The Role of the Advance Practice Clinician (APC) in Pediatric Trauma Care

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Objectives

- Describe the evolution of the Advanced Practice Clinician (APC) role in care of the pediatric trauma patient.
- Review APC development and implementation of various patient care models
- Discuss family, physician and nursing staff satisfaction with the APC model.
APC Role Development

- First Nurse Practitioner program opened in 1965 in Colorado (Silver & Ford)
- First Physician Assistant programs developed at Duke University in 1965
- Both developed in response to increasing rural primary health care needs
Advanced Practice Clinicians

- **Definition of Terms:**
  - **Nurse Practitioner:** licensed, independent practitioners
    - NP’s practice autonomously and in collaboration with health care professionals to assess, diagnose, treat and manage the patient’s health problems and needs
  - **Appropriate Terms:** Nurse Practitioners or independently licensed providers, advanced practice clinicians
  - **Inappropriate Terms:** Mid-level provider or physician extender
  - **Education:** Masters degree, post-Masters certificate, Doctorate degree (DNP, DNSc)
  - **NP’s practice under their individual state’s legislative/regulatory body**

aanp.org, 2013
2014 Nurse Practitioner State Practice Environment

**Full Practice**
State practice and licensure laws provide for nurse practitioners to evaluate patients, diagnose, order and interpret diagnostic tests, initiate and manage treatments—including prescribe medications—under the exclusive licensure authority of the state board of nursing. This is the model recommended by the Institute of Medicine and National Council of State Boards of Nursing.

**Reduced Practice**
State practice and licensure law reduce the ability of nurse practitioners to engage in at least one element of NP practice. State requires a regulated collaborative agreement with an outside health discipline in order for the NP to provide patient care.

**Restricted Practice**
State practice and licensure law restricts the ability of a nurse practitioner to engage in at least one element of NP practice. State requires supervision, delegation or team-management by an outside health discipline in order for the NP to provide patient care.
Advanced Practice Clinician

**Physician Assistant**: must practice in association with a physician

- **Education**: Master’s Degree minimum
- **Practice**: in collaboration with health care professionals to assess, diagnose, treat and manage the patient’s health problems and needs
Advanced Practice Clinicians

- Credentialing
  - Application process that ensures professional competence (education, licensure, certification, DEA certificates, liability insurance and demographics)

- Privileging
  - A component of the credentialing process that defines a broader scope of practice including specific technical skills the APC is allowed and competent to perform within the institution
APC Scope of Practice

- **Process of Care**
  - Assessment of Health Status, Diagnosis, Development of Treatment Plan, Implementation of Plan, Follow-up and Evaluation of patient status

- **Care Priorities**
  - Patient and Family Education, Facilitation of Self Care, Promotion of Optimal Health and a Safe Environment

- **Interdisciplinary and Collaborative responsibilities**

- **Accurate documentation of patient status and care**

- **Patient Advocate**

- **Quality Improvement**

- **Research Basis for Practice**
Necessity for APC Role
Expansion into other settings

- 1960’s – large underserved rural population requiring primary care providers
- 1990’s – NP and PA’s transitioned from primary care into specialty fields
- 2003 - Changes in the Medical Residency work hour requirements (ACGME), affecting large teaching hospitals with increasing patient care management needs requiring acute care providers

Nyberg et al, 2010
Review of APC role
-Acute Care Setting

- Patient Satisfaction with Care received from NP’s
  - NP’s were more active listeners
- Comparison of Care Provided by NP’s and MD’s
  - coordination of care and increased counseling associated with increased patient satisfaction with care provided by nurse practitioners
- Models of NP practice – collaborating within a multi-disciplinary team
  - showed NP’s support effective interpersonal communication, provide a central coordinating role and ensure care is provided safely and effectively

Summary Report, College of Registered Nurses of Nova Scotia, 2013
APC Role affect on: Patient Care Quality, Effectiveness and Safety

- Literature review (1990-2009) 63 studies met criteria, both primary care and acute care settings included, adult and pediatric patients
- Eleven patient outcomes were identified and NP vs. MD had similar outcomes
  - **Quality of Care**
    - Decrease in unexpected ED visits, hospital LOS, and improved functional status, patient satisfaction, and patient perception of health status
  - **Effectiveness of Care**
    - Similar outcomes for patient blood pressure, blood glucose levels and serum lipid levels
    - Improved outcomes with care by NP vs. MD related to lipid level control
  - **Safety**
    - similar outcomes for mortality

Stanik-Hutt et al, 2013
Quality and Effectiveness of Care provided by hospital based Nurse Practitioners

- Fanta, 2006 - PNP and Attending MD vs. Resident MD and Attending MD care model on an inpatient trauma service (2 month old – 17 year old), decreased length of stay in PNP/Attending group
- Meyer, 2005 – ACNP and surgeon team vs. surgeon alone care model, adults in a CICU, based on length of stay as outcome measured reducing LOS by 1.91 days and reducing total cost of care per episode by $5,038.91
- Cowan, 2006 – NP/Hospitalist team demonstrated no increase in re-admission or mortality rate and decreased LOS by one day compared to MD/MD team
- Kleinpell et al, 2008 – NP’s in an ICU setting positively impacted patient care by enhancing work flow and demonstrated NP’s allowed more time to discuss patient care issues and interact more with patient’s families than physician colleagues
APC Role - Evaluation

- Perception of role and communication surveys
  - Nyberg et al, 2010 – surveyed ACS Level I and II Trauma Directors
    - Found NP's and PA's are increasingly used in Trauma Centers while improving efficiency and patient satisfaction
  - Collins et al, 2013 – physician and nursing staff agreed the NP role in a step-down ICU was not only perceived beneficial and improved patient care but also decreased the overall LOS, saving $9 million in hospital charges
Role of PNP’s in Quality Improvement

- Frontline Clinicians are responsible for improving care and should have a significant role in such improvements and lead QI efforts in their practice settings
- Incorporated into the daily work activities
  - Developing and Tracking QI metrics
  - Guide families to quality evidenced-based information to help them make better informed health care decisions
  - Coordination of Care along the continuum

NAPNAP Position Statement, 2013
Development of the APC role in Trauma Care

- **Role Implementation**
  - Establishment of Scope of Practice (NP and PA) specific to your institution
  - Identify clinical practice work load responsibilities
  - Incorporate QI/Research role
  - Define operation issues, reporting structure
  - Salary/Benefits

Martin, KA - 2004
Trauma APC Practice models

- Adult
  - University of Colorado Hospital (Rosenthal et al, 2010)
    - acute care medicine model with APC in hospitalist role focus on cost containing quality patient care, participation in research through QI initiatives/practice protocols, and reinforce support continuing medical education (residents, nurses, students)
  - Massachusetts General Hospital (Cashavelly, et al, 2012)
    - acute inpatient team (ACS Level I) decreased LOC, increased pre-noon discharges and had lower 30 day re-admission rates
  - Intermountain medical Center, Salt lake City, Utah (Sherwood et al, 2009)
    - adult trauma (ACS Level I) all APC team developed after surgical resident hours decreased demonstrated shorter LOS for all ISS categories with statistically lower overall combined mortality rate compared to patient outcomes from the National Trauma Database, team covers ICU, floor and outpatient clinic patients
  - Hurley Medical Center, Flint, Michigan (Mikhail et al, 2009)
    - 23 year experience of APC care in adult trauma in the absence of a surgical residency (ACS Level I), APC more available to patients, families, social services, consulting teams, nursing staff than any other service in the hospital covering ICU and floor patients, utilizes clinical ladder to allow APC role to evolve and meet changing program and staffing needs
Trauma APC Practice Models

- Pediatric
  - Cincinnati Children’s Hospital (Schweer et al, 2004)
    - First published report of a PNP/Attending Surgeon model
    - Joint practice model at an academic teaching institution (ACS Level I)
    - Team composition - PNP, Trauma Attending physician and surgical residents
    - Deceased length of stay with equitable clinical and functional outcomes

Schweer et al, 2004
Primary Children’s Hospital
Salt Lake City, Utah

- 1996 – 2002 Trauma Program development
  - ACS Consult visit 1996
  - First Trauma PNP hired 1998
  - ACS Level I Pediatric Trauma Center since 2002
  - 24/7 Trauma NP coverage since 2002
    - NP/Attending Surgeon team

- Pediatric Trauma Program Stats - 2013
  - Trauma Activations   378
  - Trauma Admits:
    - Trauma Service - 698   All Trauma Admits - 1367
Primary Children’s Hospital
APC Team

- **Clinical Role**
  - Trauma Resuscitation and Consults
    - Admit History and Physical
    - Basic Wound closure
  - Daily Rounds
    - Develop daily plan of care, treatments and discuss with parents/patients
    - Order and review lab and radiology studies
    - Documentation
      - Admit H&P’s, Daily notes, Discharge Summary

- **Coordination**
  - Sub-specialty consults
  - Discharge Planning needs
Primary Children’s Hospital APC Team

- **Education**
  - Residents and Nursing staff
  - Patients and Families
- **Quality Improvement**
  - Daily Safety Report
  - Care Guideline Development
Primary Children’s Hospital

- Collaborative Research
  - Pediatric Cervical spine Clearance
  - Trauma NP and Neurosurgeon collaboration
  - Described safe and effective practice for clearance of the pediatric cervical spine by non-neurosurgical personnel
  - Currently the majority of non-neurosurgical clearance cases are performed by the Trauma NP’s
Primary Children’s Hospital

- 2013 Trauma Simulation
  - Mandatory for all team members – yearly
  - Simulation takes place in the Trauma Bay with 2 scenarios
  - Scenarios coded to progress from basic to advanced based on team members responses and can be tracked for future research
APC Role - Evaluation

- Satisfaction survey
  - Parents Perspective
    - Ohio (Fanta et al, 2005)
      - NP team scored significantly higher on providing information regarding child's injury, medical tests, and treatment given vs. Resident team
APC Role evaluation at Primary Children’s Hospital

- Consultant Physician Survey
  - Included: Neurosurgery, Plastic Surgery, Orthopedics, Radiology, Emergency Medicine
"There is open, direct communication and interaction between the Trauma Nurse Practitioner and your team."

Response options:
- Strongly Agree
- Mainly Agree
- Neither Agree nor Disagree
- Mainly Disagree
- Strongly Disagree
"The Trauma Nurse Practitioner plays an integral role in planning the care of patients each day."

Response options:
- Strongly Agree
- Mainly Agree
- Neither Agree nor Disagree
- Mainly Disagree
- Strongly Disagree
"The Trauma Nurse Practitioner provides a timely response to your team in meeting patient needs."

Response options:
- Strongly Agree
- Mainly Agree
- Neither Agree nor Disagree
- Mainly Disagree
- Strongly Disagree
APC Role evaluation at Primary Children’s Hospital

- Nursing Staff Survey
  - Included Emergency Department, PICU, Neuro-Trauma unit, Infant and Surgical units
There is open, direct communication and interaction between the Trauma Nurse Practitioner and nursing staff

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The Trauma Nurse Practitioner includes the bedside nurse in discussions of the plan of care for the trauma patients

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The Trauma Nurse Practitioner provides a timely response in meeting patient needs

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% of that unit’s respondents
Trauma/Surgery APC transition at PCH

- Staffing model
  - Trauma NP only 2002 – 2013
  - 2014 Combined Trauma and Pediatric Surgery APC teams
  - 2014 – current staff with Trauma/Surgery APC’s (24/7) and Pediatric Surgery Fellow, rotating Residents (3rd & 1st year)
  - Responding clinician to patient needs and consults

- Orientation model combined key components of both services
Future APC Role Development

- Orientation
  - Wilson et al, 2013 surveyed NP’s and PA’s at Trauma Centers regarding initial training and ongoing professional development
    - Identified the need for ongoing mentorship, professional development and academic development
- Clinical
  - Expanded roles in Resuscitation, Inpatient acute and critical care management, Outpatient clinic follow-up management
- Education
  - Rotating Residents, APC Fellowships and Nursing staff
  - Regional Advanced Practice Trauma and Critical Care Conference, September 17-20, 2014, Park City, UT
- Quality Improvement
  - Frontline users that can easily identify areas to improve care delivery and patient outcomes and track success in a variety of Trauma Program areas
- Research
  - Clinical Patient care, APC role, trauma system improvement
References