COMMUNICATION ASSESSMENT PROTOCOL
for
Young Children with Cleft Lip &/Palate
in
MAURITIUS

PRINCIPAL INVESTIGATOR

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Ministry of Health & Quality of Life
4th June 2008

AIM

To develop
A Communication Assessment Protocol
for
young children with cleft lip and/or palate
in
Mauritius

DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

MAURITIUS

6/5/2008

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IMPACT OF A CLP

- APPEARANCE
- FEEDING
- COMMUNICATION DEVELOPMENT
  Speech-language and Hearing
- DENTITION
- PYSCHOLOGICAL

ON THE CHILD AND THE FAMILY

DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

TREATMENT APPROACH TO CLP

- Best cleft care is provided by a multidisciplinary team-based approach
- Care and management should begin from the time of birth

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CURRENT TREATMENT APPROACH TO CLP IN MAURITIUS

- Multidisciplinary team approach is inadequate
- Standard clinical speech and hearing assessment protocol is required.
  The assessment should be compiled in the child's language to ensure accurate assessment
- An urgent need to maintain records in a uniform format.

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SPEECH-LANGUAGE CHARACTERISTICS OF CHILDREN WITH CLP

- Resonance
  (hypernasal, hyponasal, mixed nasality)
- Nasal emissions and nasal grimace
- Speech articulation
- Visual appearance of speech
- Abnormal voice
- Speech-language development delays

THE IMPACT OF A COMMUNICATION DISORDER

DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

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"Don't worry about speech until after surgery?"

- Children with CLP are at risk for communication delays/disorders

After surgery may be too late

PREVENTION: Goals in Early Communication Intervention

To support the development of age-appropriate speech, language & cognition

To prevent development of maladaptive articulation patterns

To monitor hearing

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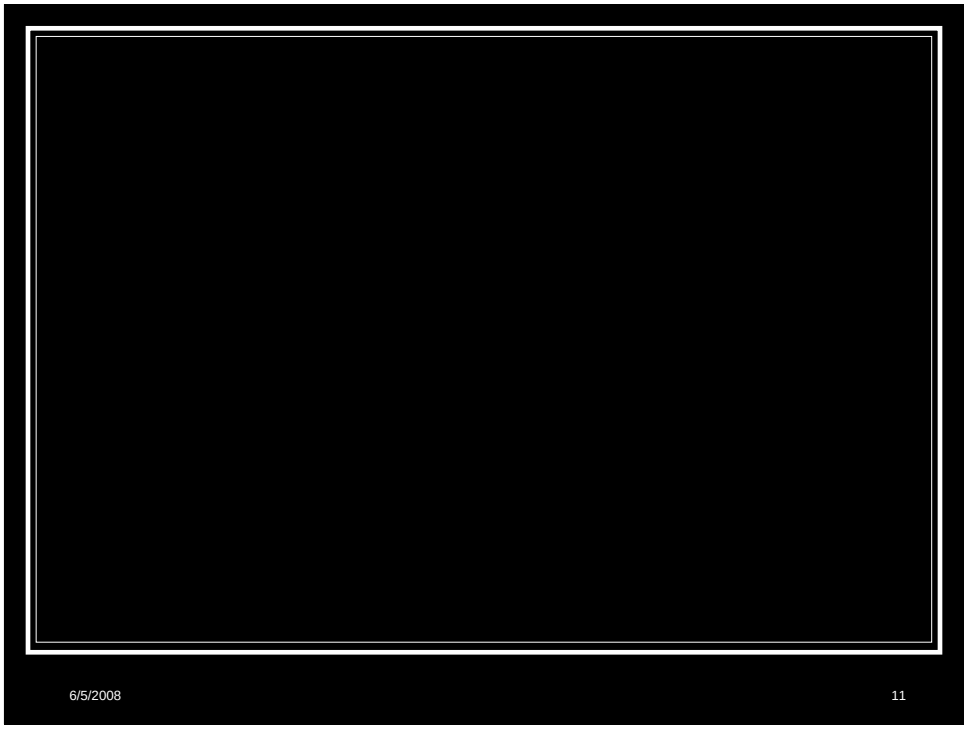

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METHODOLOGY

- Design:
  - *A mixed methodology descriptive research design*
- Study site:
  - *Plastic Surgery Centre, Victoria hospital*
  - *ENT hospital*
- **Data collectors:**
  - *Speech Therapists & Audiologists.*
- Subjects:
  - *Children 0-6 years with CL/P*
  - *Parents of the children*

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DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

STUDY COVERAGE

- Target population: 125
- No response -
  - 16 - *incorrect records* *(telephone numbers, addresses unknown)*
  - *11 - over six years old (incorrect date of birth)*
  - *5 - duplicates*
  - *2 - unfortunately passed away*
- Did not consent to participate-3
- **Final number of interviews: 88**

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THREE PHASES

Phase 1

To explore and describe the characteristics of young children with CLP in Mauritius

Phase 2

To compile and implement a communication assessment protocol in Mauritius

Phase 3

To determine acceptability of the clinical assessment protocol in Mauritius

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DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

PHASE ONE

Obtain ethical clearance from:
Ministry of Health, Mauritius and
Research Proposal and Ethics Committee, Faculty of Humanities, University of Pretoria

Select participants
Children with CL/P
Parents of children with CL/P
Speech-language therapists & audiologists

Develop the interview schedule as data collection instrument

Conduct interviews and gather data

Analyse and interpret the data to describe characteristics of children with CL/P

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PHASE TWO

Obtain informed consent from participants:
Parents of selected children with CL/P
Speech-language therapists & audiologists

Compile the materials:
Communication Assessment Protocol
Speech materials in locally spoken languages
Questionnaire: Perceptions of the speech-language therapists & audiologists regarding the Communication Assessment Protocol

Conduct a pilot study
&
Train the speech-language therapists & audiologists for data collection

Conduct communication assessments on selected children with CL/P

Analysis and interpretation of data to describe characteristics of communication disorders in young children with CL/P in Mauritius

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PHASE THREE

Gather perceptions of the participants by using a self-completion questionnaire regarding the clinical applicability of the Communication Assessment Protocol

Hold a focus group discussion with the participants as an adjunct qualitative method to the questionnaire in order to determine the acceptability of the Communication Assessment Protocol

Analysis and interpretation of data to validate the Communication Assessment Protocol for clinical use for young children with CL/P in Mauritius

MATERIALS

- Hospital medical records
- Interview schedules
- Communication assessment tracking forms
- Speech elicitation materials
- Questionnaire for speech-language therapists and audiologists

APPARATUS

- Electroacoustic instruments for hearing evaluations
- Digital audio and video recording equipment
- Training video Speech Assessments GOS.SP.ASS. ’94 and ’98
- Laptop

COMPONENTS DATA COLLECTION TOOL

- A: Demographic information
- B: Family background
- C: Birth history
- D: Type of cleft
- E: Surgical history
- F: Feeding, speech and hearing
- G: Pathway of care

DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

DESCRIPTION

TYPE OF CLEFT / AGE GROUP	lip	palate	lip and palate	Submucous cleft palate
Younger than 36 months	6	11	11	0
36-72 months	6	26	26	2
Total	12	37	37	2
N=88	**(14%)**	**(42%)**	**(42%)**	**(2%)**

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DESCRIPTION

- Significant maternal history 25%
- Family history of CLP 21%
- Age of identification: newborn 95%
- Surgical history median age
  - Primary lip repair 5 months
  - Primary palate repair 12 months
- Languages spoken at home
  - Creole & French (2) 51%
  - Creole or French (1) 38%
  - More than 2 languages 11%

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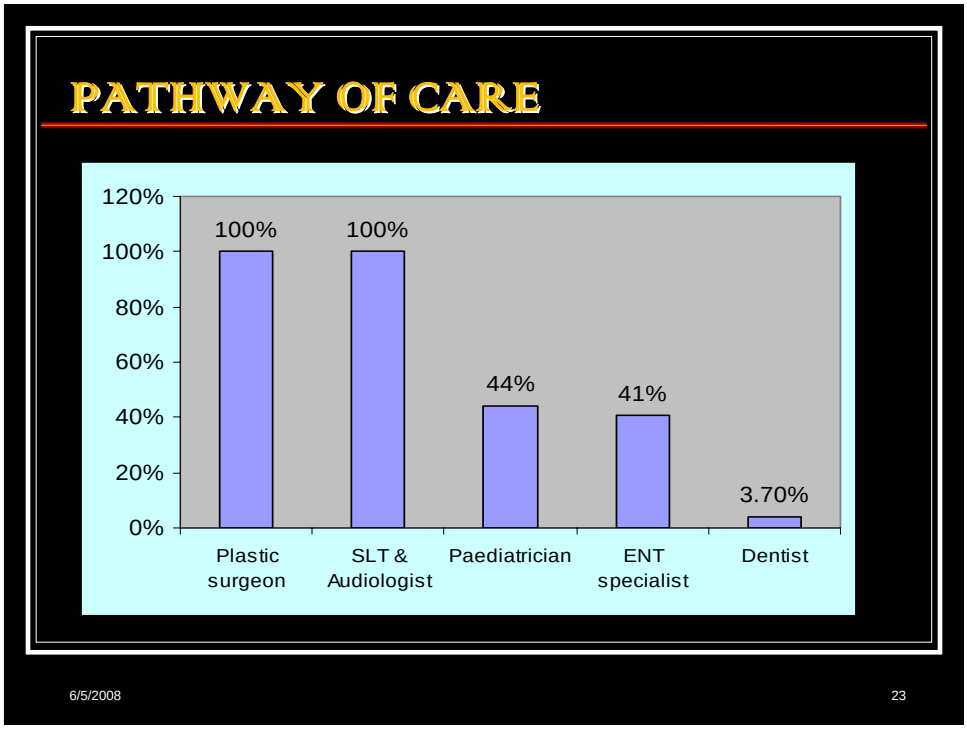

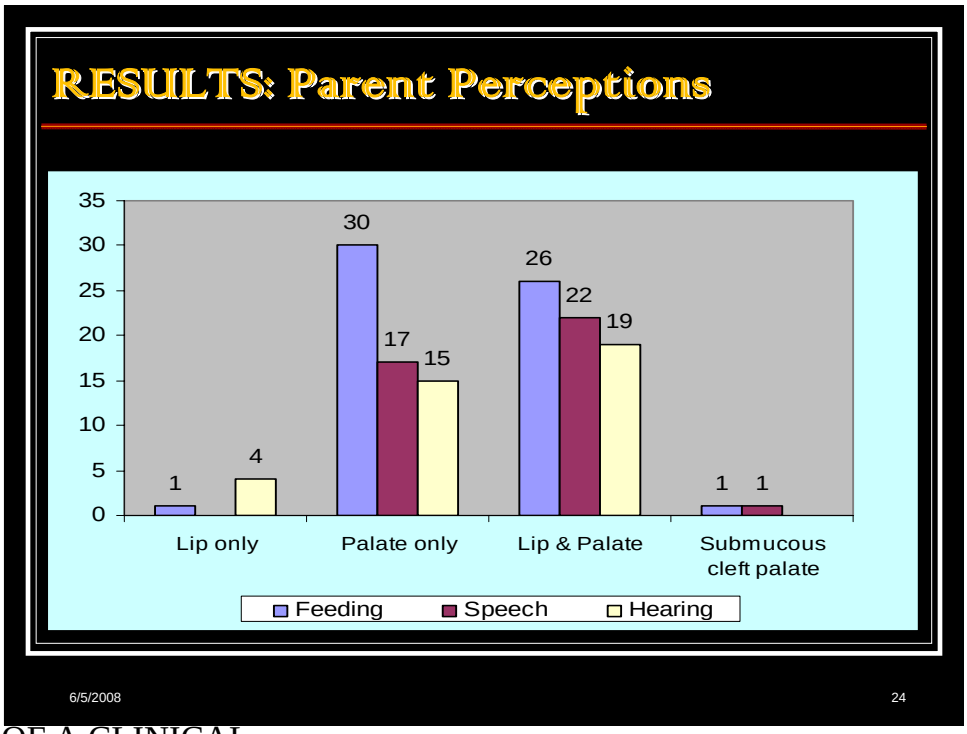

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COMPREHENSIVE ASSESSMENT

- FEEDING
- HEARING
- OROFACIAL EXAMINATION
- COMMUNICATION-SPEECH-LANGUAGE

  (age groups: younger than 3 years and 3-6 years)
- DEVELOPMENT

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RESULTS

Feeding (n=24)	
Breast-feed	0%
(National survey: 93%)	
Nasal regurgitation	23%
Risk for poor weight gain	4%
Hearing evaluations (n=80)	
Hearing loss:	65%
Dental problems	20%
Motor milestones delayed	21%
Attending school (n=56)	96%

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RESULTS: Hearing Evaluations

Type of hearing loss (HL)	No of Children	Percentage
Conductive	48	60%
Sensorineural	2	2.5%
Mixed	2	2.5%
No hearing loss	28	35%

Degree of hearing loss	No of Children	Percentage
Mild (15 dB to 30 dB HL)	20	25%
Moderate (30 dB to 50 dB HL)	22	28%
Severe (50 dB to 70 dB HL)	3	4%
Profound (>70 dB HL)	1	1%
No hearing loss	28	35%
Missing data	6	7%

DEVELOPMENT OF A CLINICAL SPEECH AND HEARING ASSESSMENT PROTOCOL FOR YOUNG CHILDREN WITH CLEFT LIP AND OR PALATE IN MAURITIUS

Speech characteristic	Number of children		Percentage of children presenting with the cleft type speech characteristic
RESONANCE:	Yes	No	
I) Hypernasal	35	12	75%
II) Hyponasal	2	45	4%
III) Mixed nasality	2	45	4%
NASAL EMISSION	14	33	30%
NASAL GRIMACE	12	35	26%
VOICE	Dysphonia	Normal	
	13	34	28%

Speech characteristic	Number of children		Percentage of children presenting with the cleft type speech characteristic
ARTICULATION	Yes	No	70%
Cleft type speech characteristics (CTCs)	33	12	
I)Anterior CTS	15		
II)Posterior oral	9		
III)Non oral	15		
IV)Passive CTC	27		
* Some children had more than one type of CTC	* for 2 children the SLTs were unsure		

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Speech characteristic	Number of children		Percentage of children presenting with the cleft type speech characteristic
DEVELOPMENTAL ARTICULATION ERRORS	Yes	No	30%
	14	24	
	*for 9 children the SLTs were unsure		
VISUAL APPEARANCE			-
I)unremarkable	28		-
II)asymmetry of facial movements	2		
III)tight upper lip			
IV)tongue tip appearing	10		
(interdental lisping)	3		

CONCLUSIONS

- Development and clinical implementation of the first standardised, valid and reliable communication assessment instrument in Mauritius.
- Data collection forms yielded a description of the children with CL/P and their families
- Identification of a spectrum of problems led to timely referrals
- Consensus of all speech language therapists and audiologists in the public health sector to implement the Communication Assessment Protocol.
- A National Register for individuals with CLP has been initiated (Microsoft Access)

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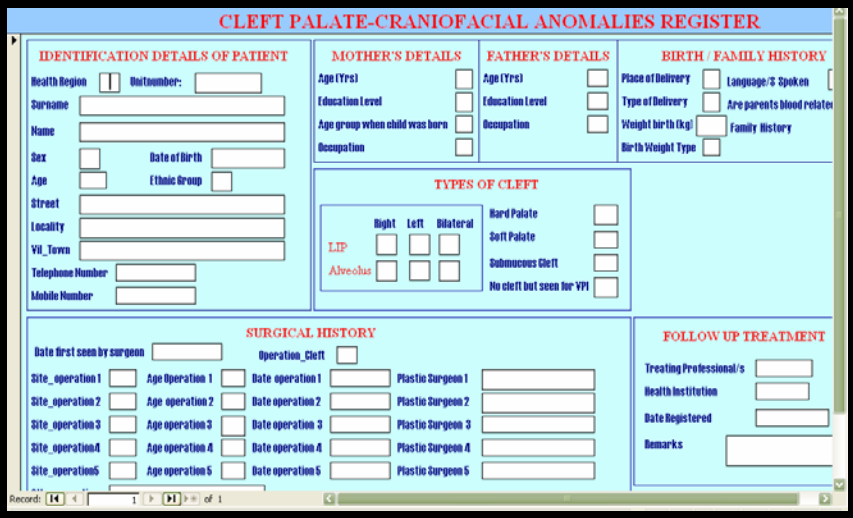
Cleft Palate-Craniofacial Anomalies National Register



COMMUNICATION ASSESSMENT PROTOCOL

Longitudinal Assessment plan

New born ~ 1 month	Toddler ~ 18 months	**Pre-primary school entry ~ 36 months**	**Primary school entry ~ 60 months**

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THE WAY FORWARD

- Set up a TEAM-BASED approach to cleft care in Mauritius
- Continue the RESEARCH STUDY

  To determine the outcome of the Communication Assessment Protocol and further refine the protocol
- A prototype for other developing countries to develop a communication assessment protocol

FINAL COMMENT

'Knowing is not enough; we must apply. Willing is not enough; we must do'.

Goethe.

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Children and their parents who participated in the study

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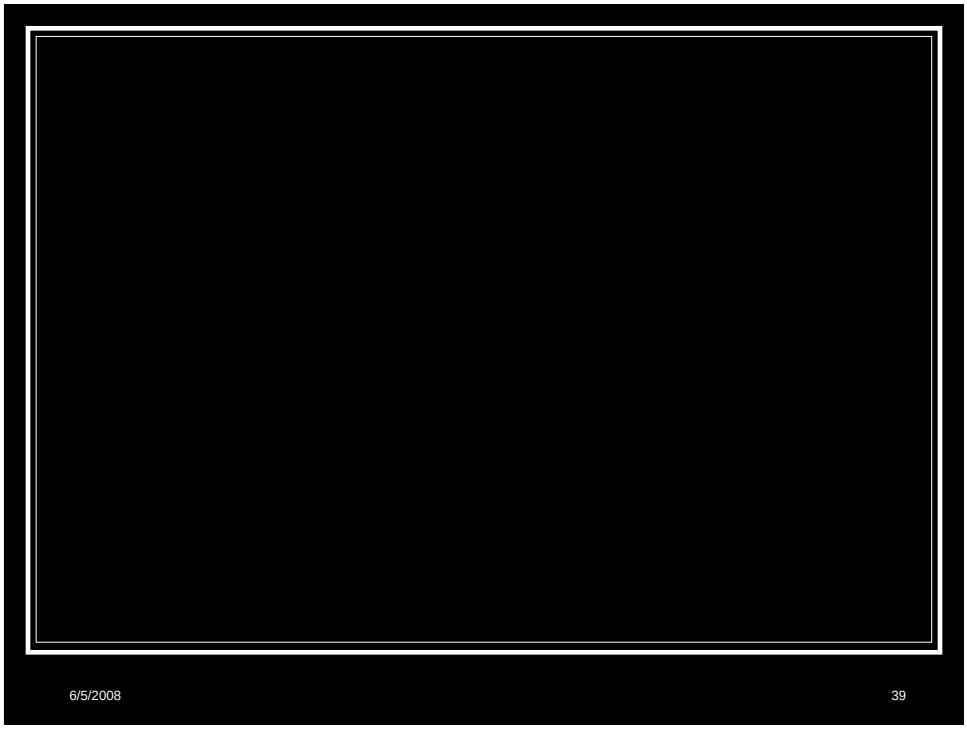

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IDENTIFIABLE AETIOLOGY FOR THE SPEECH DISORDERS (3-6 years n=56)

Identifiable etiology	Frequency count	Percentage of children
I) Hearing loss	25	25%
II) Developmental delay	16	20%
III) Oral fistulae	11	14%
IV) Dentition abnormal	4	5%
V) Syndrome	5	6%
VI) Other (for example learning difficulty)	4	5%

*some children have more than one identifiable etiology

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AETIOLOGICAL FACTORS

- Hearing loss
- Orthodontic issues
- Velopharyngeal insufficiency
- Compensatory articulatory patterns
- Speech-Language delays

RESULTS: Hearing Problems

- **Parental opinion**
  Hearing problems 47%
- Risk factors: 20%
- **Hearing evaluations**
  Hearing loss: 65%
- Poor listening: 22%

- **ENT specialist follow-up: 41%**

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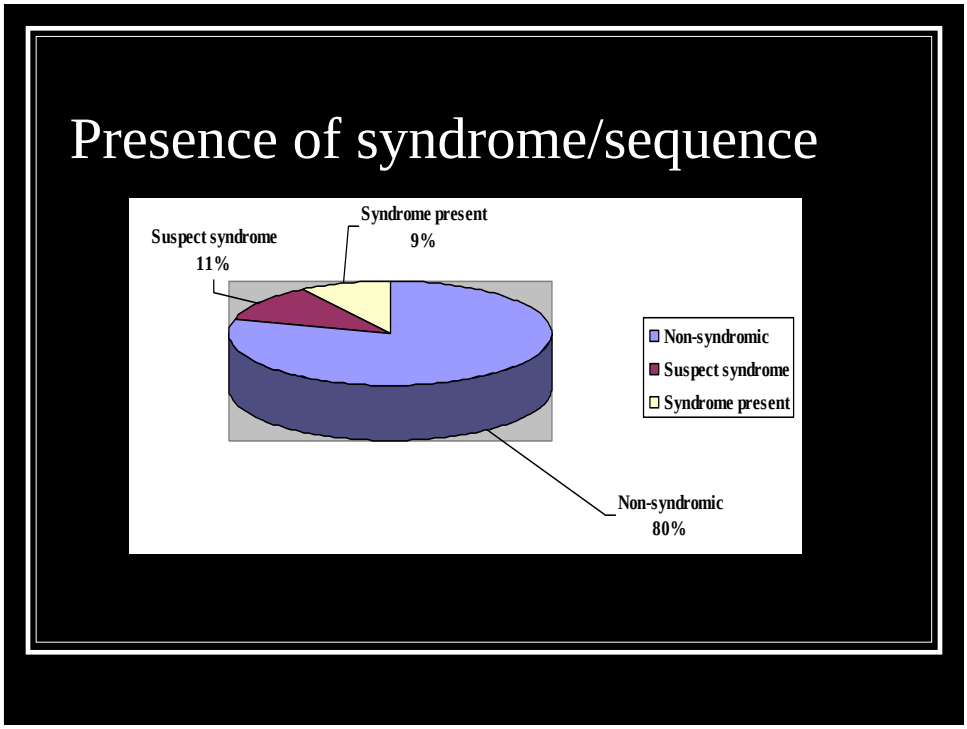

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