

## CONGENITAL SYPHILIS AND SHARED CARE BETWEEN MATERNITY AND PRIMARY CARE

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**Abstract:** Congenital syphilis (CS) is a public health problem and the treatment of the newborn (NB), properly, reduces clinical manifestations and increases serological cure in the third month. The treatment of newborns with CS without neurosyphilis is performed with crystalline penicillin or procaine and lasts for 10 days. We aim to describe the implementation of shared maternity care with primary care for CS cases without neurosyphilis, in order to reduce hospitalization time and humanize care. With hospitalization in a pathological unit and a better relationship between the family and the health team, the shared care of the SC provided an increase in the mother-child bond with a reduction in the time of separation, and a decrease in the risk of weaning due to the separation of the binomial. mother-baby. In addition, it contributed to the reduction of the risk of nosocomial infection and the optimization of Intermediate Care beds.

**Keywords:** Congenital syphilis, Shared care, Primary care, Maternity.

## INTRODUCTION

Congenital syphilis, despite being a preventable condition, still remains a serious public health problem, showing gaps especially in prenatal care (Domingos, 2021).

In the maternity ward, newborns should be investigated for congenital syphilis, through a careful clinical and epidemiological assessment of the maternal situation, associated with clinical-laboratory assessment and imaging tests in the child. Children with congenital syphilis are classified according to the criteria of the Clinical Protocol and Therapeutic Guidelines for the Prevention of Mother-to-Child Transmission of HIV, Syphilis and Viral Hepatitis / Ministry of Health (Brasil, 2019).

The child with CS without neurosyphilis can be treated with Benzylpenicillin procaine

in an environment outside the hospital unit, intramuscularly, or with Benzylpenicillin potassium/crystalline, with hospitalization, in both situations for a period of 10 days (Brasil, 2019). In cases of children treated improperly, at the recommended dose and/or duration of treatment, the child must be summoned for clinical and laboratory reassessment and restart the treatment, following the previously described schemes.

*The Hospital Municipal Universitário de São Bernardo do Campo* (HMU-SBC) is the only public maternity hospital in the city, with ONA 2 accreditation, and stands out for being categorized as a Baby-Friendly Hospital and adopting the Kangaroo Method. The HMU performs around 400 births per month (average of 4,800 births per year), which represents 49.1% of births in São Bernardo do Campo at the institution, until 2016, all newborns (NB) with congenital syphilis, without neurosyphilis, remained hospitalized for complete intravenous treatment. Faced with the need to reduce hospitalization time and decrease adverse events, sharing perinatal care has become a necessity and appears as an action strategy.

O objetivo deste artigo é descrever a interface entre a maternidade e a Atenção Básica no cuidado perinatal integrado do RN com sífilis congênita, no município de São Bernardo do Campo no período de março de 2016 a junho de 2021.

## **SHARED CARE METHODOLOGY**

For shared care, meetings were held between the departments of Epidemiological Surveillance, Primary Care and Maternity, to establish the selection and treatment protocols, flows and monitoring. All health professionals involved were trained and together they took responsibility for the quality of perinatal care and patient safety.

General norms of shared care:

### Population to be served

- Newborns with congenital syphilis, without neurosyphilis.
- Mother, father and family of the newborn with CS without neurosyphilis.

### Responsibilities of the health teams:

#### Maternity:

- Identify selected cases for sharing.
- Guide the mother and support matrix to sharing
- Offer emotional support and encourage caregivers at all times.
- Guide and encourage parents in the prevention of sexually transmitted infections, with an emphasis on syphilis.
- Guide the family at the time of hospital discharge to create conditions for communication with the team and ensure continuity of care.
- Monitor the link between mother and newborn with Primary Care.
- Ensure treatment of congenital syphilis.
- Participate in in-service training, as a basic condition to guarantee the quality of care.

#### Basic Attention:

- Encouraging the maintenance of NB treatment with penicillin G procaine in Primary Care.
- Monitor adherence to treatment.
- Carry out an active search in cases of delay or failure to take the medication properly.
- Encourage the prevention of sexually transmitted infections, with an emphasis on syphilis.
- Ensuring access to treatment for congenital syphilis.
- Participate in in-service training as a basic condition to ensure the quality of health care.
- Encouraging the link between parents

and/or support matrix with the Basic Health Unit (UBS), to ensure the follow-up of the NB in childcare and the follow-up of congenital syphilis, for a period of up to 2 years.

**Inclusion and exclusion criteria:**

Inclusion criteria:

- NB with congenital syphilis.
- NB with clinical stability.
- NB without neurosyphilis.
- Mother having performed prenatal care (number equal to or greater than six consultations)
- Mothers and family members understand the importance of the newborn's treatment and agree on shared care.
- Possess a support matrix.

- Be a resident of the municipality of São Bernardo do Campo.

Exclusion criteria:

- High economic vulnerability, which prevents the caregiver from accompanying the NB to receive the medication.
- Weaknesses identified by the Primary Care team, which may be a barrier to the treatment of the NB.

**Phases**

The shared care process is structured in three stages (Figure 1). The election of the case, the construction of the unique therapeutic project and the follow-up, which is, as well as the monitoring, carried out by a multidisciplinary team with a doctor, nurse, social worker, psychologist and pharmacist,

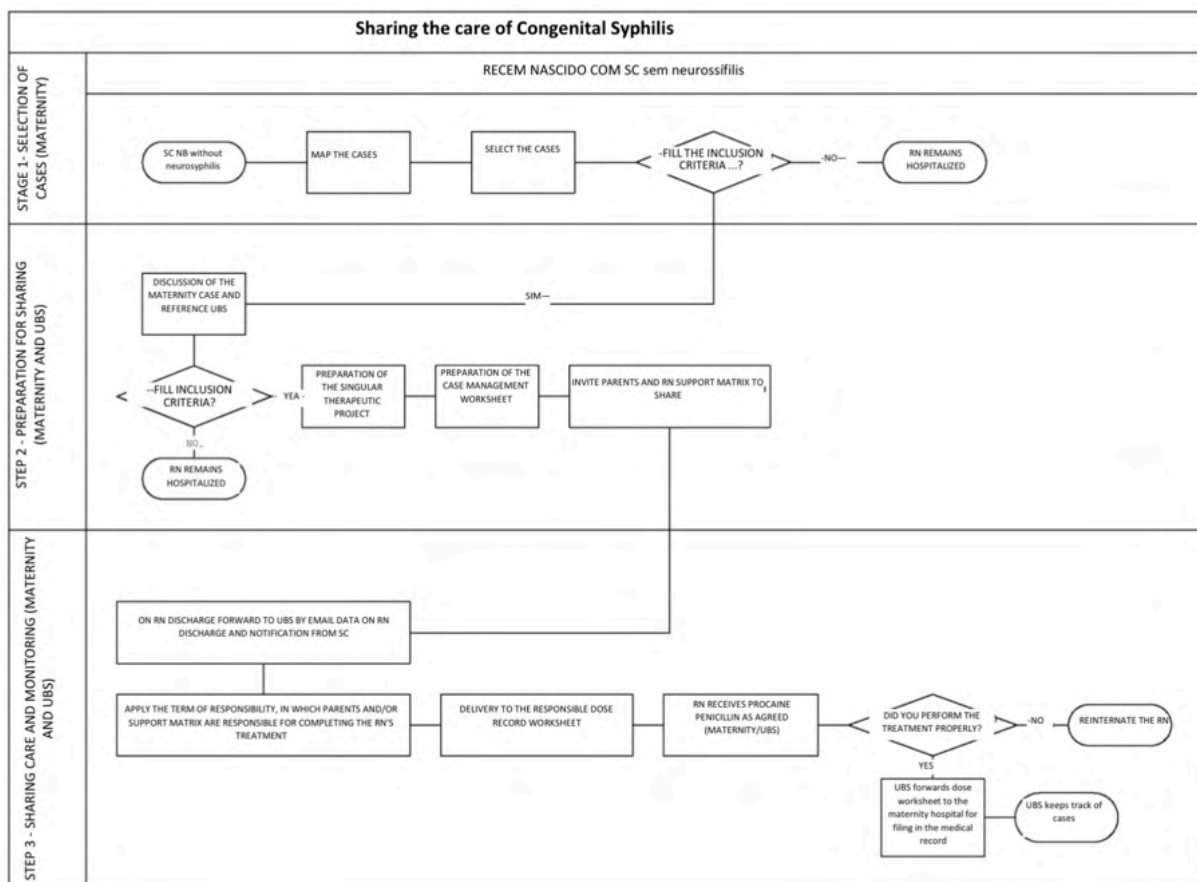


Figure 1 - Flowchart of the Steps of Sharing Congenital Syphilis Care

with different perspectives on assistance and care.

### **1st Phase – Selection of CS cases for sharing care**

- Mapping the cases of congenital syphilis in the maternity and ICU – survey of CS cases without neurosyphilis.
- Select the cases:
  - Welcoming parents and family in the Neonatal Unit.
  - Check parents' knowledge about syphilis and guide the importance of treatment and prevention.
  - Identify the social, psychological and organic aspects that influence the case.
  - Identify all stakeholders, vulnerabilities and the existing support network.
  - Identify whether the mother and/or caregivers have the desire to share care, availability of time and support matrix.
  - Clarify about the health conditions of the NB and about the importance of the care provided, about the team, the routines, the treatment and the sharing of care with Primary Care.

If the inclusion criteria are properly met and there are no exclusion criteria, the case will be selected for care sharing.

### **2nd Phase – Preparing to share**

- Discussion of the case between the maternity unit and the reference UBS.
  - Check with the reference team if the case has any barriers to sharing. If there is any impediment to care, the NB will remain hospitalized to receive treatment with crystalline penicillin.
- Preparation of the Singular Therapeutic Project:
  - The minimum team (maternity and UBS) is defined, which will be monitoring the case and the nurses

(maternity and UBS) who will monitor the case.

- Care will be tailored to the individual needs of the NB and caregivers.
- The maternity nurse checks with the UBS if it has the availability of procaine penicillin. If not, he will contact the maternity pharmacist, who will make the supplies available.
- Establishment of goals, with definition of the place, time and days of care for the application of procaine penicillin, which will be agreed with those responsible for the NB.
- Preferably, in the Basic Health Unit, the application of procaine penicillin will be carried out on working days, and in the maternity ward on holidays and weekends, in the morning, so that there is sufficient time to carry out the active search in cases of delays or absenteeism. It is important that there is consensus between those responsible for the NB, the support matrix and health professionals.
- Schedule the day and time that the NB will start the medication at the UBS, as well as the places and times until the end of the medication.
- Define the tasks and responsibilities of each one.
- Completion of the case management worksheet (Figure 2).
- The NB's mother and support matrix are invited to share care.

### **3rd Phase - Sharing care and monitoring.**

- During the entire process, the participation of those responsible for the RN will be encouraged, and support will be offered.
- Upon discharge from the maternity ward, a copy of the notification of congenital syphilis and all the NB

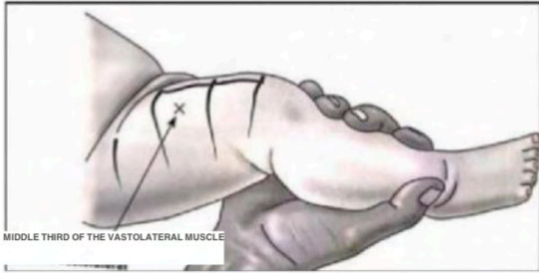
# DAILY CONTROL OF BENZYL PENICILLIN PROCAINE ADMINISTRATION - VIA IM IN A NEONATAL PATIENT

## Patient Identification

Label

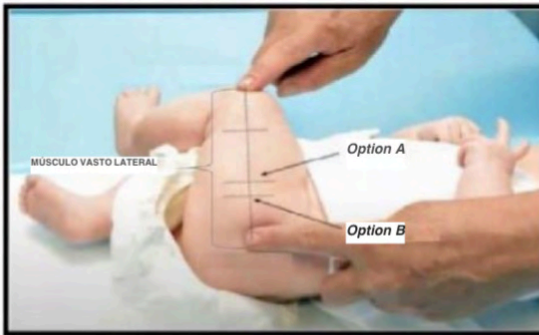
|                                  |
|----------------------------------|
| MEDICAL PRESCRIPTION FOR UBS/HMU |
| UBS:                             |
| DOSE;                            |
| VIA:                             |
| TREATMENT TIME (DAYS):           |
| Doctor responsible               |

**VAST LATERAL MUSCLE ADMINISTRATION - MIDDLE THIRD**



**WARNING**

- Reconstitute the drug in 2mL of distilled water.
- MAXIMUM VOLUME ALLOWED for IM administration in neon acts: 0.5 mL
- If the prescribed volume is greater than 0.5 ml, the dose must be divided into two applications.



|                        |
|------------------------|
| <b>LIMB</b>            |
| MIE Lower Left Limb    |
| MID ■ Lower Right Limb |

|  |
|--|
| <b>APPLICATION REGION</b>                        |
| Option A: ANTERIOR SIDE OF THE LOWER THIGH       |
| Option B: ANTERO-LATERAL SIDE OF THE UPPER THIGH |

START OF TREATMENT \_\_/\_\_/\_\_

Nurse responsible for Treatment Control at the HMU: Maternity Nursing Coordinator

Telephone: 4365-1480, Extension 1181/1182

Nurse Responsible for Treatment Control at the UBS: \_\_\_\_\_

Dose administration control: On the obverse of this form \*

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|  |   |                                      |             |       |      |              |         |
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| <div style="border: 1px solid black; width: 100px; height: 100px; margin: auto;"> <p style="margin: 0;">label</p> </div> | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">MEDICAL PRESCRIPTION FOR UBS AND HMU</td> </tr> <tr> <td style="padding: 2px;">MEDICATION:</td> </tr> <tr> <td style="padding: 2px;">DOSE:</td> </tr> <tr> <td style="padding: 2px;">VIA:</td> </tr> <tr> <td style="padding: 2px;">TIME COURSE:</td> </tr> <tr> <td style="padding: 2px;">DOCTOR:</td> </tr> </table> | MEDICAL PRESCRIPTION FOR UBS AND HMU | MEDICATION: | DOSE: | VIA: | TIME COURSE: | DOCTOR: |
| MEDICAL PRESCRIPTION FOR UBS AND HMU   |   |                                      |             |       |      |              |         |
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| TIME COURSE:   |   |                                      |             |       |      |              |         |
| DOCTOR:  |   |                                      |             |       |      |              |         |

Figure 2- Case Management Worksheet



and mother's data are forwarded by electronic mail (e-mail) to the UBS.

- Upon discharge, the maternity nurse reorients the mother and the family member about syphilis and the importance of treatment, and applies the Term of Responsibility (figure 3), in which the person responsible agrees and takes responsibility for completing the treatment of the NB, taking the NB to the UBS or to the maternity hospital, as agreed.
- Inform those responsible for the references of the maternity and UBS, and that these will be the main contact between those responsible for the NB and the team.
- The dose registration worksheet containing the prescription, the place of application of procaine penicillin, as well as the place and time at which they should take the NB must be delivered to those responsible. The doses performed will be confirmed and monitored by the health team. At the end of the treatment, the UBS must forward this worksheet to the maternity hospital, which will be filed in the NB's chart.
- If the NB does not attend the UBS or the maternity unit on the agreed days, an active search is planned, and if any dose has been missed, readmission will be arranged for retreatment. If the family is resistant to readmission, a case of negligence is established and the maternity unit will communicate the case to the Guardianship Council.
- After the end of treatment, the NB will continue to be monitored at the Basic Health Unit for childcare and follow-up of CS, for a period of up to two years.

## RESULTS

Care sharing was implemented in March

2016 at the Intermediate Care Unit (ICU), and in 2019 at the maternity hospital. The 34 UBS in the municipality, articulated with the maternity unit, provide shared care.

In the period from March 2016 to June 2021, we had 895 cases of congenital syphilis notified. Of these, who had an indication of crystalline penicillin or procaine penicillin, there were 243 (27%). 123 cases were chosen for shared care with Primary Care, allowing 50.3% of timely hospital discharge. So far, there has been 100% adherence to the proposed method, without any readmissions. All newborns with shared care-maintained breastfeeding during CS treatment.

The main causes of non-sharing of care for the treatment of CS were: residing in another municipality, unsuccessful attempt to collect cerebrospinal fluid, economic vulnerability, lack of support matrix and NB without indication of discharge due to prematurity.

## LESSONS AND LEARNING

Congenital syphilis remains a serious public health problem, not infrequently with sequelae in the NB, which is a burden for the child and family, with significant implications and expenses for health services (Owusu, 2013).

Treatment of CS with penicillin reduces clinical manifestations and increases serological cure in the third month of newborns with a confirmed diagnosis or with highly probable syphilis, or even with possible congenital syphilis (Walker, 2019). As recommended, newborns with CS without neurosyphilis should receive crystalline penicillin or procaine. The shared care of SC proposes the timely discharge of the NB, reducing the length of stay and the cost of treatment, thus contributing to a more humanized treatment.

So far, there has been an increase in syphilis cases shared with Primary Care, from 35 to



TERM OF RESPONSIBILITY TREATMENT OF PATHOLOGY UNDER ICD10 A50.0

Me (father, mother, guardian) \_\_\_\_\_, RG/CPF holder \_\_\_\_\_, responsible for the patient \_\_\_\_\_ enrolled in HMU-SBC under the n<sup>o</sup>, I agree to the guidelines below and undertake to follow them, aware that they are based on the recommendations of the Ministry of Health, and aim to provide adequate treatment and follow-up of cases under ICD A50.0.

- 1) I undertake to complete the treatment with Procaine Penicillin 50,000Ui/kg/day IM 1 **once a day, until** completing 10 days, aware that if you miss 01 (one) day, the patient must start the entire treatment again. Will receive \_\_\_\_\_ doses at UBS \_\_\_\_\_, from \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ until \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.
- 2) I was advised about the Compulsory Notification and the need for patient follow-up at the UBS. Proper notification? ( ) yes ( ) no.
- 3) I was forwarded to UBS: \_\_\_\_\_, with appointment for the day \_\_\_\_\_ / \_\_\_\_\_, time: \_\_\_\_\_ hours.
- 4) I also promise not to miss appointments and in case I miss an appointment, I will contact you for a new appointment..

São Bernardo do Campo, \_\_\_\_ of \_\_\_\_\_ of \_\_\_\_\_.

Signature of the responsible

RG

Stamp and signature of the professional responsible for the guidelines

| Exam Date | Exam                          | Result of HMU-SBC |
|-----------|-------------------------------|-------------------|
|           | VDRL mother                   |                   |
|           | VDRL of NB (peripheral blood) |                   |
|           | VDRL LCR                      |                   |
|           | RX long boned                 |                   |
|           | Blood count                   |                   |

Figure 3 - Term of responsibility

| Year  | SC No. notified | No. and % SC without neurosyphilis |       | SC with shared care |       |
|-------|-----------------|------------------------------------|-------|---------------------|-------|
|       |                 | Nº                                 | %     | Nº                  | %     |
| 2016  | 128             | 42                                 | 32,81 | 15                  | 35,71 |
| 2017  | 138             | 75                                 | 54,35 | 22                  | 29,33 |
| 2018  | 151             | 31                                 | 20,53 | 19                  | 61,29 |
| 2019  | 166             | 31                                 | 18,67 | 20                  | 64,52 |
| 2020  | 181             | 31                                 | 17,13 | 22                  | 70,97 |
| 2021* | 131             | 33                                 | 25,19 | 25                  | 75,76 |
| Total | 895             | 243                                | 27,15 | 123                 | 50,62 |

Figure 4 – Reported cases of CS, with indication of crystalline penicillin or procaine and number of cases with shared care.

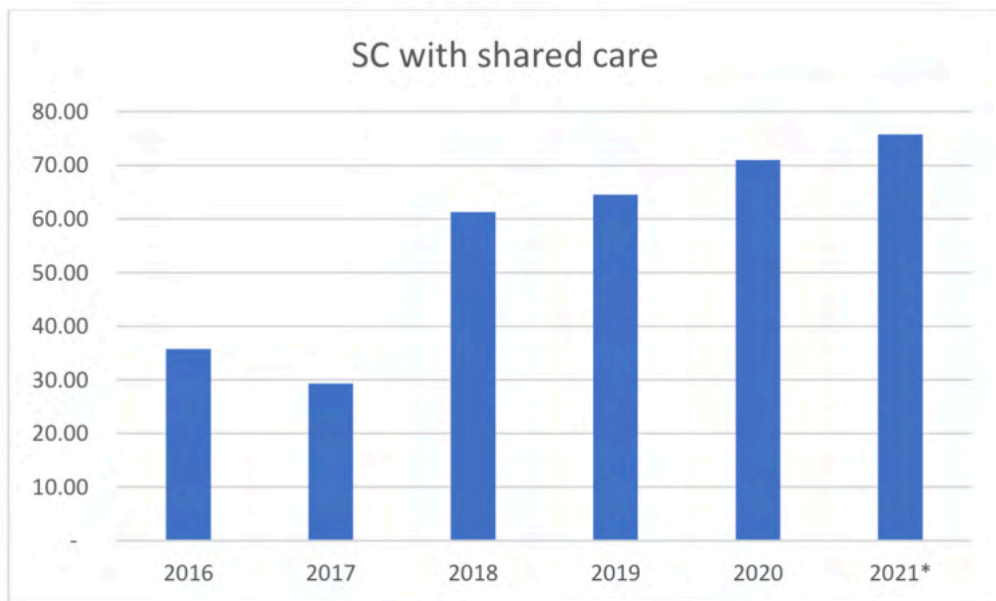


Figure 5 – Percentage of CS cases with shared care, per year

75% between 2016 and 2021 respectively, without any case of readmission, with good acceptance by parents and the care matrix. support, as well as the health teams of the Maternity and Primary Care. During the treatment of SC, breastfeeding was maintained in all cases.

The shared care of SC provides an increase in the mother-child bond and minimizes the separation between them, reducing the risk of interruption of breastfeeding due to hospitalization in a pathological unit, in addition to a better relationship between the family and the health team. This strategic care tool also contributes to the reduction of the risk of hospital infection and the optimization of Intermediate Care beds due to the higher turnover of these.

It is worth mentioning that we still have as challenges to be overcome, cases of economic vulnerability and patients residing outside the municipality, which prevents the continuity of adequate treatment of the NB in AB.

Shared care is based on intersectoriality (integrated articulation of the services that make up this network), on integrality (guaranteeing access to all spheres of health care) and on interdisciplinarity (interaction between specialties) (Brasil, 2013; Ferro, 2014).

Therefore, it is a strategy that reduces the fragmentation of care and allows teams to integrate different knowledge and transcend care beyond diseases (Paes, 2013)

The articulation of care between different levels of complexity is a challenge (Lima, 2015). The shared care of NBs with congenital syphilis without neurosyphilis was successful because it became a municipal policy, with integrated management arrangements and health professionals and service managers co-responsible for sharing care, strengthening health teams. Well-defined flows and good communication between services are the

success of this technology. In addition, the link between those responsible and the UBS after discharge from the maternity hospital guarantees the monitoring and treatment of the NB.

Timely hospital discharge from the maternity hospital, carried out in a shared way for NBs with CS without neurosyphilis, consists of a process of planning, articulation and transfer of shared care with Primary Care, which fundamentally aims at a change in attitude in the approach of the NB and enables the dehospitalization, more humanized care, thus ensuring the improvement of perinatal care.

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