



The RN Role during Inter-facility Transport Using Evidence Based Protocols

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CNMC Transport Team

- 36 FT, 11 PT staff dedicated to Transport.
- Pediatric Ground Team started in 1993
- Dedicated Air Team started in July 2006



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CNMC Transport Team

Statistics:

- Combined Pediatric and Neonatal: 5800 (FY '08) transports /year or ~ 480/month!
- Serving Greater DC metro area, Eastern Shore, MD, Delaware, W. Virginia by ground and air.

Transport FY '06		
No.	%	Type
2,526	52%	Medical
878	18%	Neonatal
651	13%	Trauma
370	8%	Surgical
270	6%	Psych.
83	2%	Cardiac
70	1%	Ob/Gyn
39	1%	Adult (Non Ob/Gyn)



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CNMC Transport Team

Team Members

Medical Control MD, CommSpec's, EMT-B, NREMT-P, RN, RRT

Team Configuration

Pediatric and Neonatal Teams

Ground-

EMT-B, NREMT-P (Medic), RN + RRT for airway/intubated patients.

Air-

Safety Officer, Pilot, NREMT-P, RN, +RRT for airway/intubated patients.



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CNMC Transport Levels

Level I – BLS, EMT-B and Medic

Level II – Critical care, EMT-B, Medic, RN

Level III – Critical care configuration, plus
Respiratory and/or MD



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Providers Licensure/Certifications:

- **EMT-B:** CPR, Emergency Vehicle Operator Certification (EVOC)
- **NREMT-P (Medic):** ACLS, CPR, PALS, NRP; CCEMT-P (recommended)
- **RRT (Registered Respiratory Therapist):** CPR, PALS, NRP
- **RN:** at least 3 yrs ICU and/or ED experience, CPR, PALS, NRP and CCRN, CFRN or CEN certifications, plus advanced skills.

All dependent upon successful completion of orientation and Evidence Based protocol interactive skills and oral board exam!



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CNMC Transport Team

Nurse Advanced Skills

(tested with EBP protocol skills lab 4x/year)

- Endotracheal Intubation
- Needle Thoracostomy
- Radial Arterial Puncture
- Intraosseous Access
- Peripheral EJ Access



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Medical Direction:

- Medical Control MD's: Are all attending physicians and Fellows specially trained in Pediatric Medicine (Residency 4 years, fellowship 3 years) Board Certified Pediatricians with an additional 3 year fellowship in Emergency Medicine
- Ability to suggest care to treating physicians at outlying facilities while awaiting Transport Teams arrival
- Assuring Children's Care before arrival to CNMC and continuing through ED and In-patient course.



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Emergency Communication and Information Center (ECIC)

Communication Specialists (CommSpec's)

- 100% EMT-B trained and 75% National Association of Air Medical Communications Specialists (NAACS), a 4 year certification.
- Arrange for referrals of pediatric patients from community physicians, clinics, schools, and hospitals and dispatch and monitor all ground and air teams.
- Coordinate emergent page responses for hospital personnel.
- In the event of a disaster in the DC metro area, acts as communications hub for all hospitals through the DC Hospital Association HMARS System



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CNMC Transport Team

Our current vendors:

Lifestar Ambulance, Inc:

4 ACLS ambulances, EMT-B's, a mechanic and vehicle maintenance.

StatMedevac, Inc:

1 Eurocopter EC145 helicopter, safety officer, mechanic, a/c maintenance, and back-up a/c if needed.



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Anatomy of a Call

- Referral Hospital calls for patient transfer, or consult.
- Medical Control Officer (MCO) – Emergency Room Physician suggests treatments and triages call, enters pre-arrival patient info into hospital based charting system (Cerner/FirstNet).
- ECIC-Dispatches call to Team



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Anatomy of a call cont.

- Dispatched team receives page including: Referral Hospital, Name of patient, Level, and time-out.
- Team gets Pre-arrival info from Cerner/First Net
 - prints out pre-arrival sheet
 - prints out code sheet based on Weight of the Patient.
- Gathers Meds and Equipment and head to Ambulance.
- Team radio's ECIC time of departure to referral.



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Emergency!!



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A case review: Pre-arrival and Arrival

Pre-arrival Summary

Referral History/Mechanism of Injury: 4yo 17.6 kgs male w/posterior neck pain, erythema, fever started 3 days ago. Had T & A one month ago. Bilateral cervical adenopathy on CT, clinically worse on L

VS	Time	Temp	HR	RR	BP	O2Sat	%O2
#1		102.4	114	18		100	ra

Treatment:

IVNS bolus; D51/3 maint., BC sent
Meds: Rocephen 50/kg

Labs:

Na 132	Cl 96	BUN 9	Gluc. 92	WBC 14
K 3.7	HCO ₃ 21	Cr 0.3		



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Arrival

- Pt. sitting up on stretcher, ill appearing, fussy.
- Guarding neck, keeping head mid-line, limited ROM.
- But! Taking PO's and in No Apparent Distress
- On taking H & P from Mother, she noted taking patient to PMD where he was diagnosed with Mumps and sent home with steroids and antibiotics.



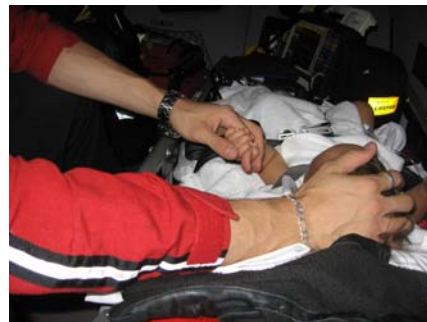
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Assessment

Noted upon Assessment:

- VS: T-102.4; HR 114; BP 96/55; Sats 100% (RA)
- Bilat. Cervical adenopathy
 - Bilat. Conjunctivitis
 - Erythema to bilat. palms and soles of feet
 - Febrile (102.4)
 - WBC's 14; other labs WNL



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Differentials

Forget what you know now,



What were you thinking?



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What did you come up with?

- Strep?
- Retropharyngeal abscess?
- Surgical Complication?
- Juvenile Rheumatoid Arthritis (JRA)?
- Cellulitis ?



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Assessment

The Kicker!

Strawberry Tongue –
plus reddened cracked lips



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Kawasaki Disease:

Not
just a
Motorcycle!



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Kawasaki Overview

- Named after **Tomisaku Kawasaki** a Japanese pediatrician
- Often called mucocutaneous lymph node syndrome, **or** Kawasaki Syndrome
- It is an inflammatory disease affecting systemic vasculature, more importantly the coronary arteries.
- Can eventually lead to coronary artery aneurysms
- Has unknown etiology
- More common in Males of Asian descent
- Has surpassed acute rheumatic fever as the most common cause of acquired heart disease in the pediatric population.



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Helpful Mnemonic

C.R.A.S.H. and Burn

- C-** Conjunctival Infection (Red Eyes w/o drainage)
 - R-** Rash (Usually truncal)
 - A-** Adenopathy (Often Cervical)
 - S-** Strawberry Tongue (dry red chapped lips and reddened tongue)
 - H-** Hands & Feet (peeling and erythema)
- &**
- BURN** - Fever lasting 3-4 days



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Re-route the Patient!

- Called back MCO with findings and recommendations
- MCO contacts hospitalist/ admitted resident on Medical Unit
- Request an in-patient bed
- Regroup with referral MD and nursing staff!



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Kawasaki Disease-Treatment

- Once Isolated and diagnosed, immediate goal is to reduce inflammation, prevent coronary artery disease and relieve symptoms.
- Administer IVIG
- Aspirin initially, then low dose for 6-8 weeks
- Some centers treat with Steroids however outcomes are inconclusive.



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Patient Outcome

- Patient had a 4 day inpatient stay on Medical Care with a working diagnosis of Kawasaki Disease.
- Received intravenous gamma globulin (IVIG) and high dose ASA for fever.
- An Echocardiogram for coronary or valvular involvement, and heart function.
- Discharged with low dose aspirin and with instruction to follow-up with cardiology and repeat Echo in 6 weeks after discharge.



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Conclusion

- Patient follows up with cardiology clinic in May for repeat Echo which was normal: no coronary or valve involvement, heart function normal.
- Aspirin therapy stopped and no follow-up required!



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Wrap-up



I hope you have a better understanding of the role of the Nurse on the Transport Team. Our advanced skills and protocol based practice is essential for the delivery of safe and efficient patient care, from referral, to treatment as seen in the case review.



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Thank You!!



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