Ministry of Health

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Acronyms

NAM	Naso-alveolar molding
DSA	Dental Surgery Assistant
OMFS	Oral & Maxillofacial Surgery
OPD	Outpatient Department
SS	Stainless Steel

Definitions

1. **Legal Guardian:** person who is legally appointed as the care provider(s) for the baby
2. **Treating Dentist:** Orthodontist or Paediatric dentist treating the baby
3. **Care provider(s):** Person(s) attending with the patient and administering the treatment to the child

Naso-alveolar Molding (NAM) Guidelines

Chapter One:

1. Introduction

Individuals born with cleft of the lip and palate generally require treatment from birth until maturity. The type of treatment offered will vary depending on the availability of resources within their local area. The first stage of treatment that may be offered to new-borns is Naso-alveolar molding (NAM). This is a procedure whereby an oral device is used to actively reshape the nose, lips and alveolar ridges prior to lip repair surgery. Overall, NAM improves facial symmetry between the cleft and non-cleft sides facilitating a sound lip repair surgery. Recent studies comparing babies receiving NAM and those who did not demonstrate the benefits of this modality of treatment in providing a better surgical outcome. It also reduces the need for soft revision surgeries and costs of care. This is particularly true for babies with bilateral clefts of the lip and palate.

NAM treatment ideally commences within the first week of life and continues until molding is complete and the baby is ready for corrective lip repair surgery. This is at the approximate ages of 3 months and 6 months for unilateral and bilateral cleft and palate respectively. The device should ideally be worn full time and only removed for cleaning.

Bilateral cleft lip and palate babies takes longer than that for unilateral cleft cases as there are added parameters of treatment. These include lengthening the columella and de-rotation and centralization of the premaxilla in some cases.

2. Scope

These guidelines apply to all trained specialist orthodontists and pediatric dentists managing cleft lip and palate patients.

3. Purpose

The purpose of these guidelines is:

3.1. To standardize the management of individuals born with clefts of the lip and palate.

Chapter Two

4. Guidelines:

4.1. The NAM device consists of an oral and nasal component. See **Appendix 1 & 2.**

4.2. The oral component has both an extraoral and intraoral section. Strips of tape are used to retain the device and provide the forces required for molding. They are secured from the extra-oral component of the device to the cheeks **appendix 3**. The intra-oral section molds and guides the lesser and greater segments of the maxillary alveolar ridge arch towards each other into an idealized arch form.

4.3. The nasal component or nasal stent fits into the nose. Its activation molds and repositions the nasal cartilages. It lifts the depressed nasal tip and projects it forward.

4.4. In the case of bilateral clefts, a pro-labial band may be added to the NAM device. This assists on lengthening the columella. While allowing for continuation of Nasal molding

4.5. The key stages involved in the clinical process of NAM are as follows:

4.5.1. First Visit

A. Consultation and Clinical Examination

i. Prior to the consultation visit, the baby's legal guardian is contacted by the treating dentist or DSA to confirm their attendance and advise them to ensure that the baby is not fed for 2 hours prior to the appointment

ii. On attendance, a thorough medical history is taken and a clinical examination is conducted.

iii. A cleft registry form is completed. The form is available at the Dental & OMFS department of Al Nahdha Hospital, and is completed and stored in a folder within the department

iv. The care provider(s) are informed about the outline of multidisciplinary treatment from birth to maturity in general and NAM treatment is explained in depth with the aid of a Power Point presentation and educational booklet

v. Feeding is discussed and appropriate advice given

vi. Baby's oral and nasal hygiene is checked, and appropriate advice is given to the care provider(s)
vii. Verbal consent is obtained for treatment

B. Impression taking:

i. Impressions are taken by the treating dentist in the presence of the on-call anaesthetist (in case of an emergency).
ii. The on-call anaesthetist is contacted to attend the clinic. He ensures that all emergency equipment is ready prior to the commencement of the procedure
iii. The care provider(s) are requested to wait outside the clinic and are advised that the procedure does not take more than 10-15minutes
iv. The DSA assists the treating dentist during the procedure by holding the baby in the correct position
v. Impressions are taken using a semi-customized impression tray and heavy setting poly-siloxane impression material by the treating dentist
vi. The anesthetist and treating dentist ensure the baby is alert and able to breathe throughout the procedure.
vii. The impression is then disinfected and sent to the lab to allow the construction of a customized NAM device.
viii. Upon completion of the procedure the care providers are allowed back into the clinic and the baby may be fed

C. The follow up appointment is generally 1 week later to deliver the NAM device

4.5.2. Second Visit:

The baby is reviewed 1 week later to deliver the NAM device and instructions are given to the baby's care provider(s).

A. Delivering the NAM device, the clinical steps are as follows:
   i. Pre-treatment pictures, and measurements of the cleft area are taken. The baby's weight is also noted. These are the baseline records.
   ii. The lab work received should be checked to ensure the model, extra-oral button(s) and device have been delivered

iii. The device should be checked and placed on the model to check its extension. Modifications may be required prior to fitting the device.
iv. The device is fitted intra-orally, extensions checked and adjusted to minimize the risk of trauma
v. A safety round 'hole' approximately 3mm wide is created in the posterior aspect of the palate.
vi. The site and angulation at which the extra oral button(s) should be attached to the device are identified and marked
vii. Extra-oral button(s) length and thickness should be checked, and secured onto the device with sticky way then sent to the lab so that they may be attached with acrylic
viii. Once delivered from the lab the device is checked and fitted.
ix. Activation is done using soft lining material and extra-oral taping (Appendix 3)
x. Soft lining material is prepared as per manufacturer's instructions and applied directly onto localized areas of the device to 'mold' the ridges.
xi. Taping is carried out using steri-strip and elastics. Direction and forces of activation checked until satisfactory. (Appendix 3)
xii. The appliance is fitted, and checked
xiii. Demonstrations and instructions provided to the baby's care provider(s):
    a. How to insert and remove the NAM device
    b. How to construct the lip tapes
    c. How to apply lip taping with the correct force and direction
    d. How to apply duoderm if required to the cheeks (Appendix 3)
    e. How to feed the baby with the device
    f. How to clean the device and look after it
    g. Discuss common problems that may occur during the first week of wearing the NAM device and how to overcome them

B. Follow up appointment is scheduled 1 week later

4.5.3. Third visit:

This appointment is usually 1 week post-delivery of the NAM device.

A. The cleft area is measured and compared to pretreatment measurements.

B. Findings are discussed with the care provider(s), together with any challenges they faced during the first week. These should be resolved.

C. NAM device is activated as necessary and the care provider is shown how to use the device.

D. Follow up pictures are taken

4.5.4. Follow up visits

A. Subsequent appointments should be given every 2 weeks.

B. The width and position of the alveolar ridges are measured.

C. The device is adjusted and activated as required.

D. Progress pictures are taken at each visit.

4.5.5. Addition of the Nasal Stents visit

This is usually done when the cleft area width is approximately 4mm. The clinical steps are as follows:

A. Addition of the Nasal Stents

i. A piece of strip wax or soft wire is bent to follow the contour of the hard wire that will support the nasal acrylic bulbs. It should extend to just lie into the nostrils. It is secured onto the NAM device and sent to the lab to add the wire components of the nasal stent in 0.9mm SS wire

ii. On receiving the NAM device, the device is checked in situ and wire adjusted as required

iii. Small acrylic bulbs are then added onto the nasal stent component that fits into the nose and allowed to cure in a warm water bath

iv. Soft lining material is then added onto the cured acyclic bulbs

v. The device is checked again and activated such there is slight blanching in the nasal rim area.

vi. The device is secured with extra-oral taping using the appropriate force and direction

B. Demonstrations and instructions provided to the baby's care provider(s):

i. How to insert and remove the NAM device

ii. How to apply lip taping with the correct force and direction

iii. How to feed the baby with the device

iv. How to clean the device and look after it

v. Discuss common problems that may occur during the first week of wearing the NAM device with the stent and how to overcome them. The transition is usually smooth with no obstacles

vi. Follow up appointment is scheduled 1 week later

4.5.6. Follow up visits

A. Changes in the cleft area are measured and compared to the previous visit as well as those in the nasal form.

B. These are discussed with the care provider(s), together with any challenges they faced during the first week. These are resolved.

C. Follow up pictures are taken and the NAM devise is activated as necessary

D. Pictures are taken

E. Follow up visits are then arranged given every 2 weeks. During these visits, the width and position of alveolar ridges is measured and pictures taken

4.5.7. Within 3 weeks of anticipating that the baby will be ready for Lip repair surgery a referral is made to the Cleft Plastic Surgery Team to arrange for a surgery date and necessary admission appointment

4.5.8. Final visit

A. At this visit the device is made passive and parents shown the amount of force required

B. Surgery appointment is confirmed with the parents

C. Advice regarding what to expect pre and post operatively is explained to the parents

D. Final pre-op measurements are taken

E. Pictures are updated

F. 1-month post-op review appointment is arranged

G. The care provider is also advised to contact the treating dentist in case of any changes in the surgery date to change their follow up appointment accordingly.

Chapter Three

5. Responsibilities:

5.1. Head of Dental & OFMS Department shall:

5.1.1. Ensure all dental &OMFS doctors are aware of these guidelines.

5.1.2. Ensure all dental &OMFS doctors adhere to these guidelines.

5.2. Dental &OMFS staff shall:

5.2.1. Be aware of and adhere to these Guidelines

Chapter Four

6. Document History and Version Control

Version	Description	Review Date
1	Initial Release	May 2026

7. References

7.1. Grayson BH, et al, 1999.Presurgical Nasoalveolar Molding in Infants with Cleft Lip and Palate. The Cleft Palate Craniofacial Journal. 1999;36(6): 486-498

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The Cleft Palate-Craniofacial Journal Volume 59, Issue 8,995-1000

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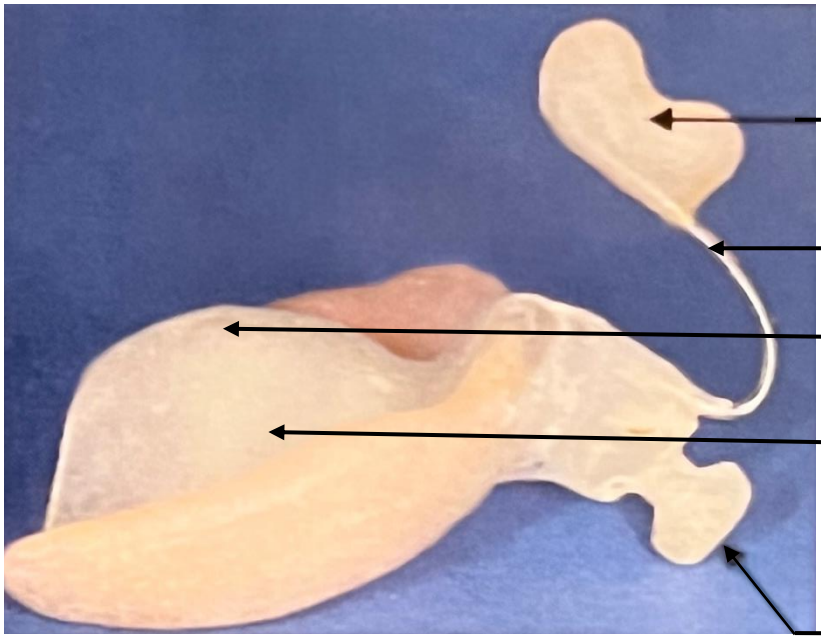
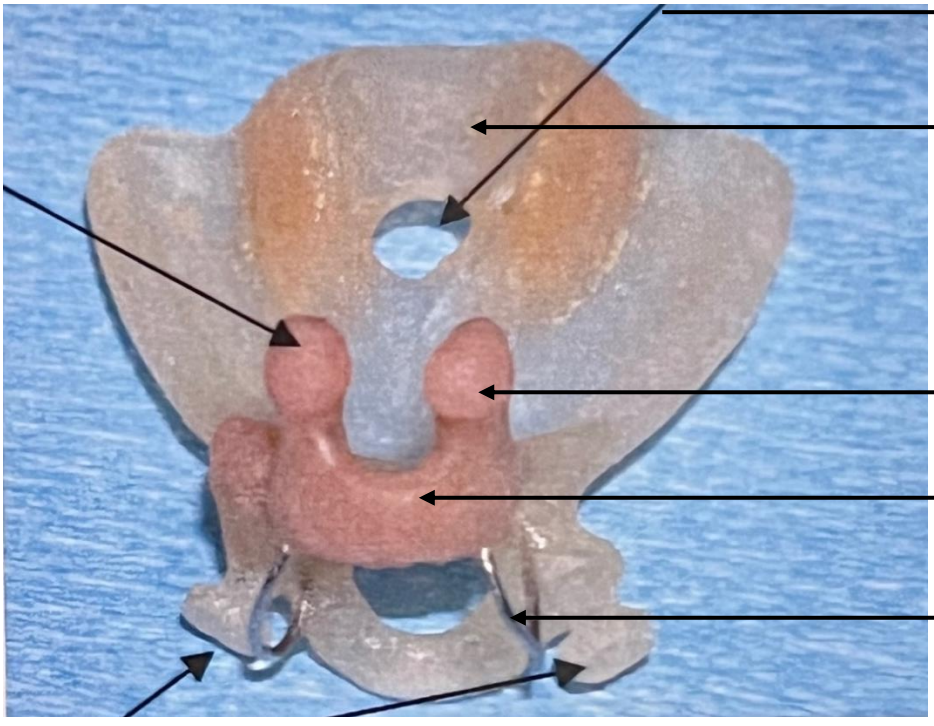
7.5. Dunworth K, et al Systematic Review and Critical Appraisal of the Evidence Base for Nasoalveolar Molding (NAM). *The Cleft Palate Craniofacial Journal*. 2022;0(0). doi:10.1177/10556656221136325

Appendix 1: NAM Device (Unilateral Cleft)



Appendix 2: NAM Device (Bilateral Cleft)



Appendix 3: NAM device with Taping