

Investigating Paramedic Service Use by Home Care Clients

Matthew Leyenaar A-EMCA, BSc, MA, PhD (c)

PhD Candidate, Health Research Methodology Program, McMaster University

Andrew Costa, PhD

Clinical Epidemiology & Biostatistics



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Do home care clients use
paramedic services?



Twitter @MatthewLeyenaar #IRCP

email: leyenam@mcmaster.ca

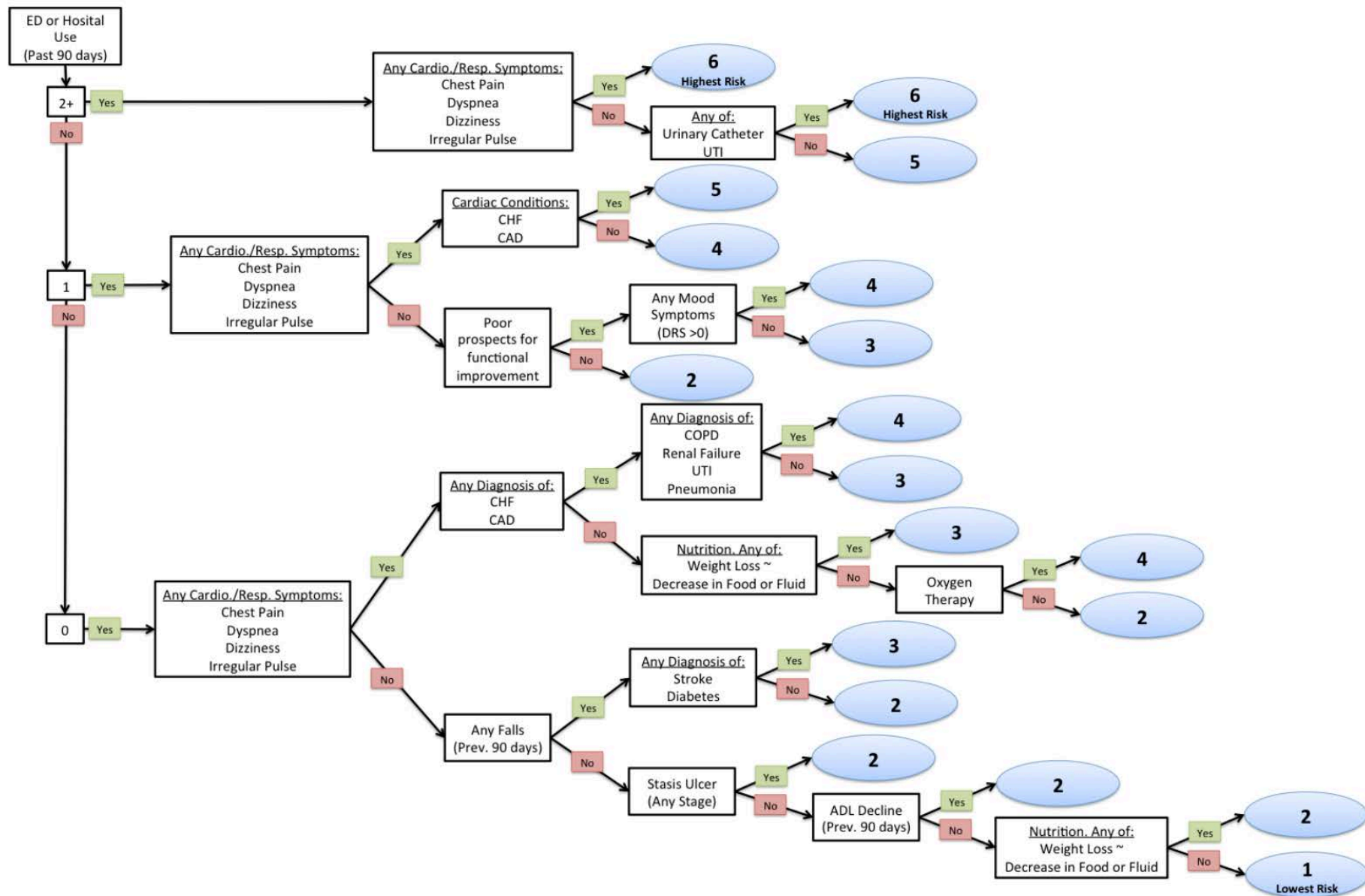


Background

- A case finding tool was recently validated to identify risk factors in home care clients who visit the ED (Costa et al., 2015).
- The DIVERT tool uses data collected from the interRAI Home Care assessment to generate 6 risk levels that are predictive of visits to the ED by home care clients

Who in the room is familiar with the interRAI suite of tools?





What risk factors are associated with paramedic service use by home care clients?

- 6 months of ED visits to 13 sites within the Hamilton Niagara Haldimand Brant (HNHB) Local Health Integrated Network (LHIN) were used for preliminary investigation.
- The analysis was comprised of two parts for visits to the ED by home care clients with a completed RAI-HC.
- In part one, the dependent variable of interest was whether patients arrived via ambulance or not. In the second part, discharged patients were compared to non-discharged patients (admitted, transferred, or died).
- Independent variables included classification of DIVERT level of risk and a variety of social and demographic indicators.
- Unadjusted and adjusted OR were calculated through logistic regression with associated diagnostic tests for model performance.



Hamilton Niagara Haldimand Brant Local Health Integration Network (4) Réseau local d'intégration des services de santé de Hamilton Niagara Haldimand Brant (4) Legend / Légende

- Cities / Towns ■ Villes
- Communities ● Communautés
- Lower Tier Municipal boundary Limites de municipalité de palier inférieur
- Regional Municipality / District / County boundary Limites de municipalité régionale / district / comté
- Major roads — Routes principales
- Minor roads — Routes secondaires

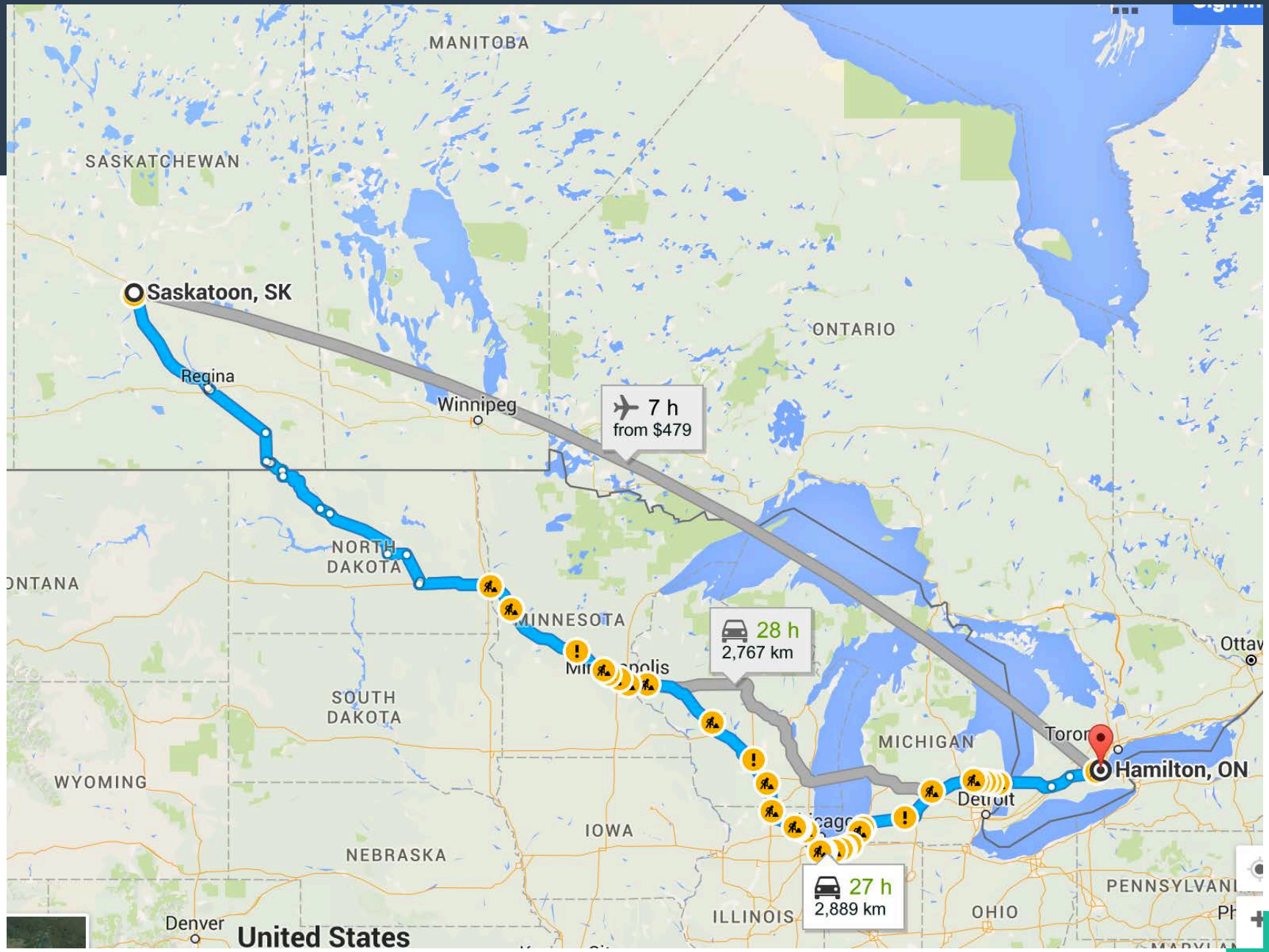
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United States

Results: Paramedic Transport

Table 1.1: Unadjusted and adjusted odds ratios predicting arrival via ambulance for home care clients that visited the ED having a completed RAI-HC assessment.

Variable	Odds Ratio (95% Confidence interval)	
	Unadjusted	Adjusted
Divert 1	1.00	1.00
Divert 2	1.084 (0.889 – 1.322)	1.007 (0.817 – 1.242)
Divert 3	0.753 (0.606 – 0.937)	0.703 (0.559 – 0.884)
Divert 4	0.869 (0.697 – 1.082)	0.825 (0.654 – 1.040)
Divert 5	0.884 (0.703 – 1.112)	0.842 (0.662 – 1.071)
Divert 6	1.093 (0.846 – 1.413)	0.981 (0.748 – 1.286)
Age	1.033 (1.029 – 1.037)	1.035 (1.031 – 1.040)
Female	1.197 (1.059 – 1.353)	1.361 (1.139 – 1.627)
Live with a Caregiver	1.080 (0.956 – 1.220)	1.255 (1.040 – 1.514)
Live in a Private Dwelling	0.945 (0.806 – 1.109)	
Attended Post Secondary	0.930 (0.792 – 1.091)	
Rural	1.145 (0.970 – 1.352)	
Interaction (Gender*Caregiver)		0.760 (0.587 – 0.984)
Off Hours	2.089 (1.841 – 2.369)	2.385 (2.092 – 2.720)

Results: Discharged after transport

Table 2.1: Unadjusted and adjusted odds ratios predicting discharge from ED following arrival via ambulance for home care clients that visited the ED having a completed RAI-HC assessment.

Variable	Odds Ratio (95% Confidence interval)	
	Unadjusted	Adjusted
Divert 1	1.00	1.00
Divert 2	1.661 (1.171 – 2.357)	1.618 (1.138 – 2.300)
Divert 3	1.658 (1.122 – 2.450)	1.569 (1.059 – 2.325)
Divert 4	1.705 (1.153 – 2.521)	1.605 (1.082 – 2.381)
Divert 5	1.628 (1.083 – 2.446)	1.574 (1.046 – 2.371)
Divert 6	0.722 (0.454 – 1.150)	0.709 (0.444 – 1.132)
Age	1.011 (1.005 – 1.016)	1.010 (1.004 – 1.016)
Female	0.912 (0.735 – 1.131)	
Live with a Caregiver	1.105 (0.892 – 1.369)	
Live in a Private Dwelling	1.181 (0.893 – 1.562)	
Attended Post Secondary	0.974 (0.734 – 1.292)	
Rural	0.824 (0.617 – 1.102)	
Off Hours	0.861 (0.688 – 1.077)	



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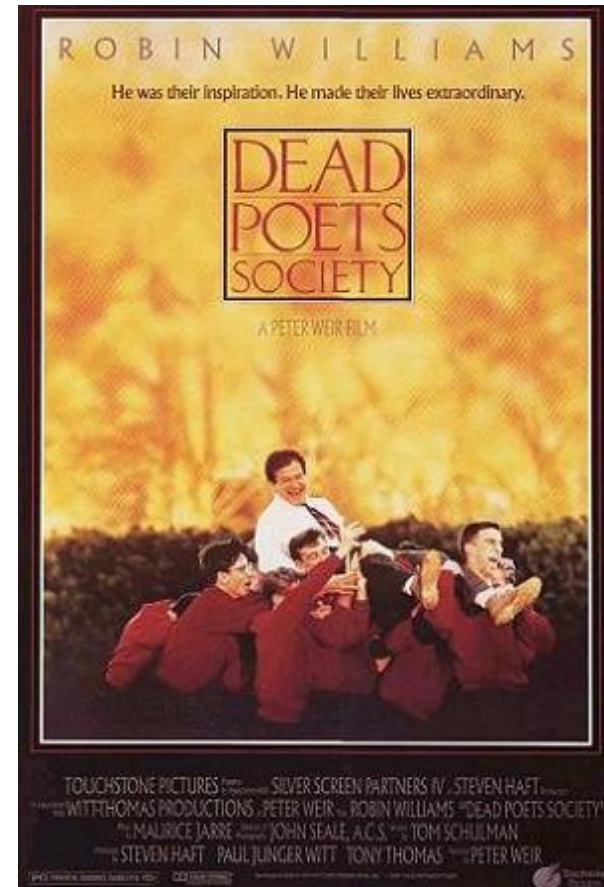
SO WHAT?!?



Next steps

- The CARPE Study
 - Common Assessments for Repeated Paramedic service Encounters

From the latin *carpe* meaning to seize or pluck. Using big data to pick out risk factors in patients that are seen repeatedly by paramedics.



Next steps

- The CARPE Study

Think about when you were taught to do a primary assessment in under 90 seconds. Everybody does it basically the same way. CARPE brings this same perspective to community paramedicine.



Questions or Comments

Twitter @MatthewLeyenaar #IRCP

email: leyenam@mcmaster.ca



Discussion

- Further investigation is needed with respect to the use of paramedic services following falls by home care patients—who may be classified at DIVERT levels 2 and 3.
- While being female and living with a caregiver were both predictive of transport via ambulance, the interaction term suggests that males living with a caregiver or females living without a caregiver influence these odds.
- There may be some important risk factors associated with first time use as indicated at these lower levels as well as odds of discharge following ambulance transport.
- Time of use is an important consideration with respect to patients use of paramedic services.



Next steps

- Next steps in this project will include data from paramedic services to investigate non-transported patients who have called for assistance following a fall.
- Development of an interRAI instrument for use within community paramedic programs may be valuable for capturing pertinent information regarding enrolled patients.
- This project will have important implications for the collaborative efforts between paramedic services and home care providers. Interventions may be developed to improve care for at risk individuals.

