



# **2008 NCC Task Analysis Content Validation Study**

## **Neonatal Pediatric Transport Subspecialty Examination**

**Final Report**

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## 1. Background and Overview

The purpose of the task analysis/content validation study is to describe the domain of practice, knowledge, skills and abilities that are essential to the specialty practice of health professionals who provide transport of neonatal and pediatric patients based on neonatal pediatric transport knowledge.

The application of the data collected is used to identify test content to be included in the NCC subspecialty examination in Neonatal Pediatric Transport and to determine skills, knowledge and abilities of those engaging in NPT practice.

The content team reviewed the results of the Content Validation/Task Analysis at their September 2008 meeting. Based on their review, additions and deletions to the proposed test outline were made prior to its publication and prior to the development of the first examination.

## 2. Development Process

### Logistic review

NPT content team members, a geographically diverse group representing both academic and clinical practice venues, were charged with the task of development of the tasks as associated with the test outline.

With psychometric consultation, the tasks/skills identified by the content team were formulated into a survey instrument. Questions asked for each knowledge component or domains for query centered on the following:

- Management responsibilities for the assessment/management of neonatal or pediatric patients with certain conditions who are being transported
- Use of specialized equipment for neonatal/pediatric patients
- Drug management of the neonate or pediatric patient that requires transport
- Engagement of specific skills relative to neonatal/pediatric transport

### Documents

The following documents were reviewed:

Standards of Practice and Educational Guidelines from

- a. - Guidelines for Air And Ground Transport of Neonatal And Pediatric Patients
- ASTNA Patient Transport: Principles and Practice (Air & Surface Patient Transport: Principles and Practice

- Neonatal Nursing Scope and Standards of Practice, ANA
  - Pediatric Nursing Scope and Standards of Practice, ANA
  - Guidelines for Perinatal Care, AAP
  - Standards for Professional Nursing Practice in the Care of Women and Newborns
- b. Review of current NCC competency statements and general and detailed test outlines for the neonatal pediatric transport subspecialty examination.
  - c. Identification of Essential Knowledge, Skills and Abilities
  - d. Identification of Specialized Equipment used in neonatal pediatric transport.

The NPT Content Team based on the document review identified competencies of health care professionals involved in neonatal pediatric transport. General discussion on the recently developed competency statements and content included in the test outline was also initiated. After general discussion, the related tasks and skills associated with the specific content area were identified and prioritized.

### **3. Data Collection**

The Zoomerang software was used for survey deployment and aggregate data compilation from survey responses. All those responding to an initial interest survey with a valid email (approximately 1500) were notified by email and a general invitation to participate was on the NCC website.

Detailed summary results is shown later.

# 2008 Neonatal Pediatric Transport Validation/Task Analysis Study Survey Map

## Instructions to Participants

We need your input to insure that the NCC Neonatal Pediatric Transport subspecialty examination is reflective of the required NPT skills required for transport practice. With every new examination such as the NPT and then every 3-5 years thereafter, NCC conducts a content validation study or task analysis for each of the certification examinations NCC offers. Once an examination is established, credentialed individuals are asked to participate in the survey that asks about the nature of clinical practice. For new examinations, practitioners like you who have expressed an interest in the new examination are surveyed. Invaluable input is obtained from these surveys and assists the NCC Content Teams to make sure the certification examinations reflects current practice and trends.

The questions on the survey are categorized according to the identified domains. The following lists only the questions. To review the answer options, refer to Test Results.

## Demographics & Practice Characteristics of Neonatal Pediatric Transport

- What is your profession?
- What type of patients do you transport?
- Primary transport mode by percentage of total annual transports?
- What is your primary practice setting?
- What type of position do you hold?
- What percentage of time of your total position is devoted to transport activities?
- How many transports does your transport team handle annually?
- What is your highest level of education?
- How long have you been a neonatal pediatric transport professional?
- Where is your location?
- Does your transport team engage in scene management?
- Has your transport team had survival training?
- Does your transport team engage in disaster planning?
- Are your transport team members required to maintain an active status on any of the following credentials?

## Skills and Procedures

- Intubate patients
- Use laryngeal masks
- Perform needle cricothyroidotomy

- Establish intravenous access
- Establish intraosseous access
- Inert UVC
- Insert UAC
- Perform needle aspiration
- Perform chest tube insertion
- Perform cardioversion
- Perform pericardiocentesis
- Perform physical exams
- Manage patients on mechanical ventilation
- Manage patients requiring pain management
- Manage patients who require sedation
- Other

### **Neonatal Pediatric Conditions, Equipment and Medications**

- Part 1 - Check those conditions or situations you frequently handle during the transport process for either or both neonatal and pediatric patients (check all that apply). Frequently is defined as more than 5% of your transports regardless of the total number you do.
- Part 2 - Check those conditions or situations you frequently handle during the transport process for either or both neonatal and pediatric patients (check all that apply). Frequently is defined as more than 5% of your transports regardless of the total number you do.
- Part 3 - Check those conditions or situations you frequently handle during the transport process for either or both neonatal and pediatric patients (check all that apply). Frequently is defined as more than 5% of your transports regardless of the total number you do.
- Check all equipment you frequently use during the transport for either or both neonatal and pediatric patients (whichever is applicable). Frequently is defined as more than 5% of your transports regardless of the total number you do.
- Check all drugs or agents you frequently use during the transport for either or both neonatal and pediatric patients (whichever is applicable). Frequently is defined as more than 5% of your transports regardless of the total number you do.

## **4. Survey Results**

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# 2008 Neonatal Pediatric Transport Content Validation Study Results

Response Status: Completes | Partial

934 of 702 were complete

Sep 23, 2008 1:46 PM PST

## 1. What is your profession?

Nurse	524	67%
Nurse Practitioner	160	20%
Paramedic	9	1%
Physician	14	2%
Respiratory Therapist	58	7%
Other, please specify	20	3%
<b>Total</b>	<b>785</b>	<b>100%</b>

## 2. What type of patients do you transport?

Neonates only	512	66%
Pediatric patients only	24	3%
Mixed neonatal/pediatric population	221	28%
Other, please specify	20	3%
<b>Total</b>	<b>777</b>	<b>100%</b>

## 3. Primary Transport Mode by Percentage (%) of Total Annual Transports

Air	40%
Ground	60%

### Detail

Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	10% or less	20%	30%	40%	50%	60%	70%	80%	90%	100%
Air	158 30%	86 16%	72 14%	68 13%	40 8%	28 5%	18 3%	25 5%	22 4%	6 1%
Ground	24 3%	28 4%	18 2%	27 4%	42 6%	69 9%	71 9%	90 12%	128 17%	252 34%

## 4. What Is Your Primary Practice Setting?

NICU Level 1	5	1%
NICU Level 2	30	4%
NICU Level 3	555	73%
PICU	58	8%
Low Risk Nursery	3	0%
Emergency Department	6	1%
Academic Setting	14	2%
Other, please specify	86	11%
<b>Total</b>	757	100%

#### 5. What type of position do you hold?

Full time	649	86%
Part time	106	14%
<b>Total</b>	755	100%

#### 6. What Percentage of Time Of Your Total Position Is Devoted To Transport Activities?

It is your primary position and more than 50% of your time is devoted to transport activities

	227	31%
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It is part of your position and less than 50% but more than 10% of your time is devoted to transport activities

	267	36%
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It is adjunct to your position and less than 10% of your time is devoted to transport activities

	248	33%
<b>Total</b>	742	100%

#### 7. How many transports does your transport team handle annually?

Less than 100	210	28%
100-300	242	33%
301-500	118	16%
Over 500	169	23%
<b>Total</b>	739	100%

#### 8. What is your highest level of education?

MD	13	2%
Doctorate	3	0%
DNP	3	0%
Post Master's	20	3%
Master's	170	23%
Baccalaureate	294	39%
Associate degree	160	21%



Diploma	57	8%
Other, please specify	25	3%
<b>Total</b>	<b>745</b>	<b>100%</b>

**9. How long have you been a neonatal pediatric transport professional?**

Less than a year	49	7%
1-5 years	151	21%
6-10 years	153	21%
11-15 years	114	16%
16-20 years	113	15%
Over 20 years	153	21%
<b>Total</b>	<b>733</b>	<b>100%</b>

**10. Where is your location? (All refer to the U.S except otherwise noted.)**

North	44	6%
South	196	27%
West	122	17%
East	145	20%
Midwest	201	27%
Outside the U.S.	11	1%
Other, please specify	18	2%
<b>Total</b>	<b>737</b>	<b>100%</b>

**11. Does your transport team engage in scene management?**

Yes	247	34%
No	482	66%
<b>Total</b>	<b>729</b>	<b>100%</b>

**12. Has your transport team had survival training?**

Yes	320	44%
No	407	56%
<b>Total</b>	<b>727</b>	<b>100%</b>

**13. Does your transport team engage in disaster planning?**

Yes	287	39%
No	445	61%
<b>Total</b>	<b>732</b>	<b>100%</b>

**14. Are your transport team members required to maintain an active status in any of the following?**

**(check all that apply).**

NRP	705	97%
PALS	305	42%
ACLS	176	24%
ATLS	36	5%
BTLS	93	13%
ITLS	21	3%
Other, please specify	168	23%

**15. Please indicate any or all skills and procedures that you use during transport.  
(check all that apply).**

Intubate patients	610	84%
Use laryngeal masks	252	35%
Perform needle cricothyroidotomy	103	14%
Establish intravenous access	709	97%
Establish intraosseous access	296	41%
Insert UVC	550	75%
Insert UAC	479	66%
Perform needle aspiration	576	79%
Perform chest tube insertion	321	44%
Perform cardioversion	249	34%
Perform pericardiocentesis	71	10%
Perform physical assessment exams	707	97%
Manage patients on mechanical ventilation	711	98%
Manage patients requiring pain management	686	94%
Manage patients who require sedation	676	93%
Other, please specify	115	16%

**16. This Part 1 of three parts on Neonatal Pediatric Conditions. Check those conditions or situations you frequently handle during the transport process for either or both neonatal and pediatric patients (check all that apply). Frequently is defined as more than 5% of your transports regardless of the total number you do.**

Accidental trauma	145	21%
Acute GI obstruction	426	61%
Acute renal failure	178	26%
Air leak syndrome	439	63%
Altered electrolyte balance	424	61%
Altered mental status	221	32%
Anaphylactic shock	98	14%
Anemia	316	46%
Aspiration	456	66%
Asthma	176	25%
Blast injury	15	2%
Bradycardia	404	58%
Burns and smoke inhalation	75	11%
Cardiogenic shock	259	37%
Choanal atresia	284	41%
Chronic lung disease	448	65%
Chronic renal insufficiency	120	17%
Coma	92	13%
<b>Congenital anomalies (not listed elsewhere)</b>	<b>577</b>	<b>83%</b>
Congestive heart failure	281	41%
Croup (Laryngotracheobronchitis)	167	24%
Cyanotic heart diseases	506	73%
Cystic fibrosis	80	12%
Diabetes	124	18%
Diabetic ketoacidosis	167	24%
Diaphragmatic hernia	417	60%
Disseminated intravascular coagulation	278	40%
Distributive (septic) shock	413	60%
Dog or other animal bites	45	6%
<b>Ductal dependent heart lesions</b>	<b>522</b>	<b>75%</b>
Dysrhythmias	313	45%

**17. This Part 2 of three parts on Neonatal Pediatric Conditions. Check those conditions or situations you frequently handle during the transport process for either or both neonatal and pediatric patients (check all that apply). Frequently is defined as more than 5% of your transports regardless of the total number you do.**

Epiglottitis	102	15%
Falls	104	15%
Foreign body obstruction	123	18%
Fractures	117	17%
Gastroschisis	442	66%
GI hemorrhage	175	26%
<b>GI obstruction</b>	<b>438</b>	<b>65%</b>
Hemophilia	52	8%
Hemorrhage	232	34%
Human bites	20	3%
Hypertension	162	24%
<b>Hypoglycemia</b>	<b>548</b>	<b>81%</b>
Hypovolemic shock	489	73%
Increased intracranial pressure	261	39%
Ingestions/poisonings	144	21%
Intracranial hemorrhage	407	60%
Left to right shunting	505	75%

**18. This Part 3 of three parts on Neonatal Pediatric Conditions. Check those conditions or situations you frequently handle during the transport process for either or both neonatal and pediatric patients (check all that apply). Frequently is defined as more than 5% of your transports regardless of the total number you do.**

Meningitis	295	42%
Near drowning	130	19%
Necrotizing enterocolitis	516	74%
Neutropenia	269	38%
Non-accidental trauma	143	20%
Ompalocele	373	53%
Pericarditis	110	16%
Perinatal substance abuse	317	45%
Persistent pulmonary hypertension of the newborn (PPHN)	613	87%
Pierre Robin syndrome	328	47%
Pneumonia	508	72%
Postoperative procedures	174	25%
Radiation exposure	10	1%
<b>Respiratory distress syndrome</b>	<b>663</b>	<b>94%</b>
Respiratory failure	463	66%
<b>Seizures</b>	<b>568</b>	<b>81%</b>
<b>Sepsis</b>	<b>600</b>	<b>85%</b>
Sickle cell crisis	81	12%
Snake bites	29	4%
Spider bites	22	3%
Status epilepticus	182	26%
Supraventricular tachycardia	327	47%
Surgical emergencies	326	46%
Tachycardia	311	44%
Thrombocytopenia	289	41%
Thyroid storm	21	3%
Tracheoesophageal fistula	365	52%
<b>Very low birthweight infant</b>	<b>620</b>	<b>88%</b>
Volvulus	242	34%
Other, please specify	19	3%

**19. Check all equipment you frequently use during transport for either or both neonatal and pediatric patients (whichever is applicable). Frequently is defined as more than 5% of your transports regardless of the total number you do.**

Cardiac monitor	708	100%
Pulse oximeter	708	100%
Transcutaneous monitor	148	21%
End Tidal CO2 monitor	313	44%
Incubators	689	97%
Nasal cannula	679	96%
Simple oxygen mask	439	62%
Partial rebreather mask	149	21%
Nonbreathing mask	202	28%
Mechanical ventilators	691	97%
Infusion pumps	703	99%
Temperature sensing devices	632	89%
Radiant warmer devices	343	48%
Other, please specify	87	12%

**20. Check all drugs or agents you frequently use during transport for either or both neonatal and pediatric patients (whichever is applicable). Frequently is defined as more than 5% of your transports regardless of the total number you do.**

Acetaminophen	111	16%
Adenosine	177	25%
Albuterol	208	30%
<b>Ampicillin</b>	<b>586</b>	<b>84%</b>
Atropine	136	20%
Calcium chloride	81	12%
Calcium gluconate	245	35%
Cerftriaxone	133	19%
Cromolyn	19	3%
Dexamethasone	162	23%
<b>Dextrose</b>	<b>582</b>	<b>84%</b>
Diazepam	151	22%
Diphenhydramine	61	9%
Dobutamine	397	57%
<b>Dopamine</b>	<b>559</b>	<b>80%</b>
Epinephrine	372	53%
Fentanyl	470	68%
Flumazenil	32	5%
Fosphenytoin	136	20%
Furosemide	186	27%
Hydrocortisone	127	18%
Inamrinone	35	5%
Insulin	191	27%
Isuprel	29	4%
<b>IV fluids</b>	<b>639</b>	<b>92%</b>
Levabuterol	34	5%
Lidocaine	74	11%
Lorazepam	266	38%
Magnesium sulfate	83	12%
Methylprednisolone	84	12%
Midazolam	321	46%
Morphine	382	55%
Naloxone	199	29%
Nitroglycerin	23	3%
Nitroprusside	36	5%

Pancuronium	160	23%
Penicillin	75	11%
Phenobarbital	406	58%
Procainamide	27	4%
Propranolol	40	6%
Sodium bicarbonate	406	58%
Succinylcholine	66	9%
Surfactant	532	76%
Terbutaline	63	9%
Thiopental	22	3%
Vancomycin	247	35%
Vecuronium	210	30%
Verapmil	21	3%
Vitamin K	302	43%
Other (Please specify)	128	18%