Implementation of a nutritional protocol in the pediatric cardiac intensive care unit (CICU)

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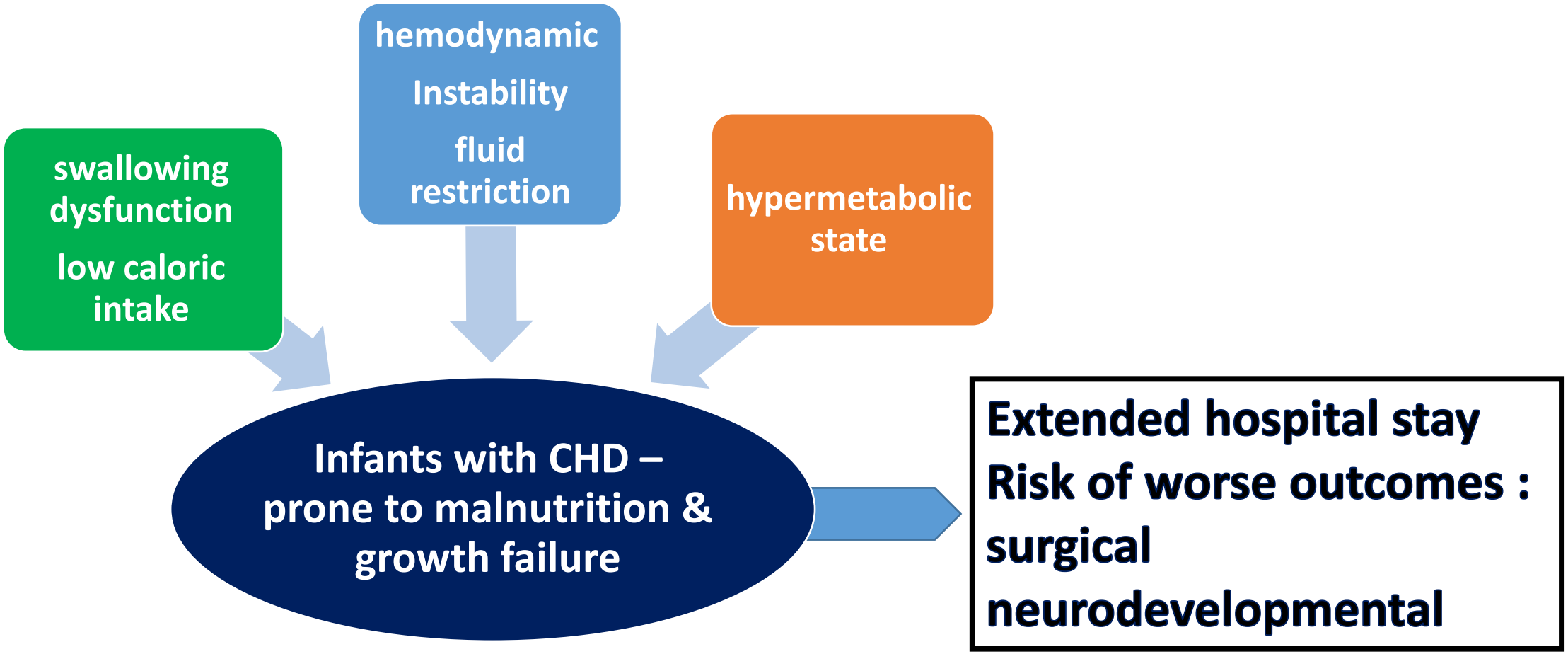
Congenital Heart Disease (CDH)

- **Incidence - 8/1000 births**
- **50% of children - will be operated during their first years of life**
- **Mean hospitalization time at the "Safra" CICU is 6 days**
- **Overall mortality during hospitalization is 5%**

Rationale


swallowing dysfunction
low caloric intake
hemodynamic Instability
fluid restriction
hypermetabolic state
Infants with CHD – prone to malnutrition & growth failure
Extended hospital stay
Risk of worse outcomes :
surgical
neurodevelopmental

Goals of Nutritional therapy

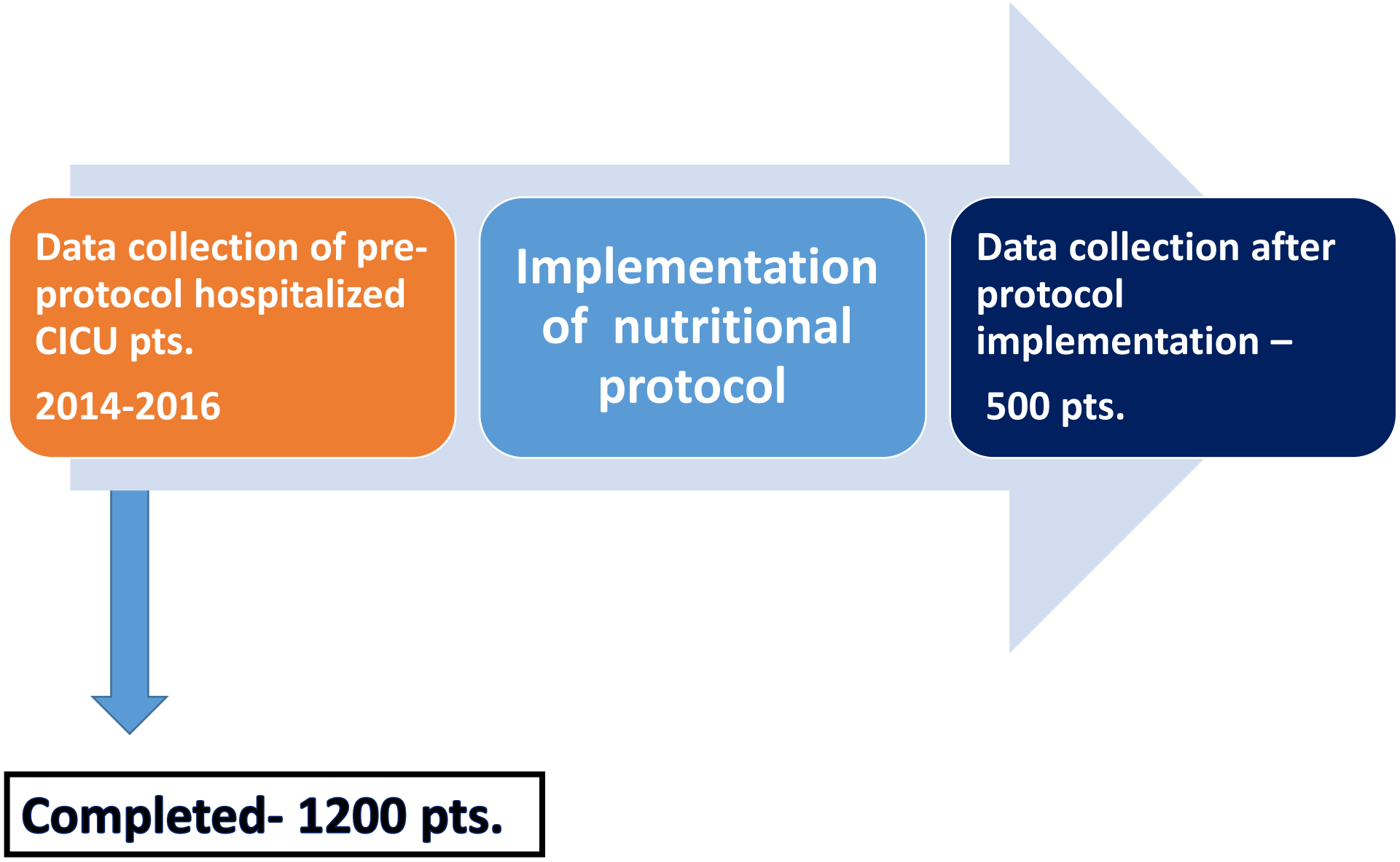
- **To provide adequate nutrition for age appropriate growth & development**
- **To ensure timely, preventative, and corrective nutritional intervention tailored to the individual needs of the patient**
- **Early detection of patients at high risk of malnutrition and prevention of complications**

Study Aim

To evaluate the nutritional state and length of hospitalization in the CICU before and after implementation of a nutritional protocol

Primary objective - Reduction of 1 day of hospital stay

Secondary objective – Reduction in overall mortality and improved nutritionals state at discharge


Data collection of pre-protocol hospitalized CICU pts.
2014-2016
Implementation of nutritional protocol
Data collection after protocol implementation –
500 pts.
Completed- 1200 pts.

Methods

Inclusion Criteria - Patients 0-24 months of age operated for CHD

Exclusion Criteria - Short bowel syndrome, GIT anomalies, GA <36 w

Data Collected -

Demographics, Type of CHD and operation

Anthropometric data: weight, height, BMI

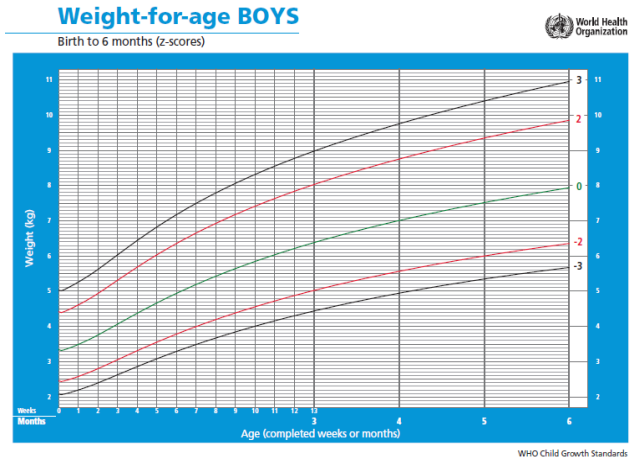
Blood tests values

Nutritional interventions

Hospital length of stay and complications

Nutritional assessment & intervention

- **On admission- assessment malnutrition risk by the "WHO" Child growth charts (weight Z-score), type of CHD (cyanotic or not), presence of congestive heart failure, additional anomalies**
- **Classification of risk – Mild, Moderate-Severe**
- **Daily nutritionist consult and choice of formula and/or TPN, maximize calories/protein**
- **Computerized nutritional data**



Nutritional Algorithm

- Modified Boston Cardiovascular Program Enteral Feeding Algorithm
- Nutritional options:

< 12 months- standard/high calorie formula/special formula (chylothorax) /breast milk

>12 months- high calorie formula/special formula/solids

- Feeding method- PO/PZ/TPN- or combination
- Calculation of daily energy intake, protein, lipids, carbohydrates

Student's Role

- Establishment of computerized database of pre-protocol implementation data
- Establishment of computerized nutritional data and algorithm
- Post protocol implementation data collection
- Data analysis