

# Initiating, Developing, Structuring and Quality Improvement Aspects of a Pediatric Neurosurgery Program

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# Quality Improvement Objectives for Pediatric Neurosurgery

- *The Intraoperative care.*
- *The Preoperative care.*
- *The Postoperative care.*
- *The Comprehensive long term management of the child with a neurosurgical condition*
- *Management of parents and caretakers*
- *Transitioning the adolescent to an adult medical home*

# PLAN OF BATTLE

- *Identify Community Resources.*
- *Identify Lack of Resources.*
- *Formulate a 5 year Work Template.*
- *Communicate with Professional Resources.*
- *Communicate with Administrative Resources.*
- *Access Venues of Financial Support*

# INTRODUCTION

- A comprehensive health care delivery system requires a sequential series of steps that provides a care strategy that starts with the initial contact of the child and caretakers, and maintains a longitudinal flow through diagnosis, medical/surgical management, rehabilitation, recovery and long term care.
- Such a system can only be made by a coherent organizational structure and dedicated professionally trained personnel.

# CENTER DEVELOPMENT

## ➤ PHASE 1.

### ***CREATING A CLINICAL PROGRAM***

September 2003 – June 2010

Chief, Pediatric Neurosurgery Center

## ➤ PHASE 2.

### ***PROGRAM DEVELOPMENT & QUALITY IMPROVEMENT***

July 2010 – 2014

Director of Development of the Center

# AN INTERDISCIPLINARY AND INTER-INSTITUTIONAL VENUE

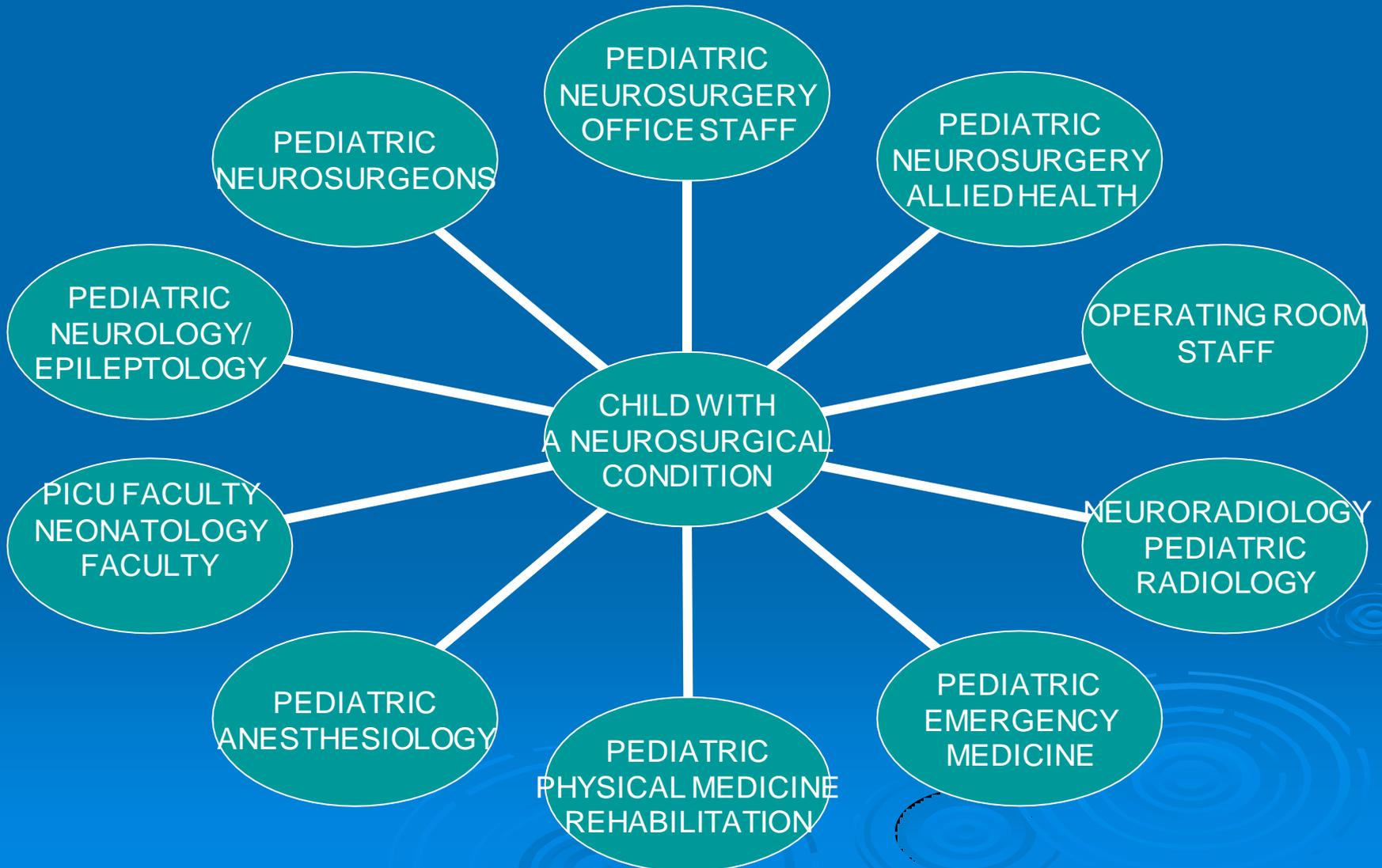
- ***UNIVERSITY OF FLORIDA.***
- ***MAYO CLINIC.***
- ***NEMOURS CHILDRENS CLINIC.***
- ***WOLFSON CHILDRENS HOSPITAL***
- ***BAPTIST HEALTH OF NORTHEAST  
FLORIDA.***

# PHASE 1

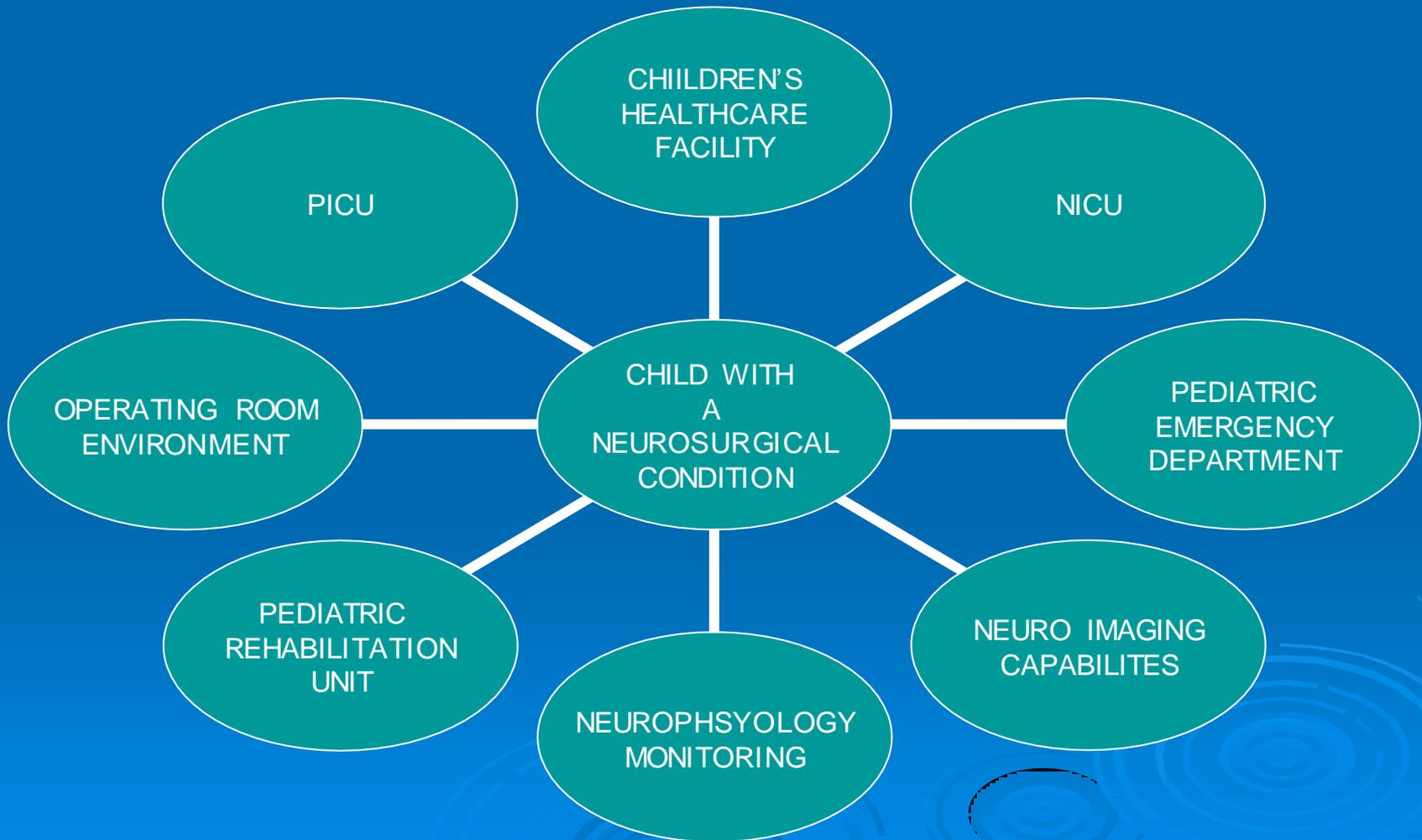
## Creating a Clinical Program

- *INITIATING AN OPERATIVE SERVICE*
- *INITIATING AN INPATIENT SERVICE*
- *INITIATING AN OUTPATIENT SERVICE*
- *CREATING SUPPORT SERVICES*
- *CREATING CLINICAL PROGRAMS*
- *MAXIMIZING COMMUNITY RESOURCES*
- *EDUCATING PHYSICIANS AND ALLIED HEALTH PERSONNEL*

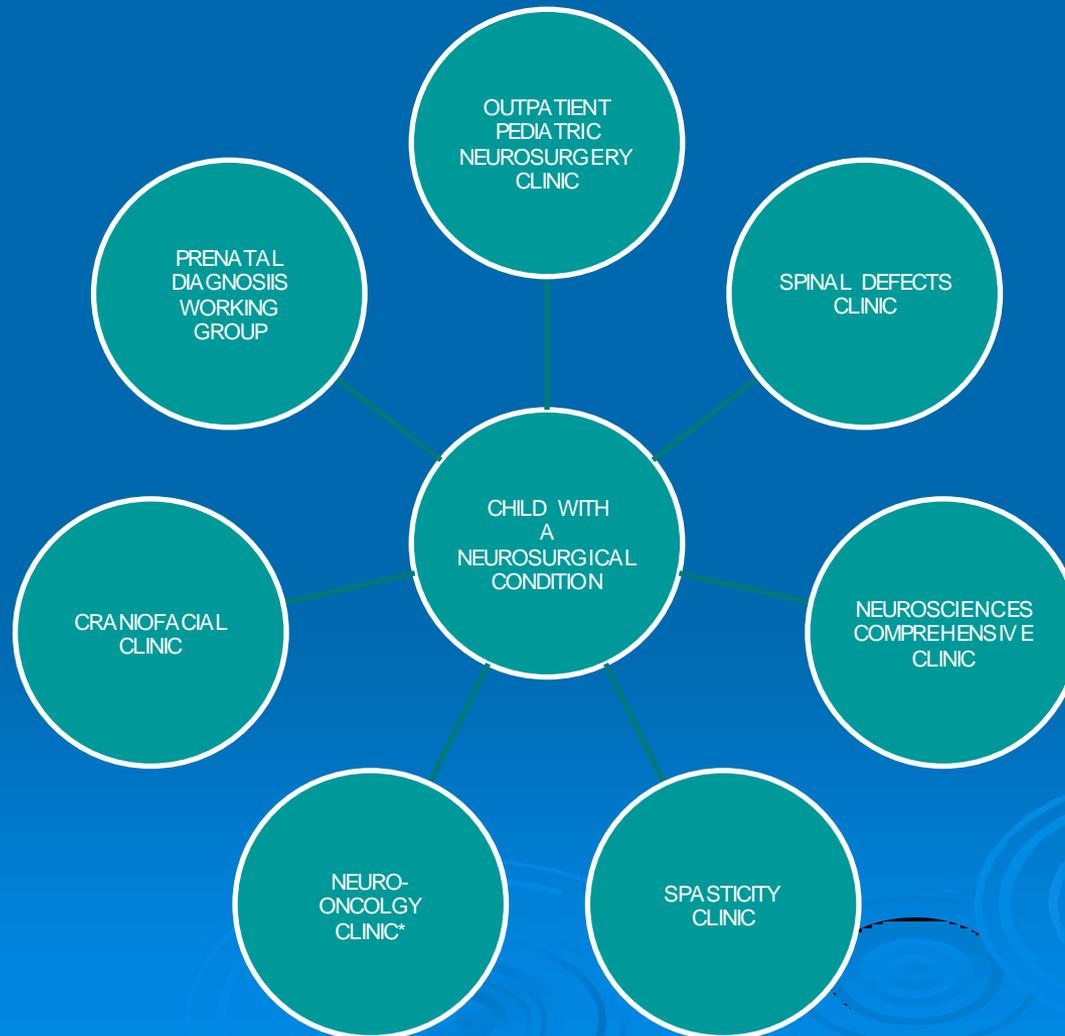
# PROFESSIONAL RESOURCES



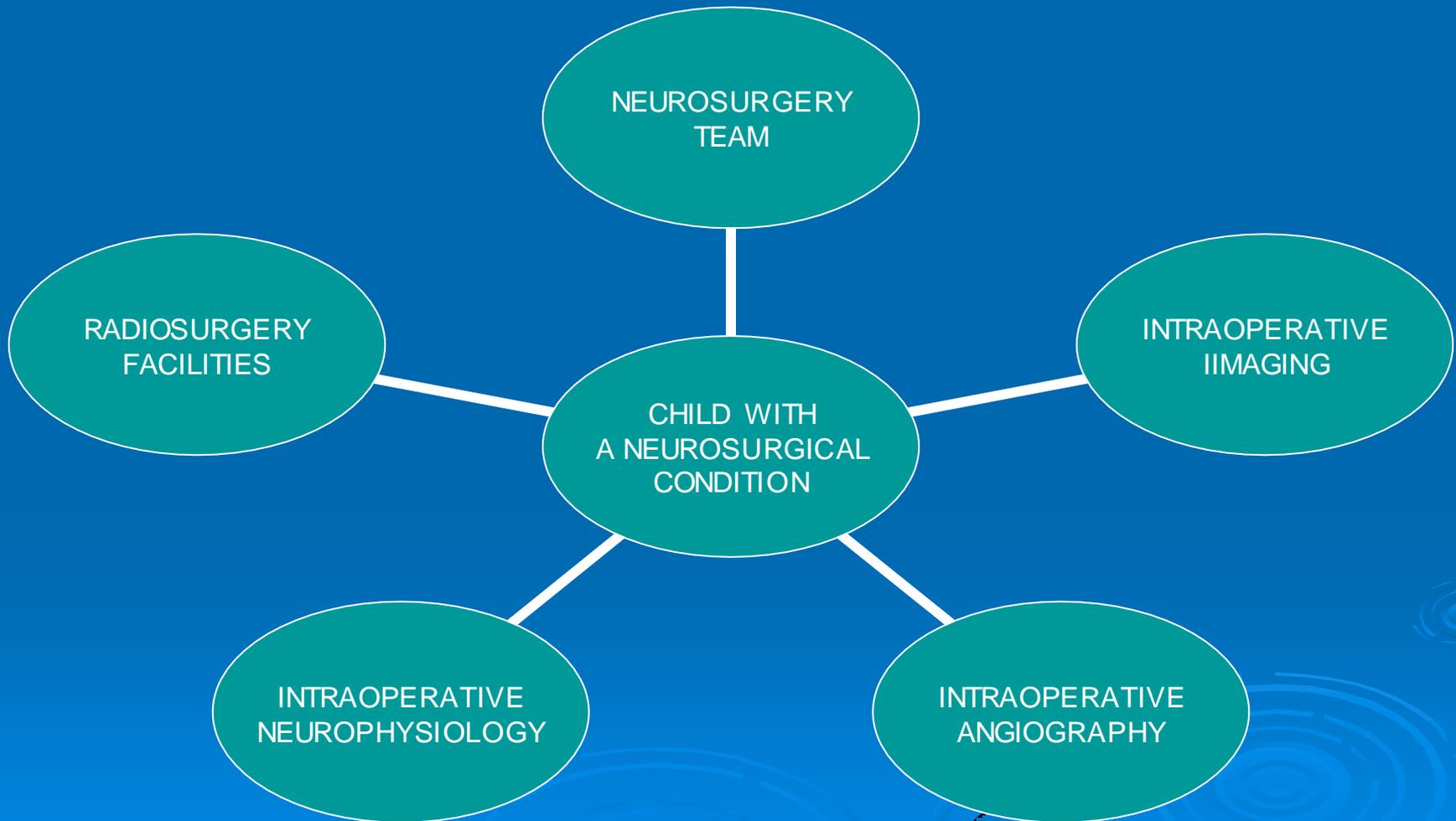
# INPATIENT HEALTH CARE FACILITIES



# OUTPATIENT FACILITIES

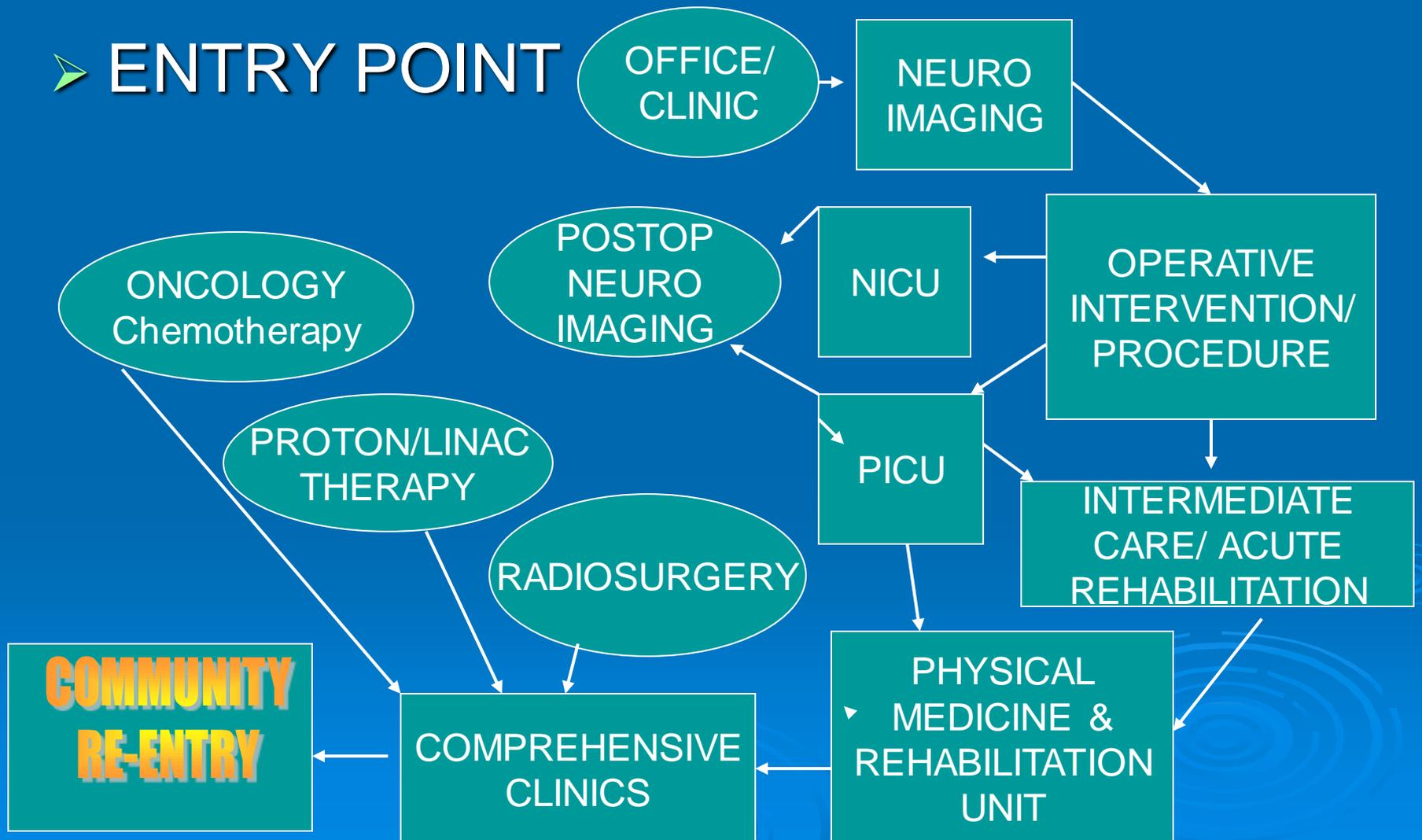


# OPERATING ENVIRONMENT



# Child with a Neurosurgical Condition

## ➤ ENTRY POINT



# Entry Point/Initial Contact

- ***Patient Service Representatives:***
  - ***Intake***
  - ***Registration***
- ***Patient Service Coordinators:***
  - ***Scheduling of Imaging and Diagnostic Procedures.***
- ***Patient Surgery Schedulers:***
  - ***Surgery and Related Procedures.***

# Evaluation by Health Care Personnel

- **History and Physical Examination by Neurosurgery ARNP/Physician Assistant.**
- ***“Focused” Examination by Pediatric Neurosurgeon.***
- **Requesting of Additional Diagnostic Procedures, Consultations and/or Operative Scheduling.**

# Diagnostic Neurophysiology

- *Electroencephalography (EEG)*
- *Video Monitoring EEG*
- *Electromyography/Nerve Conduction Laboratory*
- *Baclofen Trial Facility*
- *Continuous Epilepsy Monitoring Facility*

# Neurodiagnostic Technologies

- *Cranial/Spinal Ultrasonography*
- *Radiography*
- *Cranial/Spinal Computed Tomography*
- *Cranial/Spinal Magnetic Resonance Imaging (MRI)*
- *Functional MRI/Tractography/Spectroscopy*
- *Cranial/Spinal Angiography*
- *Positron Emission Tomography*
- *Single Photon Emission Computed Tomography*
- *Magnetoencephalography (MEG)\**  
(\* ) *to be developed.*

# Operating Environment

- *Operating Facility with Capacity and Support Systems*
- *Neurophysiology Monitoring*
- *Neuronavigational Equipment*
- *Operating Microscope with Neuronavigational Attachments*
- *Neuroendoscopy Technology*
- *Intraoperative Ultrasonography*
- *Intraoperative Computed Tomography*
- *Intraoperative Magnetic Resonance*
- *Intraoperative Angiography*
- *Surgical Laser Systems*

# Immediate Postoperative Management

- *Post Anesthesia Care Unit (Recovery Room)*
- *Neonatal Intensive Care Unit*
- *Pediatric Intensive Care Unit*
- *Intermediate Care /Acute Rehabilitation Area*
- *Non Acute Inpatient Care Areas*

# Postoperative Management Support Systems

- *Non Acute Inpatient Care Areas*
- *Continuous Epilepsy Surgery Recovery Area*
- *Inpatient Physical Medicine/Rehabilitation Area*
- *Outpatient Physical Medicine and Rehabilitation Facilities*

# Outpatient Neurosurgery Care Areas for Longitudinal Multidisciplinary Management

- ***Brain Tumor Clinic***
- ***Craniofacial Clinic***
- ***Neurosciences Clinic***
- ***Spasticity Clinic***
- ***Spinal Defects Clinic***

# NEUROSURGERY PROGRAMS

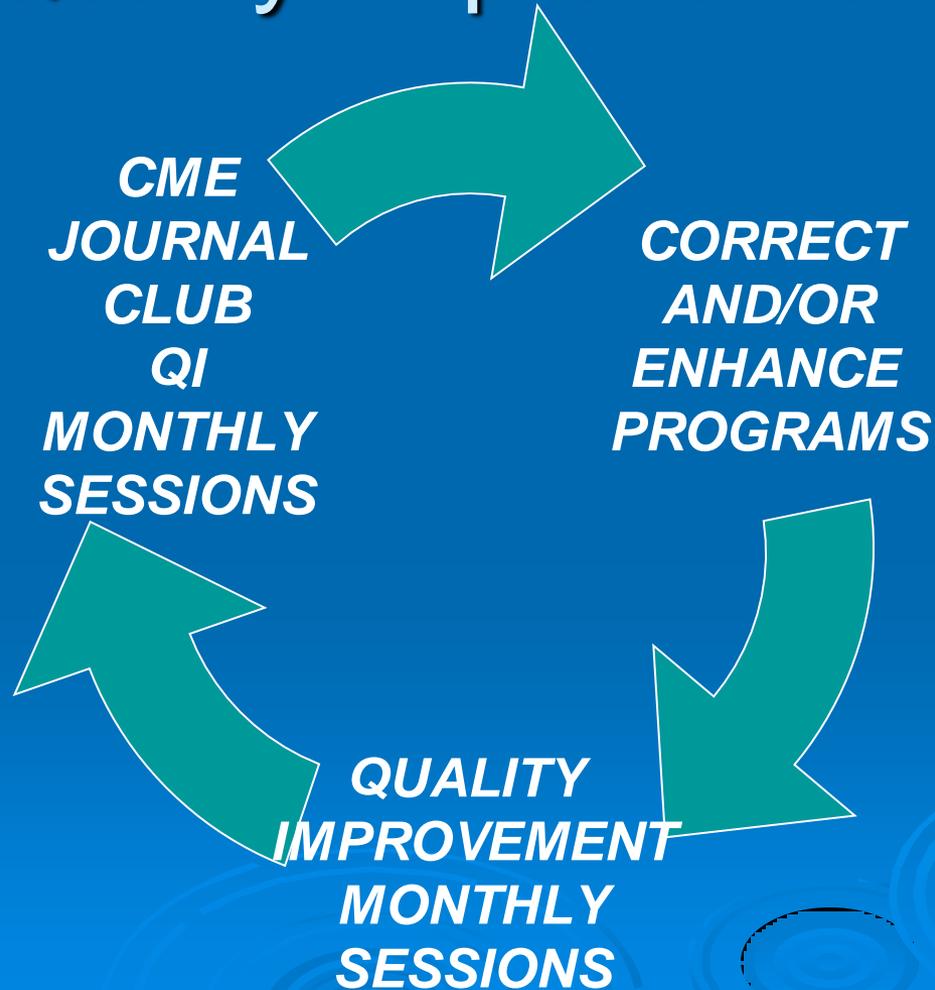
- *Brachial Plexus Injury Program*
- *Craniofacial Program*
- *Epilepsy Program*
- *Fetal Diagnosis/Therapy Center Program*
- *Nervous System Tumor Program*
- *Spasticity Program*
- *Spinal Defects Program*
- *Telemedicine Program (State of Georgia – Children's Medical Services)*

# Central Nervous System Tumor Management Programs

- *Pediatric Oncology/Chemotherapy Regimes (Nemours Children's Clinic)*
- *Radiosurgery: Gamma Knife Surgery – Novalis™ (Baptist Health)*
- *LINAC Radiation Therapy (Baptist Health)*
- *Proton Beam Therapy (University of Florida)*

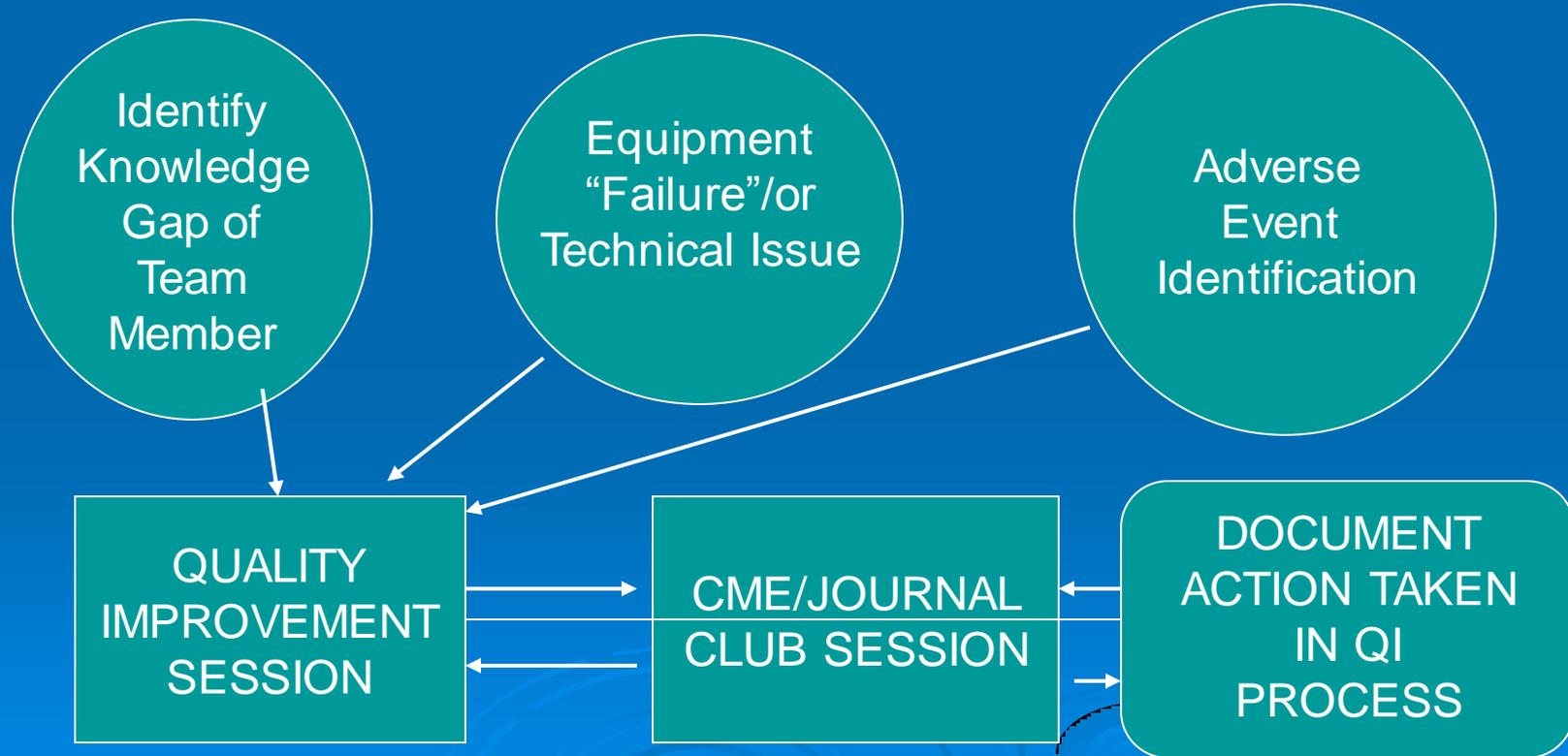
# PHASE 2

## Program Development & Quality Improvement



# Program Development Ongoing Education/Quality Improvement

## QI/CME LOOP



# PROGRAM DEVELOPMENT: A CONTINUING EXPERIENCE

## ➤ CENTER FACULTY ENHANCEMENT

- *Faculty Recruitment*
- *Fellowship Application and Program*

## ➤ TRAINING AND EDUCATION

- *Neurosurgery Residents*
- *Neurology Residents and Fellows*
- *Allied Health Personnel*

## ➤ PROGRAM ENHANCEMENT VENUES

- *Center Pharmacology Venue*
- *Center Bibliography Venue*

# PROGRAM DEVELOPMENT

## Clinical Research/Education

- ***CLINICAL RESEARCH FOR QI ISSUES***
- ***CLINICAL RESEARCH FOR RESIDENT AND FELLOWSHIP TRAINING***
- ***CLINICAL RESEARCH AS A VENUE FOR INTERDISCIPLINARY WORK***
- ***CLINICAL RESEARCH AND RESOURCE UTILIZATION***

# PROGRAM DEVELOPMENT: RECRUITING COMMUNITY AND INSTITUTIONAL SUPPORT

- *PROGRAM FINANCIAL SUPPORT*
- *PATIENT CARE FINANCIAL SUPPORT*
- *OPERATING ENVIRONMENT  
FINANCIAL SUPPORT*
- *FINANCIAL SUPPORT FOR CLINICAL  
PROGRAMS*

# What I Have Learned

- *By involving the Physician Assistant and the Nurse Practitioners in the QI and CME monthly sessions, a better “team” venue and ongoing interaction with the physicians has been realized.*
- *Involving these “Physician Extenders” in education, clinical research, preparation of manuscripts and presentations in scientific meetings, a spirit of “providing better” patient care seems to have evolved.*

# ACKNOWLEDGEMENT

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