.04
Education < 4 years	131	2.24	2944	50.35
Parity >=4	224	3.83	685	11.72
Nulliparity	2076	35.51	685	11.72
No Antenatal visits	413	7.06	332	5.68
Birth by unqualified attendant	35	0.62	161	2.75
Caesarean (%)	1383	23.65	76	1.30
Referrals from other level of care	54	0.96	127	2.26
Hospitalized New Born	106	1.92	2905	52.50
Fetal death during pregnancy	55	0.98	103	1.76
Fetal Death during labour	5	0.09	103	1.76
Neonatal Mortality (per thousand)	18	3.25	1028	18.58
LBW (%)	339	6.13	47	0.85
Preterm Babies (%)	422	7.63	124	2.24
Cong.Defects of New born	22	0.39	1129	20.08
Multiple Pregnancies	77	1.32	3457	59.12
Hospital Maternal Mortality (per 100.000)	0	0.00	52	0.89

Figure F.2 *FIGO Indicators (rates).*

Report generator

The user may freely choose any set of indicators from hundreds of indicators prepared by SIP. The resulting report, limited at 20 indicators for practicity, is an original set of indicators that may answer the specific questions of the decision maker on the database. To select more than one indicator, keep the CTRL key pressed as you select indicators.

Rubella immunization

The situation of immunization of rubella is presented in this report with rates of vaccination by age group, the prevalence of rubella in pregnant women and the Congenital

Rubella Syndrome (CRS) in neonates. The percentage of valid tetanus vaccination is also shown. The report can be used to monitor rubella immunization programs and to detect rubella and CRS in the perinatal population assisted by institutions that use SIP. The user may select the format of the report and may choose to see the quality and coverage of the information by asking for Missing Data rates for every indicator.

Maternal morbidity and mortality

To tackle the Maternal Mortality problem is difficult and to this end SIP offers a set of proxy indicators that may help to make decisions. The indicators include those related to hypertension (Eclampsia, preeclampsia, e.g.), infections, haemorrhage and the qualification of the personnel in charge of delivery. The Maternal Mortality (per 100,000) as deduced from discharge data, is also shown. Figure 3 shows a sample report.

C.L.A.P. (PAHO/WHO)
Latin American Centre for Perinatology and Human Development
Pan American Health Organization-World Health Organization

PERINATAL INFORMATION SYSTEM - Version 1.23 - 18/06/2003
Hospital de prueba - Montevideo - URUGUAY
Maternal Morbidity and Mortality indicators

Records 4527 pregnancies

Indicator	Number of cases	Rate
Preeclampsia	507	11.2
Chronic Hypertension	69	1.5
Birth by unqualified attendant	42	0.9
3rd trim bleed.	34	0.8
1st trim bleed.	22	0.5
2nd trim bleed.	15	0.3
Puerp. infection	14	0.3
Eclampsia	5	0.1
Hospital Maternal Mortality (per 100.000)	4	89.5
No Antenatal visits	4	0.1
Hypertention induced in pregnancy	0	0.0
Illiteracy	0	0.0

***Figure 3**. Maternal Morbidity and Mortality Report. This report was ordered by number of cases and the Missing data rates are not shown.*

NEONATAL HOSPITALIZATION

A predefined set of indicators for neonatal Hospitalization is produced automatically, provided the option is set under OPTIONS of the SET UP menu. These standard indicators match those usually evaluated in such databases as the Oxford Vermont Initiative and refer to the use of technologies and practices and to key diagnoses. The letters FHN preceding them indicates they refer to variables collected in the Neonatal Intensive Care Unit (NICU):

FHN-No Resuscitation
FHN-Missing Antenatal Visits
FHN-Missing Antenatal Steroids
FHN-Cesarean Section
FHN-Oxygen
FHN-Mask
FHN-Tube
FHN-Adrenalin
FHN-Retinopathy (ROP)
FHN-Hyaline Membrane
FHN-Assisted ventilation
FHN-Surfactant
FHN-Necrotizing Enterocolitis
FHN-Early Sepsis
FHN-Late Sepsis
FHN-Cardiac Massage

Indicators and Interventions

With the "Indicators and interventions" Report, the decision maker has a picture of the application of selected interventions (CS, medication and others) to different groups of patients. The patients are divided in three categories according to a simple score of Low, Medium or High risk. The scores assigned to every patient is the same as the one used in the Description of the Population Report.

The following indicators are evaluated:

- Who attended the deliveries and the New Born Babies: It refers to the different members of the health team that serve the patients according to the reproductive risk of the same. The professional qualifications are:

1. Physician
2. Nurse or Midwife
3. Auxiliary personnel
4. Students or traditioanal Birth Attendant (TBA)

It is expected that the population at higher risk is taken care of by the personnel with highest qualification available in the Institution.

- Use of analgesics: It refers to the use of analgesics and tranquilizers in deliveries of spontaneous termination according to the reproductive risk of the pregnant women.

- Termination: It refers to the type of terminations of pregnancy, spontaneous, forceps, caesarean section, another one, under analysis according to the reproductive risk of the pregnant women.

- Episiotomy: Analysis of the practice of the episiotomy in deliveries of spontaneous termination according to the reproductive risk of the pregnant women.

- Level of care: This table presents the distribution of cases taken care of in the different levels of care according to their reproductive risk. With data of a single maternity, all the cases appear in the same row of the table, since all of them were looked after with the same level of complexity, which is a characteristic of the maternity. In merged data analysis of a Country or of a region, on the other hand, this table is useful to monitor the correct implementation of regional reference schemes. This table may help detect distortions such as cases of low complexity taken care of in tertiary level institutions or high high-risk populations served in low level primary institutions.

The patients are classified according to risk using the risk factors described in the chapter "Description of the Population: burden of problems".

The steps to obtain the tables are the following:

First of all open the program SIP, select "Analysis" and then "Intervention related indicators."

A table is shown, of the type of Figure G1, where the user may swiftly change from one intervention to another. Additionally one may see either rates or number of cases in each box of the table.

As an example of application we will select "Method of Delivery" and see the results as "cases", rather than rates (Figure G.1).

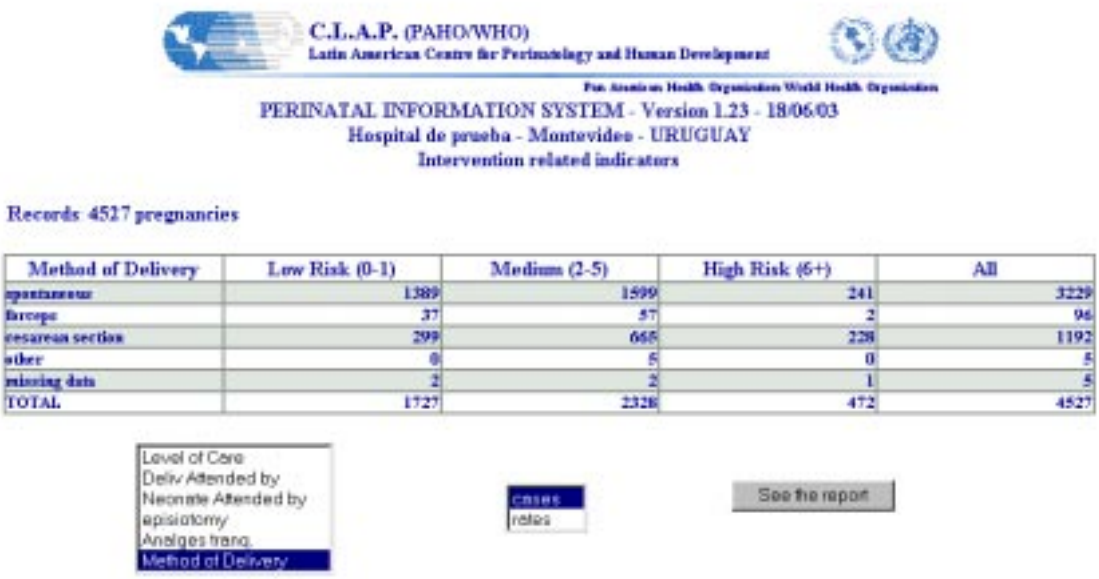


Figure G.1 *Example of Indicators and interventions Report. The number of terminations of pregnancy is 4527, of which 1727 correspond to low risk, 2328 to medium risk and 472 to high risk.*

Reading Figure G1, it is found that, for example, in high-risk patients 241 had a spontaneous delivery while 228 had a caesarean section; forceps was applied to two patients and no other types of termination (abortion e.g.). A record was found with no data on termination.

Mortality analysis by birth weight and time of death

SIP permits a mortality analysis in order to evaluate the quality of care. Perinatal deaths are classified in accordance with the weight of the product and at the time of the death. The presentation of the results is highly interactive in order to facilitate the identification of areas of more deaths and in order to present the excess of deaths with respect to one reference.

Moment of death and 'birthweight'

The data are presented in tables that show the data both in deaths (absolute numbers) and in rates (per 1,000). There are 32 tables that pop at the user´s command to show the specific mortalities, cases or difference of rates with a standard reference.

Please select ANALYSIS, then `BIRTHWEIGHT` AND OUTCOME. In this option we should opt if we want to analyze mortality occurred in the PREGNANCY, LABOUR, OR PUERPERIUM or during the NEONATAL HOSPITALIZATION

In the table of beginning of the exit the populations with which we can compare the data are presented, the options are the following:

1. low-risk group of same population
2. Births and deaths of the city of Pelotas 1993
3. Latin American general population and of the Caribbean 1990-1999
4. Population of the maternity of Social Security of Uruguay (BPS) 1998
5. All the maternities of Uruguay 1999

Each Country may want to include in SIP a standard set of specific mortalities to compare all Maternity Hospitals and Regions to the same benchmark.

As we see in the figure 16.1 the table shows us the data of mortality per 1,000 (rates) differentiated by weight group (500 to 1499; 1500 to 2499; 2500 to 6500) and the time of death (no data, foetal death, neonatal death).

Figure 16.1. *Specific mortality discriminated by weight and time death. This is the simple form of the table with only two columns: Foetal and Neonatal. By choosing "Excess" SIP colours in RED the boxes in which the performance of the maternity is worse than that of the selected reference.*

There is a more detailed table with time of death discriminated for Intrapartum, during delivery, 1st day, 2 to 6 days, 7 to 27 days and over 27 days.

Neonatal death and birth weight

This report is similar to the tables of mortality and moment of death but its information is deduced from the forms of neonatal Hospitalization. It concerns a tool of control of neonatal care quality for Centres of neonatal intermediate and intensive Care.

Specific reference mortalities in this case are

1. Neonatal hospitalization of Montevideo 1999
2. Vermont Oxford Network (325 NICU) 1999

Report Generator

This report is the framework for obtaining a number of predefined lists of indiocators. At SIP star up, the operator selects REPORT GENERATOR. At the left of the screen the users makes his choice in the dialogue boxes. In the middle of the screen the user may select the last report of each kind, shown with the date it was created.

Figure I.1 I *Dialogue for the selection of indicators to be presented in the "Report generator." In the table to the left the user selects the group of indicators (Description of the Population e.g.) and the way of seeing the results, by "rates", "rates and cases" or "lack of information." Once the options are selected, please click on "See the Report".*

PERINATAL INFORMATION SYSTEM - Version 1.23 - 20/06/2003
Hospital de prueba - Montevideo - URUGUAY
Report generator

Records: 4527 pregnancies

Indicator	Number of cases	Rate
Abortions	23	-
Adequate for Gestational Age	3,592	80.3
Antenatal visits 1-4	517	11.4
Current Tetanus Toxoid	4,338	95.8
Chronic anemia	1,134	25.0
Diabetes I	0	0.0

Figure I.2 *Report of six indicators chosen by the operator. In this way each user can follow the evolution of the indicators of his/her interest. In this figure the number of cases and the rates of each selected indicator are shown..*

Trend of and Indicator

The study of the characteristics of the assisted population and of the perinatal health indicators includes the evaluation of its modifications over time.

SIP has the option to select an indicator (example "percentage of termination by caesarean section") and analyze her evolution with a step of time (example month to month) obtaining a graph of the percentage of caesarean sections during the months represented in the database.

Selection of the variable to study

Upon selecting "Analysis" and "Trends of an Indicator" the program makes it possible to select the indicator among a list of several indicators. Each indicator refers to a given fact in the time, for example the termination of the pregnancy is associated at the date of childbirth and at the hour of the childbirth. Indirectly each registry bears indirect a relation to other moments, for example the date of the first antenatal control or the date of birth of the patient.

a- select "ANALYSIS" and then "Trends of an indicator", where the following screen appears (Fig J.1):

Figure J.1. *In this figure the dialogue box that is presented when we select Report of an indicator is observed. In it there should be selected the desired indicator as well as the variable of time and the period in which is wished to analyze its evolution. Finally choose the time step opting amongst "year", "month", "week", and "day."*

Once the user selected the indicator whose evolution in the time interests, specify the temporal variable. It classically will be the delivery date, but it can be of interest define the hour of delivery, in order to detect variations during the day.

Having selected the variable of time that is going to guide the evolution, indicate which will be the step of analysis, whose options are:

- **Year**
- **Month**
- **Week**
- **Day**

Finally the initial moment should be specified and the final moment of the analysis, for example since 1985 until 2001 or else from 1 January to 31 October 2002. Then select "Run" and a graph will be shown after calling Epi Info 2000 to build it on SIP processed data.

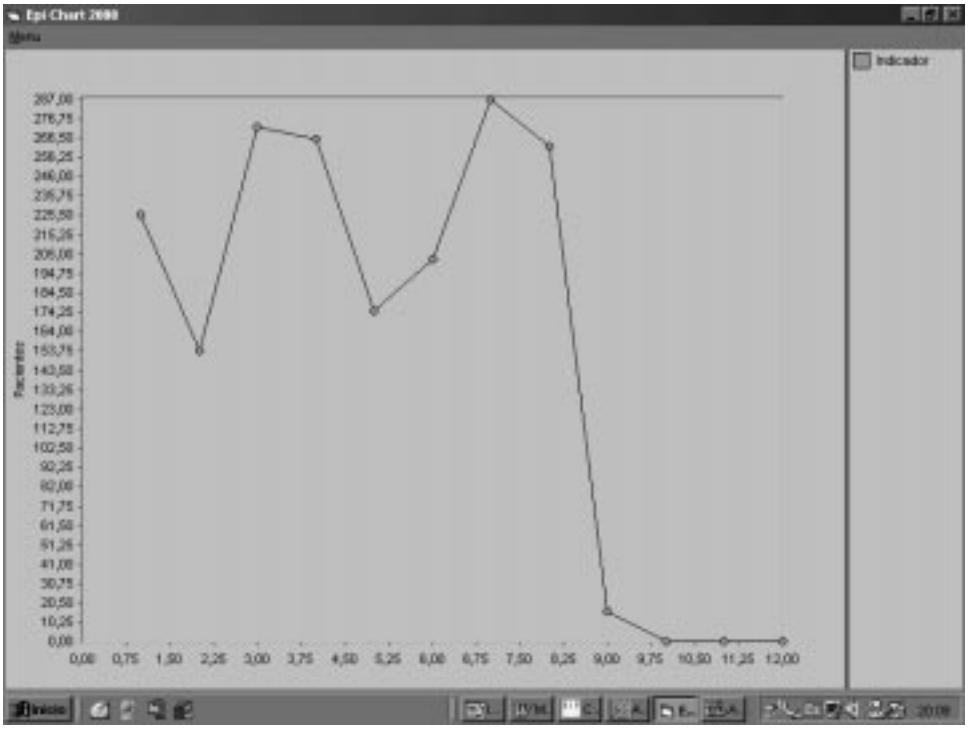


Figure J.2 *Example of evolution of a variable obtained with the program Epi Info 2000 fed with data of the SIP. The SIP prepares the values and the Epi Info 2000 deploys the content. Here the quantity of births was requested in the 12 months from the year, varying from 287 cases in July to 154 cases in February.*

Geographical Distribution of an Indicator

Generalities

The epidemiological surveillance task often includes the study of the territorial distribution of a phenomenon or the variation of health indicators in broad geographical areas. The SIP, upon recording information on the perinatal care place, makes it possible to calculate indicators according to the place of ownership of the measured events and then present them graphically in maps.

Indicator in a region

SIP may merge in a single database a number of databases of different maternity hospitals, each with an institutional Identification, geographical details (country, province, and department). In consequence any indicator may be obtained according to the administrative division. SIP carries out these calculations and calls Epi Map to show the results as a map. EPI INFO 2000 is bundled with SIP. Maps are like that of figure 20.2. The map standard adopted by Epi Map is that of ESRI.

Selecting ANALYSIS from the first screen of the programme and then GEOFRAPHY OF AN INDICATOR, it appears a box where the country's name and the indicators are selected (Fig. 20.1)

Figure 20-1 *Selecting the Country and the indicator to map. Please note that a database with data from several administrative divisions of aCountry is needed in order to have meaningful mappings.*

The colour scale reflects the different levels of the indicator.

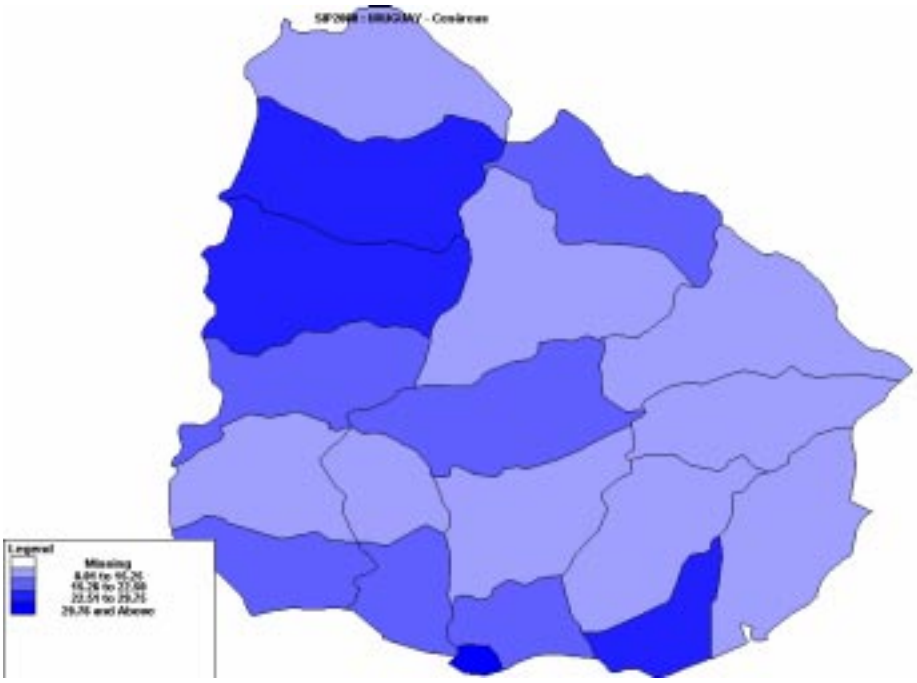


Figure 20.2 *Example of geographical distribution of an indicator appears: percentage of caesarean section in the Departments of Uruguay.*

Following the commands available on screen, the map obtained can be turned into image of slide for a presentation or in figure of a text that describes the perinatal situation of a country.

In future versions of the SIP, the geographical distribution limited at the first administrative level of each country, will be currently extended at the second level of detail. Perinatal health indicators within an Argentine Province or within a Brazilian State will be available.

The codes of the countries used by SIP follows the international telephone numberibg system, as shown in the table.

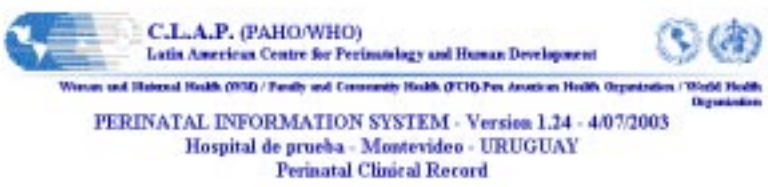
Code	*Country*	*Language*	*Population*	*Deliveries/year*
1	U.S.A	ENGLISH	263250000	4079000
32	BELGIUM	FRENCH		
33	FRANCE	FRENCH		
34	SPAIN	SPANISH		
44	UNITED KINGDOM	ENGLISH		
51	PERU	SPANISH	23780000	622000
52	MEXICO	SPANISH	91145000	2357000
53	CUBA	SPANISH	10978000	160800
54	ARGENTINA	SPANISH	34768000	684000
55	BRAZIL	PORTUGUES	161790000	3800000
56	CHILE	SPANISH	14262000	298000
57	COLOMBIA	SPANISH	35101000	808000
58	VENEZUELA	SPANISH	21844000	566000
297	ARUBA	ENGLISH	70000	1000
351	PORTUGAL	PORTUGUES		
501	BELIZE	ENGLISH	217000	7000
502	GUATEMALA	SPANISH	10621000	383000
503	EL SALVADOR	SPANISH	5768000	183000
504	HONDURAS	SPANISH	5616000	181700
505	NICARAGUA	SPANISH	4139000	164000
506	COSTA RICA	SPANISH	3424000	85000
507	PANAMA	SPANISH	2631000	63000
509	HAITI	FRENCH	7180000	241000
590	GUADELOUPE	FRENCH	428000	383000
591	BOLIVIA	SPANISH	7414000	249000
592	GUYANA	INGLES	835000	20000
593	ECUADOR	SPANISH	11460000	307000
594	FRENCH GUYANA	FRENCH	147000	4000
595	PARAGUAY	SPANISH	4960000	153000
596	MARTINICA	FRENCH	379000	6000
597	SURINAME	DUTCH	423000	10000
598	URUGUAY	SPANISH	3186000	54000
599	DUTCH ANTILLES	DUTCH	199000	4000
1242	BAHAMAS	ENGLISH	276000	5000
1246	BARBADOS	ENGLISH	262000	4000
1264	ANGUILA	ENGLISH	8000	200
1268	ANTIGUA & BARBUDA	ENGLISH	66000	1000
1284	VERGIN ISL. (UK)	ENGLISH	19000	400
1340	VERGIN ISL. (USA)	ENGLISH	105000	3000
1345	CAIMAN ISL.	ENGLISH	31000	800
1441	BERMUDA	ENGLISH	63000	1500
1473	GRENADA	ENGLISH	92000	2500
1613	CANADA	ENGLISH	29463000	432000
1649	TURK & CAICOS	ENGLISH	14000	300
1664	MONTSERRAT	ENGLISH	11000	200
1758	St. LUCIA	ENGLISH	142000	3000
1767	DOMINICA	ENGLISH	71000	1000
1784	ST. VINCENT & GR.	ENGLISH	112000	2000
1787	PUERTO RICO	ENGLISH	3674000	64000
1809	DOMINICAN REPUBLIC	SPANISH	7823000	202000
1868	TRINIDAD & TOBAGO	ENGLISH	1306000	27000
1869	ST. KITTS & NEVIS	ENGLISH	41000	1000
1876	JAMAICA	ENGLISH	2447000	52000

Completeness control

The COMPLETENESS CONTROL option shows where information is lacking in the records. It is therefore a tool with wich the discipline of the medical staff in documenting their actions and health observations can be checked.

Select from the main menu "Analysis" and then "Completeness Control". A Report Generator Screen for Completeness Control is shown. Please select "Pregnancy, Delivery and Puerperium" or "Neonatal Hospitalization". You may choose rates or rates and cases. The operator must specify the order in which the report variables will be listed. Having the option to use the predefined order or ordering by existing cases in each report variables; finally you may wish to stratify the output, for instance according to the method of termination of pregnancy.

Fig. *Report Generator for Completeness Control in which the operator selects the way to present the report. In the center of the screen the last of each Report kind is available for immediate inspection.*



PERINATAL INFORMATION SYSTEM - Version 1.24 - 4/07/2003
Hospital de prueba - Montevideo - URUGUAY
Perinatal Clinical Record

Selection by dates: Parto fecha del parto entre 01/01/30 y 01/06/29,
4527 patients, 4527 pregnancies, 4527 new-borns, 0 hospitalized new born babies

Indicator	Number of cases	Rate
Missing Data	580,762	46.4
Missing Name-Address Data	57,473	72.2
Missing Patient Data	155,131	81.6
Missign Pregnancy Data	126,426	39.9
Missign Birth Data	37,026	24.8
Missign Mat. Problems Data	88,683	35.0
Missign New Born Data	116,023	44.2
Missing Fetal death and time	0	0.0
Misssing Discharge Nborn	0	0.0
Misssing Mat.Discharge	0	0.0
Missing Birthweight	0	0.0
Missing Gestational Age	0	0.0

Figure - *Example of Completeness Control Report. Please note that the global rate of lack of data is 46.4%, which is 580,762 individual data elements not completed in the population of 4527 patients and all the variables of the PCR.*

It can happen that, due to the conversion of databases from SIP in D.O.S. or for other reasons, high levels of missing information are shown. It is important to monitor the evolution of data completion over time.

The concept of "lack the data" is radically different from the "not" or "was not made." Indeed, if the pregnant woman was not vaccinated against tetanus, there should be considered "no", that is not just like the absence of data that could be either of the two alternatives. The PCR was designed so that all the variables have some data, except for the variables of Newborn in case of abortion or foetal death. Even they are obvious, all data they should be recorded. For this reason, please enter the clinical record to SIP before discharge or shortly after that time. A good record may have up to 5% of missing data, except important variables such as "life or death", gestational ages, weights and pathology that must be completed with no lack of information whatsoever.

ANALYSIS BY VARIABLE GROUPS: The first part of the report gives an idea of the filling of variables by groups or by sections of the PCR

ANALYSIS BY VARIABLE: The second part of the report is more specific in giving the missing data level of some key variables, used in mortality calculations.

Conversion of SIP databases

Generalities

The data collected during the clinical activity are analyzed locally by the program. In the event that data should be analyzed with other programs, the SIP has elected great dissemination standards to facilitate their multiple utilization. The databases of the SIP in Windows are of type ACCESS, standard that also follows the program Epi Info 2000.

Conversion SIP in D.O.S. to SIP in Windows

The databases of the SIP in D.O.S. are files of type SIHIS1.DBF, while the data of SIP for Windows are relational databases called SIP*.MDB where * represents characters defined by the user. Thus the database of the Hospital of TOWN could be called SIPtown.MDB, for example.

To be able to carry out the conversion the operator will select of the screen of start-up of the program ADMINISTRATION to then select CONVERSION.

In turn CONVERSION presents three options; please select "Conversion SIHIS1.DBF to perinatal data (MDB)".

Follow the steps to define the origin file and the destination file.

SIP will transform the SIHIS1.DBF file in the SIPDATOS.MDB type file that has been selected as the current database file. Please bear in mind that all information previously contained in SIPDATOS.MDB will be overwritten when converting data from SIHIS1.DBF type file onto it. If a merge of data from different files is needed, please refer to the "merge Databases" option under Administration.

Table X - Times of conversion of bases .dbf to bases .MDB with version 1.2 of SIP.

Quantity of records	Time (minutes and seconds)	
	P II, Windows 98	P IV, Windows 2000
600	11'30	00'59
6020	1:40'26	10'40

Figure 21 Menu bars to go to Conversion of DOS SIP bases to SIPDATOS.MDB format.

Data analysis with EPI INFO 2000

With SIP Windows the operator can make data analysis with Epi Info 2000 without changing the data bases because the SIPDATOS.MDB base has the same extension as Epi info data bases.

The Epi Info 2000 installation must be done separately (after or before the installation of SIP, it does not matter). The installation file (SETUP) of Epi Info 2000 and the user manual are in the SIP CD in EPI INFO file. For its installation EPI INFO needs 100 Mbytes of disc space. Actualizations of this programme are in www.cdc.gov.

The most practical way to analyze SIP data with Epi Info or any other commercial package is by using a standard text file, rather than the relational database of SIP. The SIPHCP.DAT file is a tab separated text file which can be obtained using "Administration" and "Conversion".

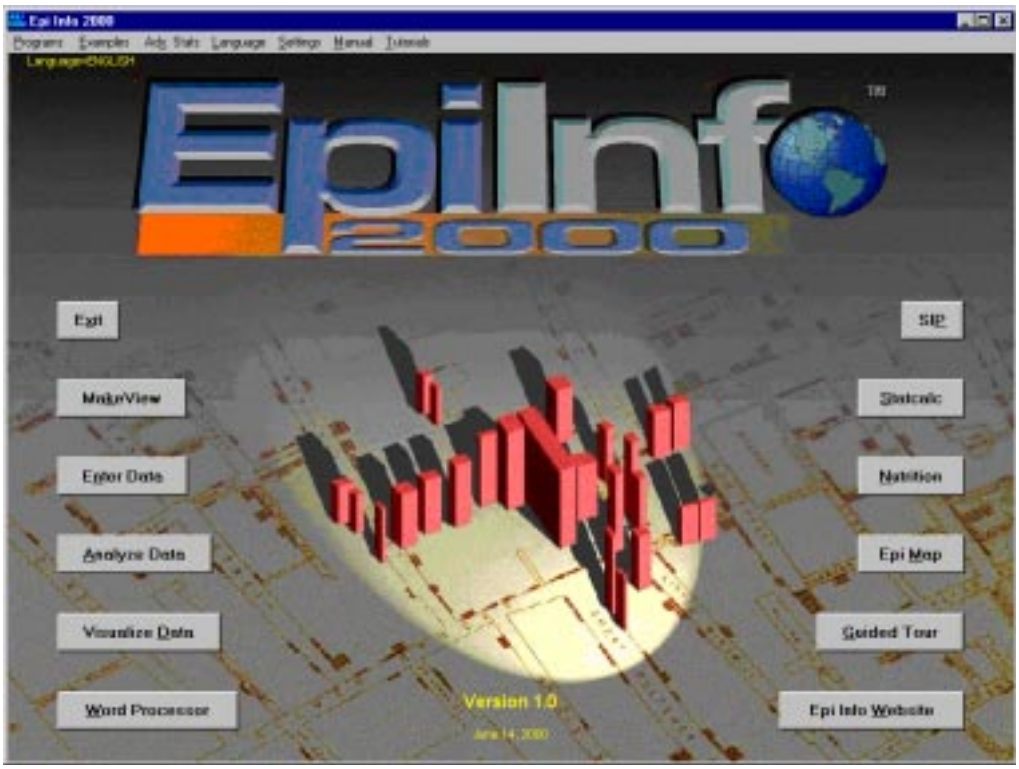


Figure - Initial screen of Epi Info 2000, with SIP. Data bases SIPDATOS.MDB can be processed with Epi Info 2000.

The SIP detects the presence of Epi Info 2000 (or Epi Info 2002) in your computer and asks if the operator wants the access to SIP from EPI INFO 2000 be automatic. In case the operator answers "yes", the initial screen will appear as shown in the figure, with a direct access to SIP. Once the data were recorded and in analysis, it is recommended to leave in memory both programmes: SIP and Epi Info 2000 to alternate between their screens.

The specific process about Perinatal health services are easily read from the SIP analysis, while the complex process, like a logistic regression can be obtained from Epi Info 2000. To get these results it is necessary to have experience in statistics and the use of Epi Info 2000.

Data transmission and reception by internet

Generality

SIP allows the operator to send and receipt data from an Institution to another by Internet. With the reception and transmission of data by Internet, it is become easier the analysis of the Perinatal situation with recent data. The transmission data are not repeated, because the consolidation programme verify if the data exists before and if it is repeated, the more recent data is kept.

Transmission is performed by FTP (File Transfer Protocol) and the user must know the IP address of the receiving server.

Transmission and reception configuration

In the main screen, under CONFIGURATION, the operator can find INTERNET, and doing click in this option will be appeared a dialogue box where can be defined the place from where the data will be transferred, and the users name and password from which the FTP server identify the Maternity that sends the data.

The server will be located in the Maternal and Child Department of a Country or in a statistics office of the Ministry of Health. The FTP server address preinstalled is provided by C.L.A.P. but may be changed. (Figure No 1)

Figure *Shows the dialogue box that appears when it is selected Internet Configuration. Doing this configuration the programme allows the Maternity to transmit and receive data.*

The same SIP programme is capable to receipt data bases SIPDatos.MDB and to consolidate them. To do this the operator can select the disk file where the FTP server will store the data received.

These can be configured in CONFIGURATION, INTERNET, and then select. Marking this item automatically appears a box where it can be written the way which the computer will go to file the data bases receipt by FTP.

In order to also shape these data one enters in CONFIGURATION, INTERNET, there is selected the box "Marks here if this computer receives databases in order to consolidate." Upon marking it there automatically will appear a table where the road that the computer will travel in order to keep the bases received by FTP can be written. This path may coincide with a file of the computer that operates the FTP, or to be a file accessible by local network.

Figure N.2. Configuration of the road that is indicated to the program in order to receive data.

Data Sending

From the SIP in operation in a maternity, the databases by Internet can be sent to the specified server upon installing the program, as it was described in N.2. All the times that are desired are sent the data agreeing to "Administration" and then "to Send data." The SIP presents a window like that of figure N.3 and expects the confirmation of the user. If the computer is connected to Internet on an ongoing basis or prepared in order to take the line, discard the number of the supplier of Internet when it precise, the transfer will be done automatically.

Once the transfer took place, a window accounts for the success of the operation. The user can capture this window for the purpose of documentation of the shipment, awaiting the express confirmation of the Maternal and Child Program that has received the file.

Figure N.3-Presentation of the data to be sent.

4 Merging of databases

To merge the received databases means making a single database of all the received bases. This is possible because each database of the type SIPDATOS.MDB has the information on the maternity where each delivery occurred, of each physician's office where the prenatal visits took place and therefore there is not possible confusion

Figure N.4 Example of merging of databases that arrived at the server. In this case a basis arrived only. To the right the databases that arrived and to the left the file where they will be merged. The name of the bases that arrive was generated by the SIP that sends the data, in order to avoid all possible duplication of file names.

Access to national SIP data

One of the pillars supporting effective decision-making is the availability of recent and reliable information: the SIP produces this information for the area of the health institution, through the collection, quality control, and specialized processing of the data. In the other chapters the reader has been introduced to this modality of work with SIP within a Maternity Hospital.

An additional element which is important for highlighting and making use of the information is the possibility of comparing indicators with reference situations. This aspect has been strengthened In the SIP for Windows compared to the SIP program in D.O.S. For example, reports can be generated to highlight the excess of a specific mortality with respect to a reference database selected by the user. This is a first level of comparison available locally within the computer SIP has been installed in.

A second level of comparison consists of having an easy access to indicators and to the actual SIP reports on National Databases, rather than on an institutional database. The acquisition of these indicators is possible only if the different hospitals periodically deliver their databases to a centralizing entity. The format of the data can be either the SIP D.O.S standard (SIHIS1.DBF files) or the SIP for Windows SIPDATOS.MDB type files. In the first case a conversion is necessary however; in the second case this step has been obviated.

SIP has been programmed to be available, not only on the computer but also on the Internet. The interactive site of C.L.A.P. in offers SIP reports on annual databases (1990 until 2002) from over 10 countries in Latin America and the Caribbean.

Once the maternity obtains its “basic indicators” they can be used by the decision-makers in the process of agreeing on one set of basic indicators to represent their country's group of institutions. Naturally the representativeness of these indicators will be more accurate if a large number of maternities send data. Thus, one should be cautious when comparing figures from countries with a limited number of cases. In order for a country to publish data it must have SIP data from at least three different maternities for the year in which the indicators are generated.

In order to obtain the required information the operator should have access, in the first place, to the interactive site of CLAP on the Internet, .

The home page contains several different options; (see Figure 1) select “Perinatal Indicators in the Region”. This option will lead to a screen where the option “SIP in remote processing” (see Figure 2) should be selected.

On this next screen you will find two dialogue boxes, select the desired option as follows.

In the first box select the desired indicator, in the second box select the country for which you wish to obtain information.

After both selections have been made, click on “Seeing report.” Figure 3 contains an example for the selection of the Indicator, “Description of the Population” with the basis of data, “Uruguay 2001”. The results of this selection are presented in Figure 4.

Fig.1. Home page for accessing the CLAP website

Fig.2. Second screen of the site, where "SIP in remote processing" can be selected.

Fig.3. Screen where the user selects the type of report (10 basic indicators, FIGO indicators, etc.) and the database of interes.

Fig.4. The result of SIP Remote Processing is shown: except for colour differences, the reports are calculated and shown in exactly the same way as in SIP on a local computer, but with National data rather than local Maternity data.

Training example

Generalities

Gaining an understanding of the entire Perinatal Information System is directly applicable to the perinatal care. The development of the system relies on effective training of the staff in charge.

In order to operate the SIP in an accurate and continuous way in a Perinatal Health Institution, it is necessary that the staff is well trained and that the data processed are circulated and are used by the staff.

A crucial element needed for the correct functioning of the Perinatal Information System, just as for any other routine process, is the motivation and training of the staff in charge.

It is recommended that periodically, meetings are organized for exchanging information about the data recorded. In addition, a workshop introducing people to the Basic Perinatal Clinical Record, the Perinatal Card and the SIP program should be provided. The Health Services reality of Staff rotation presents an issue for collecting quality and complete data and making decisions about the baseline indicators.

The last Friday of every month from March to November, C.L.A.P. organizes a training workshop for using the Perinatal Information System. It provides training under workshop conditions where a small group of people are guided through and work with SIP. C.L.A.P. provides the option of doing this workshop in Maternity Hospitals in cooperation with Ministries of Health and PAHO/WHO Representative Offices. For this purpose, C.L.A.P. has written the present text for a teaching workshop similar to the one offered in Montevideo that can be used for organizing workshops in other Counties of Latin American and the Caribbean.

Exercise in using the PCR

This exercise can be used as a base for a training workshop. It begins with filling in the PCR sheet and the Perinatal Card with the data from the example; after that the staff is trained on the use of the computer and the use of the programme for recording the information and analyzing it.

Each workshop attendee should have a PCR sheet and a Perinatal Card. The clinical case is read, referring to the definition of the variables listed in the manual.

The data is recorded in both the PCR and the Perinatal Card.

A coordinator is available to clarify any questions that cannot be answered by the manual.

The exercise finishes with a plenary session where each group will present their conclusions, and any difficulties they encountered in completing the PCR, the Perinatal Card and in using the computer programme.

Clinical case

J.M. lives in Montevideo, her address is Ayacucho 1596, her telephone number is 509 1636. J.M. goes to the health centre, «La Villa» (Variable PRENATAL CLINIC or ORIGIN 10622) for antenatal visits. At «La Villa» she is given a Perinatal card. The identification number listed on the card is 2.456.598, this is the same number that is also to identify the patient.

J.M. is a 29 year old (birth date 15/6/1971), Caucasian woman. She has completed her secondary level of education, is single, does not smoke, drink alcohol, or use drugs. She has a family history of chronic hypertension but she does not have a personal history of disease. This is her second pregnancy. Her fist child was born on the 15th of July 1998, the delivery was normal at 40 weeks gestation with a weight of 3800g.

The current pregnancy is planned and a contraceptive method was not used

The date of J.M´s first perinatal visit is August 22nd 2000. She reveals that her periods are regular and that her last menstruation began on May 13th 2000, she is therefore in her 14th week of gestation. Her height is 155 cm and her normal weight is 68.7 Kg. J.M. had the tetanus toxoid during her previous pregnancy and was immunized against rubella when she was a child. Her blood group is A Rh positive. The clinical examinations; which include a breast, pelvic and cervical examination are all normal. The dental examination is left as the responsibility of the dentist. At the first visit J.M.´s weight is 70.2 kg, her blood pressure is 110/70 and her uterine height is 10.5 cm. A routine laboratory test (including bacteraemia and HIV) and an ultrasound are ordered. Her PAP smear from previous year is still valid.

At an October 10th examination J.M. is in her 21st week of gestation and she has experienced foetal movement. Her weight is 73.7 kg, her blood pressure is 110/75 and her uterine height is 19 cm. The results of the laboratory tests from October 1st are: VDRL negative, Hb 10, 2 g and, bacteraemia negative. Iron and folate supplements are recommended.

On November 28th J.M is in her 28th week of gestation, her weight is 74.9 kg, her blood pressure is 120/80, her uterine weight is 26 cm, and the foetal heart rate is (FHR) 155 beats per minute. The ultrasound indicates that the gestational age agrees with the LMP, the foetus is growing at 50 centile and, the amniotic fluid and the placenta are normal. J.M continues with the iron and folate supplements and an oral glucose tolerance test is ordered.

On December 27th, J.M. is in her 32nd week of gestation, her weight is 75.2 kg, her blood pressure is 123/85, the uterine height is 28 cm, the presentation is cephalic, the FHR is 150 beats per minute and the results of oral glucose test are normal.

On January 25th she is in her 36th week of gestation her weight is 76.5 kg, her blood pressure is 140/80, the uterine height is 32 cm and her FHR is 140 beats per minute. She brings the following new lab results: VDRL (-), Hb 12 g. Cephalic presentation. A Group B Strep screening is ordered.

On February 3rd, the patient is admitted into the hospital at 8:30 am, (HOSPITAL CODE. 10008), with her Perinatal Card. Her ID number in the PCR is the same as her National Identity Card. She is in her 38th week of gestation which agrees with the LMP and the ultrasound at 20 weeks. J.M. is in labour with 6 cm dilatation, intact membranes, cephalic

presentation in first Hodge stage, 3 contractions in 10 minutes, lasting 40 seconds each, FHR 140 beats per minute, foetal size was agreed with the amenorrhea. Group B Strep was positive so she is given Ampicillin i/v. Maternal HR was 80 beats per minute and blood pressure 140/80. During labour the patient is able to walk until the moment she experiences the rupture of membranes, occurring at 10:35 am. The amniotic fluid is clear, she has 8 cm dilatation, cephalic presentation in second Hodge stage. OIIT and the FHR is 145 beats per minute. Her husband accompanied her throughout the labour. At 11:00 a.m. she wants to begin pushing, she is taken to the delivery room and at 11:10 a.m. she has a spontaneous birth, lying on her back, vertex presentation, without an episiotomy, a vaginal laceration of first grade occurs. Immediately after birth oxytocin is administered through IV. The cord clamping occurs 3 minutes after birth. The placenta is expulsed at 11:25 a.m and is examined by obstetrician I. Gonzalez who describes it as intact. The VDRL and TSH screening from the cord blood are then performed.

The neonate, a male, is received by the nurse on duty, R. Tolosa, who evaluates the Apgar Score as 9 at the first minute and 10 five minutes later. The neonate breathed without difficulty, he is normal, has good tone and cried, he weighs 3100 grams, his length is 49 cm and his cranial circumference 35 cm. The physical examination shows appropriate development for 38 weeks.

The neonate is immediately handed to the mother for breast feeding. They were roomed in.

When checked 60 minutes after birth the mother's pulse is 90 beats per minute, blood pressure 140/80, good uterine retraction and blood loss was normal.

Three hours later the same parameters are the same. 24 hours later her temperature is 36.8°C, her pulse is 70 beats per minute, blood pressure 130/70, good uterine retraction and lochia normal. The neonate is breast feeding and had meconium on his first day.

Two days after birth, mother and child are discharged, with a date for a postnatal appointment. Before discharge the mother receives recommendations to put the baby to sleep in supine position and to continue the breastfeeding. In addition, she is given advice on contraceptive methods.

The VDRL test of the cord blood is negative and the TSH test is normal. The hearing test is also normal. The infant's weight at discharge is 2950 g, and he is breastfeeding exclusively.

Before discharge the information in the PCR is transferred to the Perinatal Card to ensure feedback to other health care providers.

Data record entry

To perform the data record entry it is necessary to have the SIP programme installed in your computer and configured as described in chapter 9

System configuration

Maternity Location

Open «SET UP» from the main menu; select the location of the institute where the SIP data is recorded. Define the geographical location by opening «Geographical Location» and

specifying the Country, the Province or State and County of the Maternity Hospital. The SIP programme confirms this information when writing it in location data files.

Institution or Maternity Hospital

Define the Maternity Hospital. In «SET UP» select «HOSPITAL» to enter information about the Maternity Hospital. Next to the Maternity Code there is a box which must be marked for the Maternity name to be visible in all the documents and results screens. If data of more than one Maternity Hospital are present in the database, the Label of all screens and reports may be specified under «Options».

Options

Using, «SET UP - OPTIONS» select the set of variables to be entered for the Maternity. Choose all the variables from the Perinatal record. Specify the number of decimal figures you wish to see in rates. You may also let the system know if you are interested in entering Neonatal Hospitalization Data. For Quick data entry, without the help of the mouse, mark «Quick data entry».

Record entry

History Record

Select from the main menu «Clinical Record» and «Perinatal». Use the history N° 2.456.598 which is the identification number included in the example. Do not forget to save this number and remember the ID number for rapid access.

Summary (Letter of Discharge)

After the data is entered a detailed letter of discharge including perinatal data of the patient may be obtained. To do this, access Clinical Record N° 2.456.598 and click «Summary». Then print the summary which can be used as a reference document or can be incorporated into the patient's history files.

Access «SET UP - OPTIONS» and mark the option, «only essential data in the letter of discharge», click «Accept» and close the window. Once again access the Perinatal Clinical Record N° 2.456.598 and print the summary. Once this is complete open, «SET UP - OPTIONS» and choose, «complete summary».

Modify records

The SIP programme allows the operator to modify or add any missing data. To do this, access the «Clinical Record - Perinatal», insert the patient's identification number and select «find a record». Automatically the program will display the record on the screen. In the case where the operator does not remember the number, a value for any of the variables can be inserted. For example, birth weight=1505 g, then select «find a record» and the programme will display a table with all the cases that have recorded this birth weight. If you double click on the desired history the programme will save the data. As an example, select all the records with a mother aged 20 and try accessing them.

Neonatal Data Entry

Open, «SET UP - OPTIONS» and select the box, «include neonatal hospitalization» in order to also display this data. Access the «Clinical Record - Neonatal Hospitalization» and fill in the data from the example. Once this is complete, create a summary (letter of discharge).

Description of the population

Open the «Analysis» and the «Report Generator». This selection is used for analyzing the Maternity perinatal situation and is useful for producing indicator statistics.

A report describing the population will be displayed as a table with 20 indicators. These are displayed as «rates», «rates and cases», «importance» and «missing data». For practice, try answering the following questions. How many pregnant women are under 15 years old in this study? What are the main risk factors founded in this population? What can you do to reduce the adverse results of Perinatal deaths, prematurity and LBW ? Refer to the Chapter on this report to do this exercise.

Basic indicators

Select «Analysis» and then «Report Generator». Next, select the desired option from the screen shown on the left. For example; «10 basic indicators», «FIGO indicators», «Rubella indicators».

Select «10 basic indicators». This option will display the rate of low birth weight, very low birth weight, small for the gestational age, caesarean (%), foetal mortality, early neonatal mortality and maternal mortality.

Birth weight and outcome

Access the data base, select «Clinical Record» and then «Define Database», the data bases are located in the folder «TESTDATA».

Select «Analysis» and then «Birth weight and outcome». There are two options for the analysis: «pregnancy, labour and puerperium» in which the perinatal death is classified according to the birth weight and the time of death and «neonatal hospitalization» in which the death is shown within neonatal Intensive Care Units (NICU) according to birth weight and time of death.

First select the option «pregnancy, labour and puerperium» and choose for instance as a reference «Uruguay 1999». The different ways of viewing the data permits the operator to study the occurrence of death in different periods throughout the perinatal care. For practice try answering the following questions: after comparing this distribution of deaths with the standard chosen (Uruguay 1999, e.g.) what additional indicators or pieces of information would you like to have in order to make decisions? In what segments of perinatal care the Maternity under study fares better than the standard? Bear in mind that every Country may include in SIP a national standard to ease individual benchmarking of Maternity Hospitals.

Once this is complete select a test data base with neonatal data located in the same folder, TESTDATA. Access the second option «neonatal hospitalization» and its distribution compared with the reference «Vermont Oxford 1999» will be displayed. Discuss the results observed.

Training example: neonatal hospitalization

The following clinical case may be used to train staff in completing the Neonatal Admission and Discharge Record as well as the Neonatal Care Daily Flow Chart. A copy of these forms is available on pages 25-26 and 43-44 respectively.

MV lives in Montevideo, her address is 1237 Propios del Rey, Phone # 4802235, and is the mother of AV, Born in Montevideo General Hospital in Uruguay. MV ID # is 1883641. AV hospital registration number is 123456.

MV had antenatal care but corticosteroids were not administered to her before delivery because she was admitted during the second stage a few minutes before delivering the baby.

A boy was born by spontaneous vaginal delivery on July 13th, 2002 at 14:29. Baby boy of 25 weeks of gestational age, weighed 660g, length 33 and cranial circumference was 23 cm. Initial clinical exam showed no congenital defects.

Apgar score was 5/8, recovering with bag and mask ventilation with FiO2 .5. For transportation the baby was intubated with an ET 2.5. NICU admission was in the same hospital, transported in an incubator by a physician and a nurse midwife.

At admission, 15 min after birth, core temperature was 35°5 C, SaO_2 98%, pink. Mechanical ventilation was continued with a PIP 24 PEEP 5 Rate 60 and Fi O_2 60%, Heart Rate was 180 bpm, no heart murmurs. Arterial BP 44/27. MBP 29, good capillary refill. Abdominal examination was normal. Admission was done by Dr CF.

Notes for Discharge summary:

Diagnosis at admission is Hyaline Membranes Disease and the first dose of exogenous surfactant is administered at 30 minutes. A second dose is given at 7 hours of age.

Indomethacin was given at day for when PDA was suspected clinically.

Baby was weaned from IMV to nasal CPAP on day 5 and reintubated after 12 hours because of clinical a ABG deterioration. At day 11th was again weaned to nasal CPAP and continued on FiO_2 25% until day 71. No postnatal steroids were given.

On day 21 (July 4th) a hemoculture was obtained for suspected sepsis and a Coagulase Negative Staph was isolated in two simultaneous blood samples. ATB treatment was maintained for 10 days.

Cranial ultrasound on day 22nd showed bilateral dilatation of lateral ventricles with a clot in the left lateral ventricle. No periventricular leucomalacia was found.

Eye exam was normal on days 45 and 55.

Weight values were:

Day **6**, 504g; **13**, 540g; **20**, 580g; **27**,626g; **34**, 694g; **41**, 732g, 48, 842g. Lowest weight was 490g on day 8th, birth weight recovery was on day 28. At 36 weeks of corrected age, weight was 16006g.

During hospitalization he received 5 transfusions (packed red cells or plasma). At discharge, October 18th, at age 96 days and corrected gestational age of 38 weeks and 4 days weight was 1940g, length 40 cm and cranial circumference 32 cm. Clinical exam was normal.

Feeding at discharge was on breast milk+ fortifiers. Discharge is signed by Dr JLD.

- Final diagnoses were:
- Hyaline Membranes Disease
- Patent Ductus Arteriosus
- Nosocomial sepsis
- Intracranial Haemorrhage Grade III
- Chronic Lund Disease of the preterm infant.

List of SIP variables (version 1.2)

SIP variables are ordered in different tables according to the events they belong to. Some tables reflect the mother patient, other group pregnancies and finally other are lists of babies. Appropriate links between them allow assigning more than one pregnancy to a single patient and several products of a pregnancy. The "clinical tables" of SIP are the following:

SIPPAT –Name and address of patient
SIPPAC – General information on mother-patient
SIPEMB – Pregnancy
SIPPAR – Delivery
SIPPAM – Maternal Problems in pregnancy, labour and puerperium
SIPNEO – New Born Baby

For Neonatal Hospitalization, the tables are:
SIPFN0 – birth and delivery room
SIPFN1 – transportation and admission
SIPFN2 – days 0 to 27
SIPFN3 – day 28 or after
SIPFN4 – discharge

Table	N°	Name of variable
SIPEMB	1	unique patient n°
SIPEMB	2	pregnancy number
SIPEMB	3	Number of foetuses
SIPEMB	4	LMP
SIPEMB	5	doubts on LMP date
SIPEMB	6	prenatal clinic
SIPEMB	7	dental
SIPEMB	8	total years completed
SIPEMB	9	age
SIPEMB	10	marital status
SIPEMB	11	date prev preg termination
SIPEMB	12	interbirth period
SIPEMB	13	pregnancies
SIPEMB	14	abortions
SIPEMB	15	previous deliveries
SIPEMB	16	live born babies
SIPEMB	17	live b still alive
SIPEMB	18	died 1st week
SIPEMB	19	died after 1st week
SIPEMB	20	still born deliveries
SIPEMB	21	CS previous
SIPEMB	22	previous NB
SIPEMB	23	last w/ preeclampsia
SIPEMB	24	1st tetanus toxoid
SIPEMB	25	2nd tetanus toxoid
SIPEMB	26	Rh factor
SIPEMB	27	cigarettes per day
SIPEMB	28	hospitalization
SIPEMB	29	VDRL/RPR < 20 weeks
SIPEMB	30	Hb 1
SIPEMB	31	risk score CLAP
SIPEMB	32	visits same hospital
SIPEMB	33	perinatal card
SIPEMB	34	number of visits
SIPEMB	35	date 1st visit
SIPEMB	36	GA 1st visit
SIPEMB	37	weight at 1st visit
SIPEMB	38	date last visit
SIPEMB	39	GA last visit
SIPEMB	40	weight at last visit
SIPEMB	41	weight gain
SIPEMB	42	cervix
SIPEMB	43	referral
SIPEMB	44	referral/insurance
SIPEMB	45	BMI in this pregnancy
SIPEMB	46	no maternal problems
SIPEMB	47	antirubella previous
SIPEMB	48	planned pregnancy
SIPEMB	49	contraceptive failure
SIPEMB	50	GA reliable
SIPEMB	51	fetal movements
SIPEMB	52	bacteriuria
SIPEMB	53	pap smear
SIPEMB	54	Hb 2
SIPEMB	55	VDRL/RPR > 20 weeks
SIPEMB	56	VIH ordered
SIPEMB	57	Fe/Folates
SIPEMB	58	FTA confirmation
SIPEMB	59	external version
SIPEMB	60	alcohol/drugs
SIPEMB	61	drugs
SIPEMB	62	usual weight
SIPEMB	63	breast
SIPEMB	64	comments on pregnancy
SIPEMB	65	last user
SIPEMB	66	date of last access
SIPEMB	67	time of last access
SIPEMB	68	free 1
SIPEMB	69	free 2
SIPEMB	70	free 3
SIPFN0	1	unique mother n°
SIPFN0	2	unique newborn n°
SIPFN0	3	pregnancy number
SIPFN0	4	twin number
SIPFN0	5	institution of birth
SIPFN0	6	antenatal visits
SIPFN0	7	antenatal corticoids
SIPFN0	8	date of birth
SIPFN0	9	time of birth
SIPFN0	10	type of delivery
SIPFN0	11	gender FHN
SIPFN0	12	Apgar 1M
SIPFN0	13	Apgar 5M
SIPFN0	14	oxygen
SIPFN0	15	mask
SIPFN0	16	tube
SIPFN0	17	cardiac massage
SIPFN0	18	adrenalin
SIPFN0	19	birth weight
SIPFN0	20	length at birth
SIPFN0	21	head circumference
SIPFN0	22	gest age
SIPFN0	23	ethnic group mother
SIPFN0	24	ethnic group father
SIPFN0	25	major congenital malformation
SIPFN0	26	death in labour room
SIPFN0	27	outcome
SIPFN0	28	observations
SIPFN0	29	place hospitalization

Table	N°	Name of variable
SIPFN0	30	last user
SIPFN0	31	date of last access
SIPFN0	32	time of last access
SIPFN0	33	free 1
SIPFN0	34	free 2
SIPFN0	35	free 3
SIPFN1	1	unique patient n°
SIPFN1	2	unique newborn n°
SIPFN1	3	pregnancy number
SIPFN1	4	twin number
SIPFN1	5	New Born Care Unit
SIPFN1	6	death in transport
SIPFN1	7	origin
SIPFN1	8	date of transfer
SIPFN1	9	time of transfer
SIPFN1	10	duration of transfer
SIPFN1	11	distance of transfer
SIPFN1	12	transport
SIPFN1	13	accompanied in transfer
SIPFN1	14	incubator for transfer
SIPFN1	15	venous line in transport
SIPFN1	16	monitor in transfer
SIPFN1	17	oxygen in transfer
SIPFN1	18	tube in transfer
SIPFN1	19	temperature admission
SIPFN1	20	O2 sat at admission
SIPFN1	21	cyanosis admission
SIPFN1	22	date admitted
SIPFN1	23	time of admission
SIPFN1	24	days at discharge
SIPFN1	25	hours of life at admission
SIPFN1	26	weight at admission
SIPFN1	27	length at admission
SIPFN1	28	head circumference
SIPFN1	29	notes for transport
SIPFN1	30	responsible admission
SIPFN1	31	Free X
SIPFN1	32	last user
SIPFN1	33	date of last access
SIPFN1	34	time of last access
SIPFN1	35	free 1
SIPFN1	36	free 2
SIPFN1	37	free 3
SIPFN2	1	unique patient n°
SIPFN2	2	unique newborn n°
SIPFN2	3	pregnancy number
SIPFN2	4	twin number
SIPFN2	5	ID
SIPFN2	6	hospitalization 27d
SIPFN2	7	oxygen
SIPFN2	8	CPAP days 0 -27
SIPFN2	9	ventilation
SIPFN2	10	high freq ventilation
SIPFN2	11	oxygen 36 weeks
SIPFN2	12	postnatal corticoids
SIPFN2	13	HMD
SIPFN2	14	pneumothorax
SIPFN2	15	ductus arteriosus
SIPFN2	16	necrotizing enterocolytis
SIPFN2	17	intracraneal haemorrhage
SIPFN2	18	surfactant
SIPFN2	19	age surfactant given
SIPFN2	20	indomethacyn
SIPFN2	21	retinopathy
SIPFN2	22	periventricular leucomalacia
SIPFN2	23	early sepsis
SIPFN2	24	late sepsis
SIPFN2	25	pathogen
SIPFN2	26	date of culture
SIPFN2	27	mycosis
SIPFN2	28	weight 6d
SIPFN2	29	weight 13d
SIPFN2	30	weight 20d
SIPFN2	31	weight 27d
SIPFN2	32	notes for days 0 -27
SIPFN2	33	responsible 0 - 27 days
SIPFN2	34	free 1
SIPFN2	35	last user
SIPFN2	36	date of last access
SIPFN2	37	time of last access
SIPFN2	38	free 1
SIPFN2	39	free 2
SIPFN2	40	free 3
SIPFN3	1	unique patient n°
SIPFN3	2	unique newborn n°
SIPFN3	3	pregnancy number
SIPFN3	4	twin number
SIPFN3	5	ID
SIPFN3	6	Free 2
SIPFN3	7	oxygen 28d
SIPFN3	8	CPAP days 28+
SIPFN3	9	ventilation 28d
SIPFN3	10	high freq ventilation 28d
SIPFN3	11	oxygen 36 weeks
SIPFN3	12	postnatal corticoids 28 d
SIPFN3	13	Free 3
SIPFN3	14	pneumothorax 28d
SIPFN3	15	ductus arteriosus
SIPFN3	16	confirmed enterocolytis
SIPFN3	17	intracraneal haemorrhage 28d
SIPFN3	18	Free 4
SIPFN3	19	Free 5
SIPFN3	20	
SIPFN3	21	retinopathy 28d
SIPFN3	22	periventricular leucomalacia 28d
SIPFN3	23	confirmed sepsis
SIPFN3	24	Free 6
SIPFN3	25	pathogen 28d
SIPFN3	26	date of culture 28d
SIPFN3	27	mycosis 28d
SIPFN3	28	weight 34d
SIPFN3	29	weight 41d
SIPFN3	30	weight 48d
SIPFN3	31	weight 55d
SIPFN3	32	notes for days 28 +
SIPFN3	33	responsible day 28
SIPFN3	34	Free 7
SIPFN3	35	last user
SIPFN3	36	date of last access
SIPFN3	37	time of last access
SIPFN3	38	free 8
SIPFN3	39	free 9
SIPFN3	40	free 10
SIPFN4	1	unique patient n°
SIPFN4	2	unique newborn n°
SIPFN4	3	pregnancy number
SIPFN4	4	twin number
SIPFN4	5	ID
SIPFN4	6	Diagn at discharge 1
SIPFN4	7	Diagn at discharge 2
SIPFN4	8	Diagn at discharge 3
SIPFN4	9	Diagn at discharge 4
SIPFN4	10	Diagn at discharge 5
SIPFN4	11	Diagn at discharge 6
SIPFN4	12	Diagn at discharge 7
SIPFN4	13	congenital anomalies
SIPFN4	14	duration of tube
SIPFN4	15	duration of nasal CPAP
SIPFN4	16	parenteral feeding
SIPFN4	17	age start of enteral feed
SIPFN4	18	end of OG tube feeding
SIPFN4	19	lowest weight
SIPFN4	20	age at lowest weight
SIPFN4	21	age at recovered weight
SIPFN4	22	surgery
SIPFN4	23	transfusions
SIPFN4	24	weight 36w
SIPFN4	25	weight 40w
SIPFN4	26	weight at discharge
SIPFN4	27	length at discharge
SIPFN4	28	head circumference at discharge
SIPFN4	29	age at dismissal
SIPFN4	30	corrected GA in days
SIPFN4	31	corrected GA in weeks
SIPFN4	32	fraction of corrected GA
SIPFN4	33	date discharge
SIPFN4	34	time of discharge
SIPFN4	35	condition at discharge
SIPFN4	36	food at discharge
SIPFN4	37	necropsy
SIPFN4	38	place of transfer
SIPFN4	39	notes at discharge
SIPFN4	40	counselling by nurse
SIPFN4	41	responsible discharge
SIPFN4	42	last user
SIPFN4	43	date of last access
SIPFN4	44	time of last access
SIPFN4	45	free 1
SIPFN4	46	free 2
SIPFN4	47	free 3
SIPNEO	1	unique patient n°
SIPNEO	2	unique patient n°
SIPNEO	3	pregnancy number
SIPNEO	4	twin number
SIPNEO	5	GA by exam
SIPNEO	6	head circumference
SIPNEO	7	weight for gest age
SIPNEO	8	Apgar min 1
SIPNEO	9	Apgar min 5
SIPNEO	10	resuscitation
SIPNEO	11	VDRL of NB
SIPNEO	12	physical exam
SIPNEO	13	referred
SIPNEO	14	hospitalized baby
SIPNEO	15	Neonate Attended by
SIPNEO	16	neonate problems none
SIPNEO	17	death in delivery room
SIPNEO	18	TSH
SIPNEO	19	Hb-pathy
SIPNEO	20	hearing
SIPNEO	21	bleeding

Table	N°	Name of variable
SIPNEO	22	hyperbilirubinaemia
SIPNEO	23	meconium 1st day
SIPNEO	24	infection
SIPNEO	25	congenital anomaly
SIPNEO	26	neurological problems
SIPNEO	27	supine
SIPNEO	28	other neo pathologies
SIPNEO	29	code infant probl 1
SIPNEO	30	code infant probl 2
SIPNEO	31	code infant probl 3
SIPNEO	32	code infant malformation
SIPNEO	33	GA of NB reliable
SIPNEO	34	date of infant discharge
SIPNEO	35	days GA
SIPNEO	36	neonatal discharge
SIPNEO	37	food at discharge
SIPNEO	38	weight at discharge
SIPNEO	39	centile weight discharge
SIPNEO	40	days at discharge
SIPNEO	41	hours at discharge
SIPNEO	42	days NB in hospital
SIPNEO	43	comments on newborn
SIPNEO	44	length of infant
SIPNEO	45	birth weight
SIPNEO	46	centile weight/gest. age
SIPNEO	47	date of death
SIPNEO	48	time of death
SIPNEO	49	days at death
SIPNEO	50	age in hours at death
SIPNEO	51	cause of death
SIPNEO	52	newborn record n°
SIPNEO	53	last user
SIPNEO	54	date of last access
SIPNEO	55	time of last access
SIPNEO	56	free 1
SIPNEO	57	free 2
SIPNEO	58	free 3
SIPPAC	1	unique patient n°
SIPPAC	2	institution of birth
SIPPAC	3	pregnancies in this base
SIPPAC	4	deliveries in this base
SIPPAC	5	twins in this base
SIPPAC	6	single sons in base
SIPPAC	7	date of birth
SIPPAC	8	twin number adult
SIPPAC	9	gender
SIPPAC	10	birth weight
SIPPAC	11	length of infant
SIPPAC	12	usual weight
SIPPAC	13	height adult
SIPPAC	14	BMI adult
SIPPAC	15	literate
SIPPAC	16	education
SIPPAC	17	years at educational level
SIPPAC	18	total years completed
SIPPAC	19	date of death
SIPPAC	20	time of death
SIPPAC	21	cause of death
SIPPAC	22	race
SIPPAC	23	TBC
SIPPAC	24	Diabetes prior
SIPPAC	25	Hypertension
SIPPAC	26	preeclampsia
SIPPAC	27	previous other history
SIPPAC	28	reproductive tract surgery
SIPPAC	29	Infertility
SIPPAC	30	HIV+
SIPPAC	31	cardiopaty/ nephropathy
SIPPAC	32	severe medical conditional
SIPPAC	33	free 4
SIPPAC	34	years at death
SIPPAC	35	days at death
SIPPAC	36	age in hours at death
SIPPAC	37	last user
SIPPAC	38	date of last access
SIPPAC	39	time of last access
SIPPAC	40	free 1
SIPPAC	41	free 2
SIPPAC	42	free 3
SIPPAM	1	unique patient n°
SIPPAM	2	pregnancy number
SIPPAM	3	multiple pregnancy
SIPPAM	4	previous hypertension
SIPPAM	5	preeclampsia
SIPPAM	6	eclampsia
SIPPAM	7	cardiac disease
SIPPAM	8	diabetes
SIPPAM	9	urinary infection
SIPPAM	10	corioamnionitis
SIPPAM	11	hypertension induced pregn.
SIPPAM	12	IUGR
SIPPAM	13	threat premature labour
SIPPAM	14	cephalo-pelvic disproportion
SIPPAM	15	1er trim bleeding
SIPPAM	16	2nd trim bleeding
SIPPAM	17	3rd trim bleeding
SIPPAM	18	chronic anaemia
SIPPAM	19	premature rupt membranes
SIPPAM	20	puerperal infection
SIPPAM	21	puerperal bleeding
SIPPAM	22	other severe maternal condition
SIPPAM	23	code mother probl 1
SIPPAM	24	code mother probl 2
SIPPAM	25	code mother probl 3
SIPPAM	26	code mother probl 4
SIPPAM	27	comments on mat problems
SIPPAM	28	last user
SIPPAM	29	date of last access
SIPPAM	30	time of last access
SIPPAM	31	free 1
SIPPAM	32	free 2
SIPPAM	33	free 3
SIPPAR	1	unique patient n°
SIPPAR	2	Institution of delivery
SIPPAR	3	pregnancy number
SIPPAR	4	twin number
SIPPAR	5	date admitted
SIPPAR	6	gest age
SIPPAR	7	Steroids cycle
SIPPAR	8	presentation
SIPPAR	9	fetal size
SIPPAR	10	onset labour
SIPPAR	11	membranes
SIPPAR	12	date rupt membranes
SIPPAR	13	time rupt membranes
SIPPAR	14	time rupture membranes
SIPPAR	15	time of delivery
SIPPAR	16	date of delivery
SIPPAR	17	Method of Delivery
SIPPAR	18	weekday of delivery
SIPPAR	19	week corticosteroids
SIPPAR	20	indication for surgery
SIPPAR	21	death intrauterine
SIPPAR	22	episiotomy
SIPPAR	23	lacerations
SIPPAR	24	placental delivery
SIPPAR	25	placenta
SIPPAR	26	Deliv Attended by
SIPPAR	27	Mg sulphate
SIPPAR	28	regional anaesthesia
SIPPAR	29	general anaesthesia
SIPPAR	30	Analgesic tranq.
SIPPAR	31	oxytocin
SIPPAR	32	antibiotics
SIPPAR	33	company
SIPPAR	34	code medication 1
SIPPAR	35	position delivery
SIPPAR	36	responsible for delivery
SIPPAR	37	outcome
SIPPAR	38	gender of NB
SIPPAR	39	weight of NB
SIPPAR	40	centile birth weight
SIPPAR	41	indication induction
SIPPAR	42	date discharge mother
SIPPAR	43	maternal discharge
SIPPAR	44	days in hosp till delivery
SIPPAR	45	days in hosp post delivery
SIPPAR	46	cord clamping
SIPPAR	47	days in hospital
SIPPAR	48	contraceptive advice
SIPPAR	49	antirubella post partum
SIPPAR	50	comments on delivery
SIPPAR	51	last user
SIPPAR	52	date of last access
SIPPAR	53	time of last access
SIPPAR	54	free 1
SIPPAR	55	free 2
SIPPAR	56	free 3
SIPPAT	1	unique patient n°
SIPPAT	2	maternal record
SIPPAT	3	name
SIPPAT	4	family name
SIPPAT	5	address
SIPPAT	6	town
SIPPAT	7	postal code
SIPPAT	8	county
SIPPAT	9	state - province
SIPPAT	10	country
SIPPAT	11	phone
SIPPAT	12	last user
SIPPAT	13	date of last access
SIPPAT	14	time of last access
SIPPAT	15	free 1
SIPPAT	16	free 2
SIPPAT	17	free 3
SIPPAT	18	e-mail

List of SIP indicators (version 1.2)

num	indicator
1	Patients
2	Pregnancies
3	Deliveries
4	Newborn Babies
5	Live Newborn Babies
6	Stillbirths
7	Abortions
8	Mothers with problems
10	Multiple Pregnancies
11	Rate of Mult. Preg.
12	Triplets or more
13	Rate of triplets
20	Perinatal deaths I
21	Perinatal Mortality I
22	Perinatal deaths II
23	Perinatal Mortality II
24	Perinatal Mortality (per thousand)
25	Perinatal Mortality
26	Interm. Fetal deaths
27	Interm. Fetal Mortality
28	Late Fetal deaths
29	Late Fetal Mortality
30	Fetal Mortality (per thousand)
31	Fetal Mortality
32	Early Neonatal Mortality (per thousand)
33	Early Neo. Mortality
34	Late Neo. Deaths
35	Late Neo. Mortality
36	Neonatal Mortality (per thousand)
37	Neonatal Mortality (per thousand)
38	Hospital Maternal Mortality (per 100.000)
39	Maternal Mortality
40	LBW (%)
41	Rate of LBW
42	VLBW (%)
43	Rate of VLBW
44	ELBW
45	Rate of ELBW
46	Preterm Babies (%)
47	Rate of Preterm
48	Small for Gestational Age (%)
49	Rate of SGA
50	Large for Gestational Age
51	Rate of LGA
52	Adequate for Gestational Age
53	Rate of AGA
54	Spontaneous Onset
55	Rate Spont.Onset
56	Induced Onset
57	Rate Induction
58	Elective CS
59	Rate of Elect.CS
60	Spontaneous Delivery
61	Rate Spont. Delivery
62	Caesarean (%)
63	Rate of Caesarean
64	Forceps
65	Rate of Forceps
66	Other term. Pregnancy
67	Rate Other Termin.preg.
68	Fetal deaths (>=22 weeks)
69	Fetal Mortality (>=22 weeks)
70	Born dead or alive greater than 500g
71	Born dead or alive greater than 500g
72	Live Born Babies greater than 1500g
73	Rate Live Born greater than 1500g
74	Missing discharge data for babies of less 1500g
75	Rate of missing discharge data for less than 1500g
76	Pres. Vertex
77	Rate Vertex Presentation
78	Pres. Breech
79	Rate Breech Presentation
80	Pres. Transverse
81	Rate Transv. Presentation
82	Macrosomic (>4000 g)
83	Rate Macrosomic (>4000 g)
84	Antirubella prior to pregnancy
85	Rate Prior Antirubella
86	Antirubella at 10 to 15 years
87	Rate Antirubella at 10 to 15 years
88	Antirubella at 16 to 20 years
89	Rate Antirubella at 16 to 20 years
90	Antirubella at 21 to 25 years
91	Rate Antirubella at 21 to 25 years
92	Antirubella at 26 to 30 years
93	Rate Antirubella at 26 to 30 years
94	Antirubella at 31 to 35 years
95	Rate Antirubella at 31 to 35 years
96	Antirubella at 36 to 40 years
97	Rate Antirubella at 36 to 40 years
98	Antirubella at 41 to 45 years
99	Rate Antirubella at 41 to 45 years
101	Mat. Age 10 to 14
102	Rate Mat. Age 10 to 14
103	Mat. Age 35 +
104	Rate Mat. Age 35 +
105	Nulliparity
106	Rate Nulliparity
107	No Previous Gestations
108	Rate No Previous Gestations
109	Parity >=4
110	Rate Parity >=4
111	Previous Gestations >=4
112	Rate Previous Gestations >=4
113	Mother alone
114	Rate of Mother alone
115	Education none
116	Rate of no education
117	Elementary education
118	Rate of Elementary education
119	No Antenatal visits
120	Rate of No Antenatal visits
121	Antenatal visits 1-4
122	Rate of Antenatal visits 1-4
123	InterBirth Int <6 months
124	Rate of InterBirth Int <6 months
125	Smoking
126	Rate of Smoking
127	Previous abortions
128	Rate of Previous abortions
129	Previous LBW
130	Rate of Previous LBW
131	Previous Fetal death
132	Rate of Previous Fetal deaths
133	Previous Neonatal deaths
134	Rate of Previous Neonatal deaths
135	BMI>29
136	Rate of BMI>29
137	Chronic Hypertension
138	Rate of Chronic Hypertension
139	Diabetes
140	Rate of Diabetes
141	VDRL+
142	Rate of VDRL+
143	Isoinmunization
144	Rate of Isoinmunization
145	Preeclampsia
146	Rate of Preeclampsia
147	Chronic anaemia
148	Rate of Chronic anaemia
149	One or more risk factors
150	Rate with one or more risk factors
151	No risk factors
152	Rate with no risk factors
153	Education < 4 years
154	Rate of Education < 4 years
155	Birth by Physician
156	Rate of Birth by Physician
157	Birth by RN/Midwife
158	Rate of Birth by RN/Midwife
159	Birth by Auxiliary Personnel
160	Rate of Birth by Auxiliary Personnel
161	Birth by TBA
162	Rate of Birth byTBA
163	Birth by unqualified attendant
164	Rate of Birth by unqualified attendant
165	Hospitalized New Born
166	Rate of Hospitalization of New Born Babies
167	Fetal death during pregnancy
168	Rate of Fetal death during pregnancy
169	Fetal Death during labour
170	Rate of Fetal Death during labour
171	Cong.Defects of New born

num	indicator
172	Rate of Cong.Defects of New Born
173	Referrals from other level of care
174	Rate of Referrals from other level of care
175	Antirubella during pregnancy
176	Rate Antirubella during pregnancy
177	Antirubella post partum
178	Rate Antirubella post partum
181	LBW amongst smokers
182	Rate LBW amongst smokers
183	VLBW amongst smokers
184	Rate VLBW amongst smokers
185	ELBW amongst smokers
186	Rate ELBW amongst smokers
187	LBW amongst NON smokers
188	Rate LBW amongst NON smokers
189	VLBW amongst NON smokers
190	Rate VLBW amongst NON smokers
191	ELBW amongst NON smokers
192	Rate ELBW amongst NON smokers
193	Cong.Rubella Synd. confirmed in NB
194	Rate Cong.Rubella Synd. confirmed in NB
195	Rubella during pregnancy
196	Rate Rubella during pregnancy
200	Total Risk
201	Age 15-34
202	Rate age 15-34
205	Parity 1-3
206	Rate Parity 1-3
207	Previous Gestations 1-3
208	Rate Previous Gestations 1-3
209	Mother with husband
210	Rate of Mother with husband
211	Secondary Education
212	Rate Secondary Education
213	Antenatal visits >=5
214	Rate of antenatal visits >=5
215	InterBirth Int. >=6 months
216	Rate of InterBirth Int. >=6 months
217	Non smokers
218	Rate of non smokers
219	No Previous Abortions
220	Rate with No Previous Abortions
221	No Previous LBW
222	Rate with no Previous LBW
223	No Previous Fetal deaths
224	Rate with no Previous Fetal deaths
225	No Previous neonatal deaths
226	Rate with no Previous neonatal deaths
227	BMI >29
228	Rate with BMI >29
229	No Chronic Hypertension
230	Rate with no Chronic Hypertension
231	Non Diabetics
232	Rate of non Diabetics
233	VDRL-
234	Rate VDRL-
235	No isoinmunization
236	Rate with no isoinmunization
237	No preeclampsia
238	Rate with no preeclampsia
239	No Chronic anaemia
240	Rate of no Chronic anaemia
241	Total Risk of Population
243	Pregnancies after the first one
244	Rate Pregnancies after the first
245	Births after the first
246	Rate Births after the first
263	Birth by qualified attendant
264	Rate of Birth by qualified attendant
271	No Defects of still or live births
272	Rate of No Defects of still or live births
273	Not referred from other level of care
274	Rate of Not referred from other level of care
295	No tetanus toxoid
296	Rate of no tetanus toxoid
297	Current Tetanus Toxoid
298	Rate Current Tetanus Toxoid
301	Illiteracy
302	Rate Illiteracy
305	Hypertension induced in pregnancy
306	Rate Preg. Induc. HT
309	Eclampsia
310	Rate Eclampsia
311	Cardiop/nephrop.
312	Rate Cardip/Nephrop.
315	Diabetes I
316	Rate Diabetes I
317	Diabetes II
318	Rate Diab, II
319	Diabetes Gest.
320	Rate Diab. Gest.
321	Other Serious Condition Pregn.
322	Rate Other Serious Condition Pregn.
323	Corioamnionitis
324	Rate Neg. Corioamnionitis
325	Urinary infection
326	Rate Corioamnionitis
327	Threat. Prem. Labour
328	Rate Threat Prem Labour
329	IUGR
330	Rate IUGR
331	Prem Rupt. membranes
332	Rate Prem Rupt. Membranes
333	1st trim bleed.
334	Rate Hem. 1st trim
335	2nd trim bleed.
336	Rate Hem. 2nd trim
337	3rd trim bleed.
338	Rate Hem. 3rd trim
339	Post. Part. Bleeding
340	Rate Hem. Post Partum
341	Puerperal infection
342	Rate Puerperal Infection
343	VDRL + before 20 wks
344	Rate positive VDRL before 20 weeks
345	VDRL + >20 wks
346	Rate positive VDRL > 20 weeks
399	Birth by unqualified attendant
400	Rate Labour Not Qualified Pers.
401	Age 10 to 15
402	Rate mothers age 10 to 15
403	Age 16 to 20
404	Rate mothers age 16 to 20
405	Age 21 to 25
406	Rate mothers age 21to 25
407	Age 26 to 30
408	Rate mothers age 26 to 30
409	Age 31 to 35
410	Rate mothers age 31 to 35
411	Age 36 to 40
412	Rate mothers age 36 to 40
413	Age 41 to 45
414	Rate mothers age 41 to 45
415	Moderate Asphyxia (4-6)
416	Rate of Moderate Asphyxia (4-6)
417	Severe Asphyxia (0-3)
418	Rate of severe asphyxia (0-3)
419	Moderate Asphyxia (4-6) 5th minute
420	Rate of Moderate Asphyxia (4-6) 5th minute
421	Severe Asphyxia (0-3) 5th minute
422	Rate of severe asphyxia (0-3) 5th minute
440	NB babies in delivery room
441	NB babies in transport
442	NB 0 to 27 days
443	NB 28 days or more
444	NB babies at discharge
450	Missing FREE1 in Personal Data
451	Rate Missing FREE1 in Personal Data
452	Missing FREE2 in Personal Data
453	Rate Missing FREE2 in Personal Data
454	Missing FREE3 in Personal Data
455	Rate Missing FREE3 in Personal Data
456	Missing FREE1 in Patient
457	Rate Missing FREE1 in Patient
458	Missing FREE2 in Patient
459	Rate Missing FREE2 in Patient
460	Missing FREE3 in Patient
461	Rate Missing FREE3 in Patient
462	Missing FREE1 in Pregnancy
463	Rate Missing FREE1 in Pregnancy
464	Missing FREE2 in Pregnancy
465	Rate Missing FREE2 in Pregnancy
466	Missing FREE3 in Pregnancy
467	Rate Missing FREE3 in Pregnancy

num	indicator
468	Missing FREE1 in Maternal Problems
469	Rate Missing FREE1 in Maternal Problems
470	Missing FREE2 in Maternal Problems
471	Rate Missing FREE2 in Maternal Problems
472	Missing FREE3 in Maternal Problems
473	Rate Missing FREE3 in Maternal Problems
474	Missing FREE1 in Delivery
475	Rate Missing FREE1 in Delivery
476	Missing FREE2 in Delivery
477	Rate Missing FREE2 in Delivery
478	Missing FREE3 in Delivery
479	Rate Missing FREE3 in Delivery
480	Missing FREE1 in New Born
481	Rate Missing FREE1 in New Born
482	Missing FREE2 in New Born
483	Rate Missing FREE2 in New Born
484	Missing FREE3 in New Born
485	Rate Missing FREE3 in New Born
486	FHN-Missing FREE1 in NB in delivery room
487	FHN-Rate Missing FREE1 in NB in delivery room
488	FHN-Missing FREE2 in NB in delivery room
489	FHN-Rate FHN-Missing FREE2 in NB in delivery room
490	FHN-Missing FREE3 in NB in delivery room
491	FHN-Rate FHN-Missing FREE3 in NB in delivery room
492	FHN-Missing FREE1 in NB in transport
493	FHN-Rate Missing FREE1 in NB in transport
494	FHN-Missing FREE2 in NB in transport
495	FHN-Rate Missing FREE2 in NB in transport
496	FHN-Missing FREE3 in NB in transport
497	FHN-Rate Missing FREE3 in NB in transport
498	FHN-Missing FREE1 in NB 0 to 27 days
499	FHN-Rate Missing FREE1 in NB 0 to 27 days
500	FHN-Missing FREE2 in NB 0 to 27 days
501	FHN-Rate Missing FREE2 in NB 0 to 27 days
502	FHN-Missing FREE3 in NB 0 to 27 days
503	FHN-Rate Missing FREE3 in NB 0 to 27 days
504	FHN-Missing FREE1 in NB 28 days and more
505	FHN-Rate Missing FREE1 in NB 28 days and more
506	FHN-Missing FREE2 in NB 28 days and more
507	FHN-Rate Missing FREE2 in NB 28 days and more
508	FHN-Missing FREE3 in NB 28 days and more
509	FHN-Rate Missing FREE3 in NB 28 days and more
510	FHN-Missing FREE1 in NB at discharge
511	FHN-Rate Missing FREE1 in NB at discharge
512	FHN-Missing FREE2 in NB at discharge
513	FHN-Rate Missing FREE2 in NB at discharge
514	FHN-Missing FREE3 in NB at discharge
515	FHN-Rate Missing FREE3 in NB at discharge
601	FHN-Missing Antenatal Visits
602	FHN-Rate Missing Antenatal Visits
603	FHN-Missing Antenatal Steroids
604	FHN-Rate Missing Antenatal Steroids
605	FHN-Caesarean Section
606	FHN-Rate Caesarean Section
607	FHN-Oxygen
608	FHN-Rate Oxygen
609	FHN-Mask
610	FHN-Rate Mask
611	FHN-Tube
612	FHN-Rate Tube
613	FHN-Cardiac Massage
614	FHN-Rate Cardiac Massage
615	FHN-Adrenalin
616	FHN-Rate Adrenalin
617	FHN-No Resuscitation
618	FHN-Rate of no Resuscitation
619	FHN-Hyaline Membrane
620	FHN-Rate of HMD
621	FHN-Assisted ventilation
622	FHN-Rate of Assisted ventilation
623	FHN-Surfactant
624	FHN-Rate of Surfactant
625	FHN-Necrotizing Enterocolitis
626	FHN-Rate Necrotizing Enterocolitis
627	FHN-Early Sepsis
628	FHN-Rate Early Sepsis
629	FHN-Late Sepsis
630	FHN-Rate Late Sepsis
631	FHN-Retinopathy ROP
632	FHN-Rate Retinopathy ROP
651	No Perinatal Card produced by patient
652	Rate no Perinatal Card produced by patient
653	No iron supplementation
654	Rate no iron supplementation
655	No VDRL test in pregnancy
656	Rate no VDRL test in pregnancy
657	No Bacteriuria test in pregnancy
658	Rate no Bacteriuria test in pregnancy
659	No MgSO4 and preeclampsia
660	Rate no MgSO4 with preeclampsia
661	No MgSO4 and eclampsia
662	Rate no MgSO4 with eclampsia
663	No corticoids to patients of 36 weeks or less
664	Rate no corticoids to patients of 36 weeks or less
665	Spontaneous termination & PRM at 33 weeks or less
666	Rate spont termination & PRM at 33 weeks or less
667	Supine position in delivery
668	Rate of supine position in delivery
669	Episiotomy in primíparous
670	Rate of episiotomy in primíparous
671	Spontaneous termination at 39 weeks or more
672	Rate spontaneous termination at 39 weeks or more
673	Unaccompanied in labour
674	Rate of unaccompanied in labour
675	No ATB in CS
676	Rate of no ATB in CS
677	No oxitocin in third stage
678	Rate no oxitocin in third stage
679	Not exclusive breast feeding for roomed-in NB
680	Rate of not exclusive breast feed for roomed-in NB
681	Healthy NB not roomed-in
682	Rate of healthy NB not roomed-in
683	No surfactant for NB´s intubated due to RDS
684	Rate no surfactant for NB´s intubated due to RDS
685	External version not attempted at 38 weeks or later
686	Rate of external version not attempted 38w or later
687	Failed external version at 38 weeks or later
688	Rate failed external version at 38 weeks or later
689	VIH + and no treatment
690	Rate of VIH + and no treatment
691	Nulliparous with spontaneous delivery
692	Rate of Nulliparous with spontaneous delivery
993	Total records in SIPPAT
994	Total records in SIPPAC
995	Total records in SIPEMB
996	Total records in SIPPAR

num	indicator
997	Total records in SIPPAM
998	Total records in SIPNEO
999	Total records in 6 tables
1000	Total / total
1001	Missing Data
1002	Rate Missing Data
1003	Missing Name-Address Data
1004	Rate Missing Name-Address Data
1005	Missing Patient Data
1006	Rate Missing Patient Data
1007	Missing Pregnancy Data
1008	Rate Missing Pregnancy Data
1009	Missing Birth Data
1010	Rate Missing Birth Data
1011	Missing Mat. Problems Data
1012	Rate Missing Mat. Problems Data
1013	Missing New Born Data
1014	Rate Missing New Born Data
1015	Missing Twin Number
1016	Rate Missing Twin Number
1020	Missing Perinatal Mortality
1021	Rate Missing Perinatal Mortality
1026	Missing Inter.Fet.Mortality
1027	Rate Missing Inter. Fet.Mortality
1032	Missing Early Neo. Mortality
1033	Rate Missing Early Neo. Mortality
1036	Missing Discharge Nborn
1037	Rate Missing Discharge Nborn
1038	Missing Mat. Discharge
1039	Rate Missing Mat. Discharge
1040	Missing Birth weight
1041	Rate Missing Birth weight
1046	Missing Gestational Age
1047	Rate of Missing Gestational Age
1048	Missing GA and Birth weight
1049	Rate Missing GA and Birth weight
1054	Missing Onset
1055	Rate Missing Onset
1060	Missing Termination
1061	Rate Missing Termination
1070	Missing Birth weight
1071	Rate Missing Birth weight
1076	Missing Presentation
1077	Rate Missing Presentation
1084	Missing Antirubella
1085	Rate Missing Antirubella
1086	Missing Antirubella and age
1087	Rate Missing Antirubella and age
1101	Missing Age
1102	Rate Missing Age
1105	Missing Parity
1106	Rate Missing Parity
1114	Missing Civil Status
1115	Rate Missing Marital Status
1116	Missing Educ. level
1117	Rate Missing School level
1119	Missing Visits
1120	Rate Missing Visits
1123	Missing Term. Prev. Pregn.
1124	Rate Missing Date Previous Pregn. Term.
1125	Missing Cigarettes per day
1126	Rate Missing Cigarettes per day
1127	Missing Abortion History
1128	Rate Missing Abortion History
1129	Missing LBW History
1130	Rate Missing Previous LBW
1131	Missing Previous Fetal Death
1132	Rate Missing Previous Fetal Death
1133	Missing Previous Neonatal death
1134	Rate Missing Prev. Neo.Death
1137	Missing Chronic HT
1138	Rate Missing Chronic HT
1139	Missing Diabetes
1140	Rate Missing Diabetes
1141	Missing VDRL
1142	Rate Missing VDRL
1143	Missing Isoinmunization
1144	Rate Missing Isoinmunization
1145	Missing Preeclampsia
1146	Rate Missing Preeclampsia
1165	Missing Hospital. New Born
1166	Rate Missing Hospitalization New Born
1167	Missing Fetal death and/or time
1168	Rate Missing fetal death and/ or time
1169	Missing Fetal Death < 20 weeks
1170	Rate Missing Fetal Death < 20 weeks
1171	Missing Malformations
1172	Rate Missing Malformation
1173	Missing Referral
1174	Rate Missing Referral
1175	Missing Antirubella Preg.
1176	Rate Missing Antirubella Pregn.
1177	Missing Antirubella PostPartum
1178	Rate Missing Antirubella Postpartum
1181	Missing birth weight or smoke
1182	Rate Missing birth weight or smoke
1193	Missing Neo.Probl.Code
1194	Rate Missing Neo. Probl. Code
1195	Missing Mat.Probl.Code
1196	Rate Missing Mat. Probl. Code
1205	Missing Fetal Death
1206	Rate of Missing Fetal Death
1210	Missing multiple pregnancy
1211	Rate Missing data multiple pregnancy
1243	Missing pregnancies after first
1244	Rate Missing pregnancies after first
1297	Missing Tetanus toxoid
1298	Rate Missing Tetanus toxoid
1309	Missing Eclampsia
1310	Rate Missing Eclampsia
1343	Missing positive VDRL before 20 weeks
1344	Rate Missing VDRL before 20 weeks
1345	Missing positive VDRL > 20 weeks
1346	Rate Missing VDRL > 20 weeks
1399	Missing Qualification Pers. Labour
1400	Rate Missing Qualif.Person Delivery
1416	Missing asphyxia
1417	Rate Missing asphyxia
1420	Missing asphyxia 5th minute
1421	Rate Missing asphyxia 5th minute
1500	Missing data Neonatal Hospitalization (FHN)
1501	Rate Missing data Neonatal Hospitalization (FHN)
1502	Missing data FHN labour room
1503	Rate Missing data FHN labour room
1504	Missing data FHN transportation
1505	Rate Missing data FHN transportation
1506	Missing data FHN 0 to 27 days
1507	Rate Missing data FHN 0 to 27 days
1508	Missing data FHN 28 days
1509	Rate Missing data FHN 28 days
1510	Missing data FHN New Born Discharge
1511	Rate Missing data FHN New Born Discharge
1520	FHN-Missing birth weight
1521	Rate FHN-Missing birth weight
1522	FHN-Missing death in delivery room
1523	Rate FHN-Missing death in delivery room
1524	FHN-Missing death during transport
1525	Rate FHN-Missing death during transport
1526	FHN-Missing origin data
1527	Rate FHN-Missing origin data
1528	FHN-Missing admission weight
1529	Rate FHN-Missing admission weight
1530	FHN-Missing early sepsis data
1531	Rate FHN-Missing early sepsis data
1532	FHN-Missing confirmed sepsis data
1533	Rate FHN-Missing confirmed sepsis data
1534	FHN-Missing dismissal condition
1535	Rate FHN-Missing dismissal condition
1536	FHN-Missing diagnosis 1
1537	Rate FHN-Missing diagnosis 1
1538	FHN-Missing discharge weight
1539	Rate FHN-Missing discharge weight