

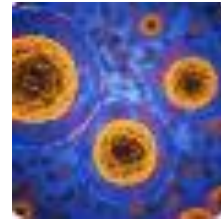
# Measures of performance of the Medical Priority Dispatch System (MPDS) priorities system in an urban Basic Life Support system

Jessica Harrison PhD © Community paramedicine, PSP



# Community paramedicine projects

# Community paramedicine in Quebec – Pilot projects



**Thematic**

**Mental Health**

**Fall**

**Chronic disease**

**Emergency  
readmission**



# Home environment risk factor screening tool by paramedics

FACTEURS DE RISQUE DE L'ENVIRONNEMENT  
DOMICILIAIRE PAR LES PARAMÉDICS


NOM DE LA COMPAGNIE AMBULANCIÈRE Region 12			IDENTIFICATION DE L'USAGER Ghvg Uuyy Nom Prénom N° d'assurance maladie 1957-10-04 Date de naissance	
Date 2023-10-04	Séqu. événement Tyuhh	Véhicule		
CONTACT EN CAS D'URGENCE Ghjhg 8199936776 Nom complet Téléphone			ANNEXE AU RIP N° P-1024438	
LIEU DE PRISE EN CHARGE Adresse Domicile privé Nature			DESTINATION Adresse <input type="checkbox"/> Refus de transport <input type="checkbox"/> Transport annulé <input type="checkbox"/> Réorientation	

1. Appréciation des capacités de l'utilisateur		
L'utilisateur semble-t-il avoir une diminution de sa capacité physique?	Oui	
L'utilisateur semble-t-il avoir une diminution de son état cognitif?	Oui	
L'utilisateur a-t-il une condition qui pourrait expliquer vos observations concernant la diminution de la capacité physique ou de l'état cognitif?	Oui	Explication
L'utilisateur vit seul?	Oui	

Croyez-vous que l'utilisateur vit de l'isolement social?	Oui	
Est-ce que l'utilisateur vit des inquiétudes face à l'abandon temporaire de son animal?	Oui	Chat
Commentaires Lorem ipsum		

3. Facteurs de risque - Lieux physiques L'évaluation des lieux physiques n'est pertinente que s'il s'agit du domicile du patient		
Revêtement du sol	Non	
Encombrement général des lieux et obstacles limitant les déplacements	Non	
Accès au logis	N.E.	
Salubrité des lieux	Oui	Aliments périmés Saleté sur les meubles Insectes indésirables Seringues
Odeurs de matières corporelles ou potentiellement toxiques	Oui	Précision...
Température extrême dans le logis pouvant compromettre la santé	Non	
Utilitaire hors standard potentiellement dangereux (ex.: bain trop haut ou trop bas)	Non	

4. Facteurs de risque - Pilulier, aides à la mobilité et appareils médicaux		
Condition de l'aide à la mobilité	Oui	Fauteuil roulant Marchette
Condition d'un appareil médical	Non	



Measures of performance of  
the Medical Priority Dispatch  
System (MPDS) priorities  
system in an urban Basic Life  
Support system



# Measures of performance of the Medical Priority Dispatch System (MPDS) priorities system in an urban Basic Life Support system



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# The prioritization system in Quebec: descriptive study which compares the assignment established by the Clawson code priority and the evaluation of paramedics in the Capitale-Nationale

## **Context**

There appears to be a notable contradiction between the priority level assigned by the Clawson code and that assigned by the paramedics.

The starting point of this study is to evaluate with a descriptive quantitative research for confirm or not this perception.

## **Main objectives**

- Compare the classification (Alpha, Bravo, Charlie, Delta, Echo) and priority to a call (0-8) with the assessment of paramedics
- Evaluate the performance of the prioritization system by considering different scenarios (sensitivity, specificity)
- Have a better understand situations where there is over and under triage



# The prioritization system in Quebec: descriptive study which compares the assignment established by the Clawson code priority and the evaluation of paramedics in the Capitale-Nationale

## **Study design and setting**

This is a retrospective observational study conducted in Quebec City. The data required for this study were retrieved from the Electronic Patient Care Report (EPCR). Quebec City EMS is covered by two different paramedic services: *Coopérative des techniciens ambulanciers du Québec* (CTAQ) and Dessercom, who both agreed to share their data.

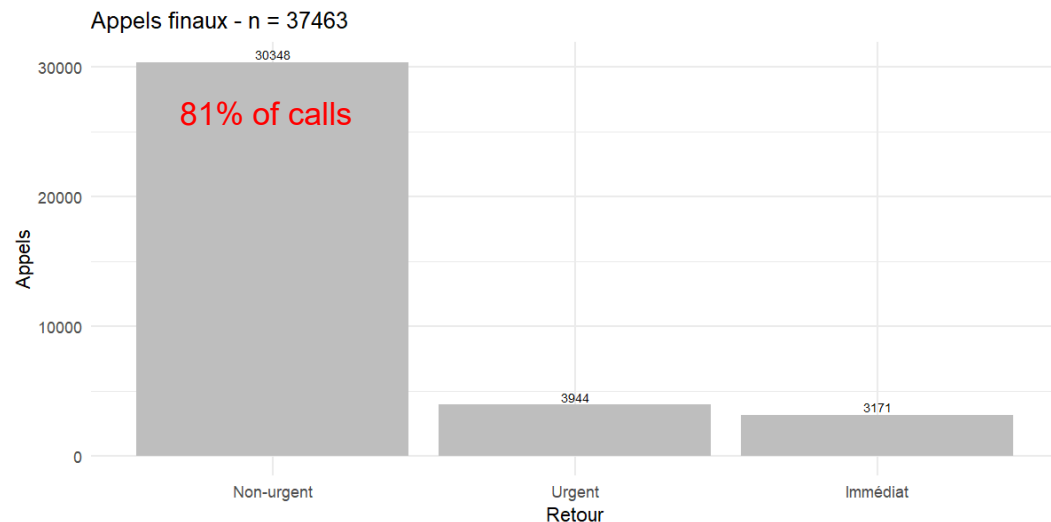
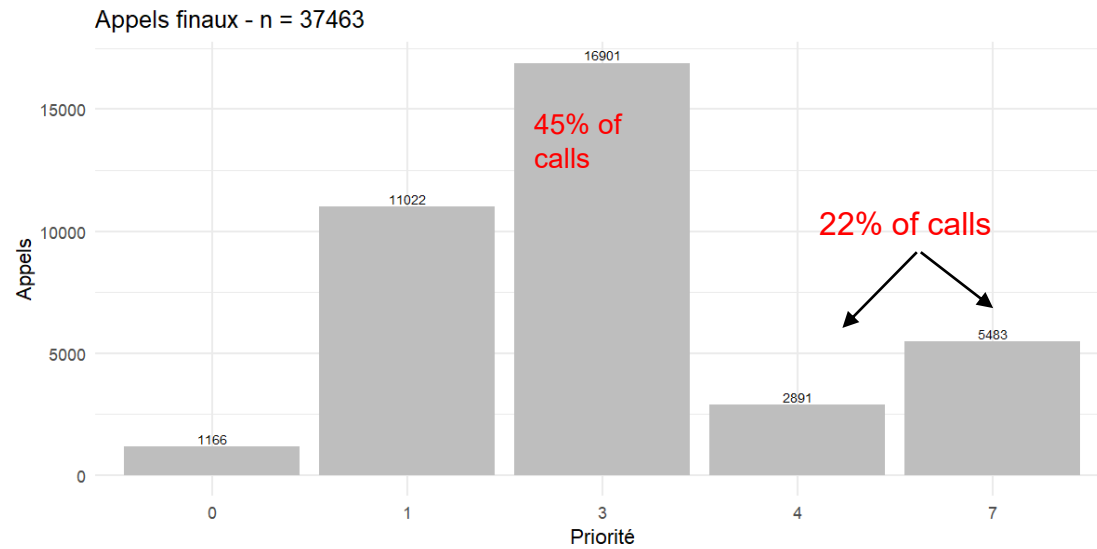
## **Area under study – Québec city**

581 020 residents

54 317 transports by years

Research

# Descriptive statistics



81% of calls have a non-urgent finality, while only 22% of calls are priority 4 and 7.

Type d'appels	Nombre d'appels	Nombre d'appels urgents		Nombre de FP		Nombre de TP	
Abdominal Pain	1711	879	51%	790	90%	89	10%
Allergic Reaction	316	272	86%	141	52%	131	48%
Animal Bites	15	13	87%	11	85%	2	15%
Assault	166	152	92%	135	89%	17	11%
Back Pain	757	283	37%	272	96%	11	4%
Breathing Difficulty	3399	3399	100%	2276	67%	1123	33%
Burn Subject	25	21	84%	11	52%	10	48%
Cardiac Arrest	39	37	95%	7	19%	30	81%
Chest Pain	4357	4357	100%	3126	72%	1231	28%
Choking	130	87	67%	61	70%	26	30%
Diabetic Problems	162	112	69%	73	65%	39	35%
Drowning	8	8	100%	4	50%	4	50%
Electrocution	18	18	100%	15	83%	3	17%
Environmental Exposure	18	3	17%	3	100%	0	0%
Eye Problem	26	17	65%	17	100%	0	0%
Falls	4610	3390	74%	3068	91%	322	9%
Hazardous Exposure	28	28	100%	15	54%	13	46%

Type d'appels	Nombre d'appels	Nombre d'appels urgents		Nombre de FP		Nombre de TP	
Headache	412	264	64%	236	89%	28	11%
Heart Problem	746	719	96%	521	72%	198	28%
Hemorrhage	1543	1329	86%	1152	87%	177	13%
Industrial Accidents	12	12	100%	9	75%	3	25%
Medical Nature Unknown	320	320	100%	234	73%	86	27%
Overdose	1009	1000	99%	666	67%	334	33%
Pandemic	13	13	100%	9	69%	4	31%
Pregnancy	160	157	98%	94	60%	63	40%
Psychiatric Problem	1650	1107	67%	1037	94%	70	6%
Seizures	570	570	100%	368	65%	202	35%
Sick Call	4986	1905	38%	1602	84%	303	16%
(S, G or P) Trauma	23	23	100%	8	35%	15	65%
Stroke	1175	1175	100%	790	67%	385	33%
Subject Unconscious	2583	2583	100%	1911	74%	672	26%
Traffic Collision	1078	1078	100%	886	82%	192	18%
Transfer	2093	1286	61%	882	69%	404	31%
Traumatic Injuries (specific)	1473	678	46%	599	88%	79	12%

Some protocols seem to generate more false positives than others.

## Conclusions and recommendations

- The positive predictive value is generally low (23% as much for the Clawson code and the priorities). Overtriage is high (77%). The false positive rate is high at the P3 level (85%), which represents 45% of the call volume.
- This study showed that most ambulance demands that are triaged as a time sensitive condition are considered non-urgent in nature by the treating paramedics in Quebec city.
- This reflects a tendency of the system towards a high overtriage rate. Some analyses suggest that a portion of these calls could be prioritized differently to improve performance. Another solution would be to improve the prioritization by transferring these demands to a clinical resource able to better assess the situation and to better prioritize the situation as urgent or not.
- We think it would be useful to focus on the types of calls with a high proportion of false positives. An evaluation of the process of emergency medical dispatch with these calls could be a solution. Also, these calls with a high proportion of false positives could even be sent to a secondary triage process with a clinical resource who will subsequently determine the acuity level and the most appropriate support resource to meet patients needs. By better prioritizing, a proportion of these calls could become eligible to a different response than sending an ambulance such as teleconsultation or **community paramedics** response.

**Question ?**