

Paramedic Chiefs of Canada

Chefs Paramédics du Canada

Lights and Sirens; Is It Worth the Risk?

We're taking a virtual role call today for those on the WebEx. If you're viewing this in a group, please use the "Chat" window on the right to enter your: Name, Agency Name, and # of people joining from your location. Please send chat messages to "All Panelists"

In association with



This session will be recorded, and a link sent out to attendees.



Paramedic Chiefs of Canada

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Future Topics?

Membership Services Committee – msc@paramedicchiefs.ca

Kyle Sereda – <u>ksereda@moosejawems.ca</u>

Todd Stout – <u>tstout@firstwatch.net</u>

In association with



Health Intelligence Resource www.firstwatch.net/hi

Facilitators:









Kyle Sereda Chief Moose Jaw & District EMS ksereda@moosejawems.ca

Todd Stout

President, FirstWatch tstout@firstwatch.net Cell: 858-395-1728

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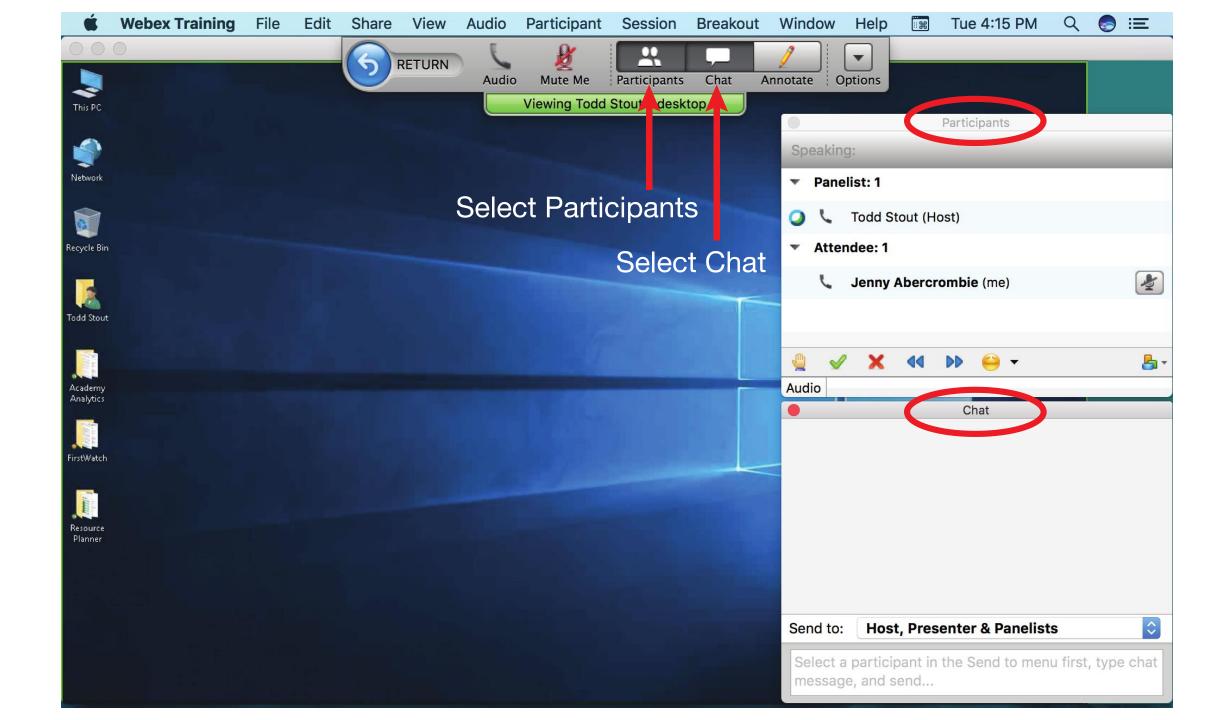


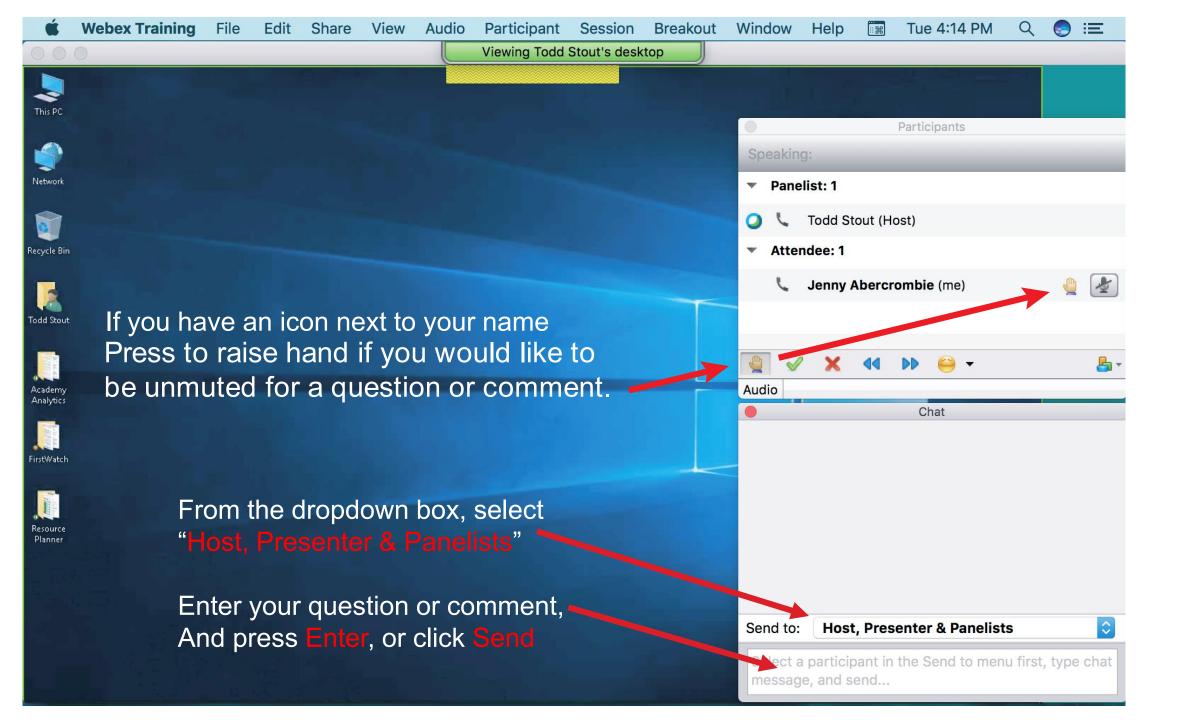
Please mute your phone

 All attendees are automatically muted by WebEx, but we recommend muting your phone on your end, as sometimes we unmute everyone on the WebEx side to anyone who wants to speak, and if you have background noise it will limit everyone's ability to share.

Thank You!





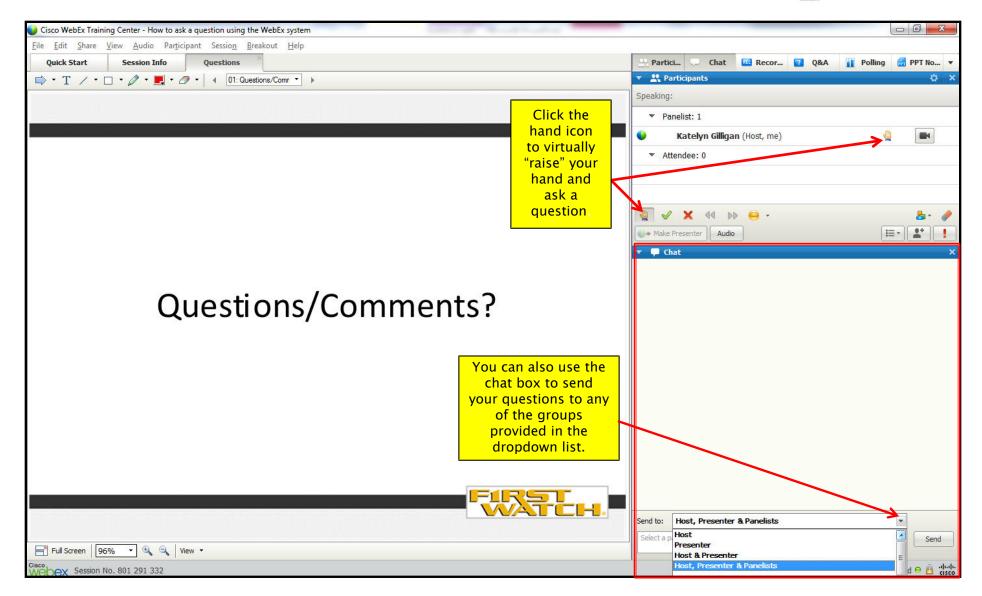




Paramedic Chiefs of Canada

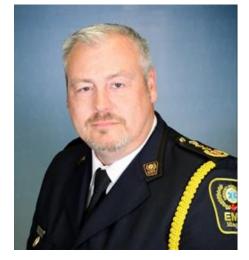
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Asking Questions



Speakers:





Richard Ferron

Deputy Chief, System Performance with Niagara Emergency Medical Services

richard.ferron@niagararegion.ca



Chief Kevin Smith

Chief of Niagara Emergency Medical Services

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In association with



Speakers:





Nicola Little

Quality and Patient Safety Officer, Winnipeg Fire Paramedic Service

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Dr. Bryan R. Wilson

Emergency Medicine and EMS Physician at St. Luke's University Health Network

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In association with





Paramedics Chiefs of Canada Webinar Lights and Sirens; Is It Worth the Risk?



Follow the evidence to where it leads, even if the conclusion is uncomfortable.





Paramedics Chiefs of Canada Webinar Lights and Sirens; Is It Worth the Risk?

> Joint Statement on Lights & Siren Vehicle Operations on Emergency Medical Services (EMS) Responses

> > February 14, 2022

Douglas F. Kupas, Matt Zavadsky, Brooke Burton, Shawn Baird, Jeff J. Clawson, Chip Decker, Peter Dworsky, Bruce Evans, Dave Finger, Jeffrey M. Goodloe, Brian LaCroix, Gary G. Ludwig, Michael McEvoy, David K. Tan, Kyle L. Thornton, Kevin Smith, Bryan R. Wilson

The National Association of EMS Physicians and the then National Association of State EMS Directors created a position statement on emergency medical vehicle use of lights and siren in 1994 (1). This document updates and replaces this previous statement and is now a joint position statement with the Academy of International Mobile Healthcare Integration, American Ambulance Association, American College of Emergency Physicians, Center for Patient Safety, International Academies of Emergency Dispatch, International Association of EMS Chiefs, International Association of Fire Chiefs, National Association of EMS Physicians, National Association of State EMS Officials, National EMS Management Association, National EMS Quality Alliance, National Volunteer Fire Council and Paramedic Chiefs of Canada.



To Use RLS or Not to Use RLS:

It's Not Actually A Question

Bryan R. Wilson, MD, FAEMS, FAAEM EMS Fellowship Director St. Luke's University Health Network EMS Medical Director City of Bethlehem Bureau of EMS

Disclosures







The thoughts expressed here are the speakers and speakers alone and do not represent the thoughts of any organization with which we are affiliated, except as noted.

Acknowledgements

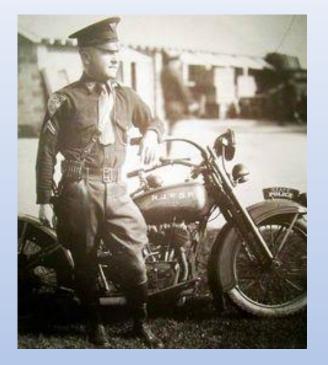
Dr. Doug Kupus, FAEMS



Matt Zavadsky, MS-HAS, NREMT

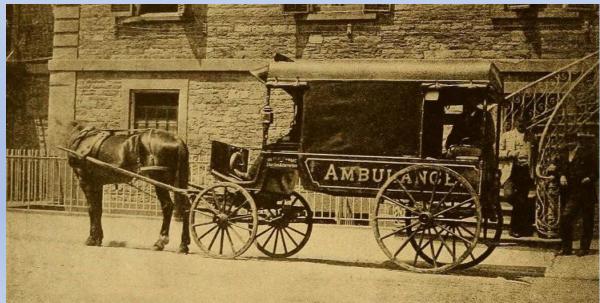


Where did Red Lights and Sirens Come From?









Common Reasons for Lights and Sirens

- 1. "Saves time"
- 2. Contract requirements
- 3. Medical Emergency
- 4. Public expectations
- 5. EMS provider retention
- 6. Insurance requirements

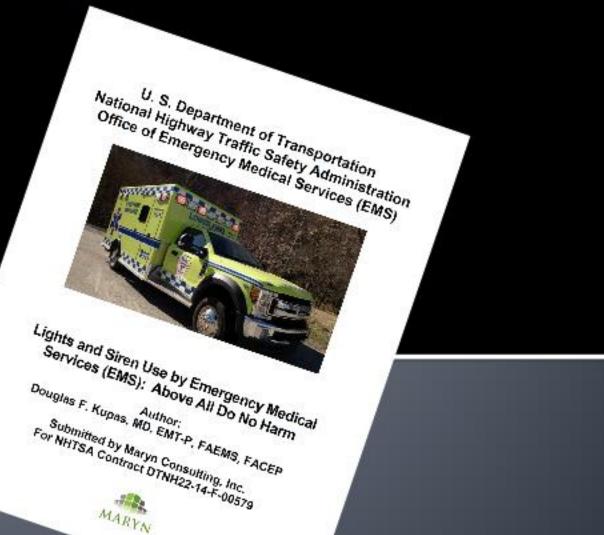


Douglas F. Kupas, MD, EMT-P, FAEMS @paemsmd

Lights & Siren Use by EMS:

Above All, Do No Harm

Available at: ems.gov



"Saves Time"



Response

TABLE M Mean <i>response</i> time interval differences related to L&S use (from seven studies as shown)					
Author	Year of Study	Community/Geographica	Time Saved (in minutes)	Notes	
Dhindsa	1994	Washington, DC	3.6	Poster Abstract	
Zachariah	1994	Suburban Texas	1.7	Poster Abstract	
Но	1998	Minneapolis, MN	3.0		
Brown	2000	Syracuse, NY	1.8		
Но	2001	Becker County, MN (rural)	3.6		
Williams	2005	Anne Arundel County, MD	2.2	Fire Department Report	
Yeh	2011	San Francisco, CA	1.9	Response to Stroke Symptoms	

Transport

TABLE N Mean <i>transport</i> time interval differences related to L&S use (from eight studies as shown)					
Author	Year of Study	Community/Geogra phical Location	Time Saved (in minutes)	Notes	
Dhindsa	1994	Washington, DC	3.0	Poster Abstract	
Hunt	1995	Greenville, NC	0.7		
O'Brien	1999	Jefferson County, KY	3.8		
Brown	2000	Syracuse, NY	1.8		
Williams	2005	Anne Arundel County, MD	2.4	Up to 10.2 minutes for areas farther from hospital	
Marques- Baptista	2010	New Brunswick, NJ	2.6	Reviewed critical interventions at hospital	
Fleischman	2013	Multnomah County, OR	3.1	GPS/Google maps	
Dami	2014	Vaud, Switzerland	1.8	No difference at night, 16.6% L&S transport rate	

Average Time Saved = 1.7 – 3.6 minutesAverage Time

Average Time Saved = 0.7 - 3.8 minutes

Are L&S Related to Ambulance Crashes?



Phase/Mode	N	Crashes	Rate/100,000	OR (95% CI)	AOR (95% CI)
Response phase					
No L&S	4,468,292	207	4.6	1 [Reference]	1 [Reference]
Any L&S	14,571,803	793	5.4	1.18 (1.01-1.37)	1.50 (1.19-1.90)
Full L&S	14,063,826	779	5.5	1.20 (1.03-1.39)	1.53 (1.21-1.94)
Transport phase					
No L&S	10,700,943	744	7.0	1 [Reference]	1 [Reference]
Any L&S	3,191,402	545	17.1	2.46 (2.20-2.74)	2.90 (2.18-3.87)
Full L&S	2,990,237	494	16.5	2.38 (2.12-2.66)	2.84 (2.12-3.80)

OR, Odds ratio.

*Full L&S means L&S use throughout the phase; any L&S includes responses and transports with L&S use in any part of the phase (ie, full L&S or upgraded to L&S or downgraded from L&S). AOR is adjusted for agency response volume, agency level of service, agency type of service, agency L&S use, agency staffing, run location, and time of day.

Watanabe BL, et al. Is use of warning lights and sirens associated with increased risk of ambulance crashes? A contemporary analysis using national EMS information system (NEMSIS) data. Ann Emerg Med. 2018

Contract Requirements

Municipal government leaders should be aware of the increased risk of crashes associated with L&S
response to the public, emergency responders, and patients. Service agreements with emergency
medical response agencies can mitigate this risk by using tiered response time expectations based
upon EMD categorization of calls. Quality care metrics, rather than time metrics, should drive these
contract agreements.





Response Time Requirements

Cardiac Resuscitation in the Community

Importance of Rapid Provision and Implications for Program Planning

Mickey S. Eisenberg, MD, PhD; Lawrence Bergner, MD, MPH; Alfred Hallstrom, PhD

JAMA, May 4, 1979-Vol 241, No. 18

IMPROVED OUTCOMES

✓BLS < 4 min

✓ALS < 8 min



Eisenberg MS, Bergner L, Hallstrom A. Cardiac resuscitation in the community. Importance of rapid provision and implications for program planning. JAMA. 1979; 241:1905–7.

The Evidence...

- Paramedic Response Time: Does it affect patient survival
 - 9,559 'unselected' patients
 - Urban setting, **Denver**

CONCLUSIONS:

A paramedic response time within 8 minutes was not associated with improved survival to hospital discharge after controlling for several important confounders, including level of illness severity. However, a <u>survival benefit was identified when the response time was within 4 minutes</u> for patients with intermediate or high risk of mortality. Adherence to the 8-minute response time guideline in most patients who access out-of-hospital emergency services is not supported by these results.

The Evidence...

- Eight minutes or less: does the ambulance response time guideline impact trauma patient outcome
 - Evaluate effect of exceeding the 8 min RT guideline on patient survival for victims of traumatic injury treated by an urban paramedic ambulance EMS system and transported to a single Level I trauma center – Denver
 - o 3,490 patients evaluated
 - Patients were grouped according to ambulance RT:

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< or = 8 min (n = 2450) or > 8 min (n = 1040)
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Results:

After controlling for other significant predictors, there was no difference in survival after traumatic injury when the 8 min ambulance RT criteria was exceeded (mortality odds ratio 0.81, 95% CI 0.43-1.52). There was also no significant difference in survival when patients were stratified by injury severity score group.

Conclusion:

Exceeding the ambulance industry response time criterion of 8 min does not affect patient survival after traumatic injury.

Does Time Saved Equals Lives Saved?

Using Red Lights and Sirens for Emergency Ambulance Response: How Often Are Potentially Life-Saving Interventions Performed?

Jeffrey L. Jarvis, MD , Vaughn Hamilton, MA, EMT-P, Mike Taigman, MA, Lawrence H. Brown, PhD D

PREHOSPITAL EMERGENCY CARE 2021;25:549–555

- 5,977,612 911 responses in ESO 2018 Data set
 - 5,126,266 (85.8%) WITH L&S
 - 987,432 records without any patient contact (~19%!!)
- Potential Life-saving Intervention occurred in only 6.9% (~265,000)

"Potential Life Saving Intervention"

Treatments	Treatments	
Adenosine	Hydroxycobalamin	
AED	Intubation	
Amiodarone	Lorazepam	
Atropine	Magill Forcep	
Back Blows	Midazolam	
Blood Products	Naloxone	
BLS Airway	NIPPV	
Calcium	Norepinephrine	
Cardiac Alert	OB Delivery	
Cardioversion	Pacing	
Chest Seal	Pleural Decompression	
CPR	Sepsis Notification	
Defibrillation	SGA	
Diazepam	STEMI Alert	
Dobutamine	Stroke Alert	
Dopamine	Suction	
Epinephrine	Surgical Airway	
Glucagon	Tissue Plasminogen Activator	
Glucose	Tourniquet	
Heimlich Maneuver	Tracheostomy Tube Replacement	
Hemostatic Agent	Trauma Alert	

265,000 Interventions

6,000,000 911 Responses

6.9%!!

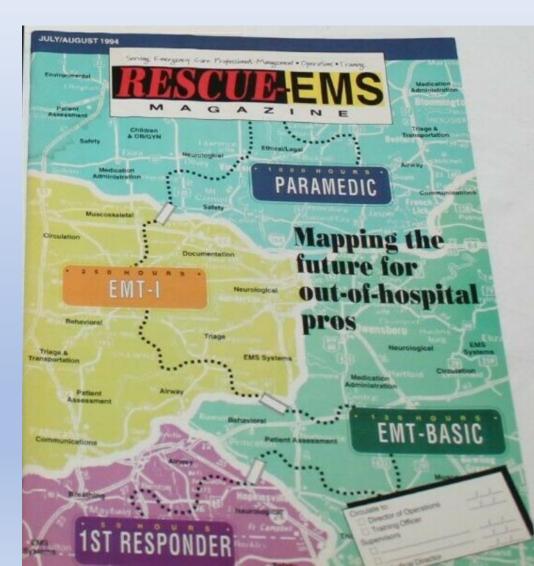
Never neglect an opportunity for improvement.

It's what people expect!

Two main reasons people hesitate calling 911:

- "Sirens and Noise"
- "Getting lots of attention"

"Competence is more often shown by quiet deliberateness than by noisy bravado." -Marie Wilson





Lights and Sirens are associated with increased crash rates that put YOU, your team, your patient, your community and your equipment at risk!

Response times matter ONLY in the most serious of patient presentations, consider using tiered response time metrics and other quality metrics (i.e. NEMSQA)

Canadian Perspective



USING OUTCOME DATA TO INFORM RESPONSE PLAN DESIGN

Niagara EMS (Ontario, Canada)

Rick Ferron, ACP, MHM

Deputy Chief, System Performance, Niagara EMS

PhD Student, McMaster University

Department of Health Research Methods, Evidence and Impact

Niagara Region



- 17 ambulance stations
- 43 ambulances (daily peak staffing of 33, majority ALS)
 - Emergency Communications Nurse (ECN) 16 hours/day
 - 2 Community Assessment and Referral (CARE)
 - 1 Falls Intervention Team (FIT)
 - 1 Mental Health & Addictions Intervention Team (MHART)
 - 1 Community Response Unit
 - 1 Community Paramedic Unit
 - Medical Staffing, Consumption & Treatment Site
- Dispatch Center-Accredited IAED Centre of Excellence

"System Transformation" 2018-19

- Revisit response policies
- Emergency Communications Nurse System (ECNS)
- Mobile Integrated Health (MIH) Teams
- Alternative Transport and Destination Options
- Clinical Response Plan**

******shifts response planning from a solely time-based model, to an evidencebased model using clinical evidence and linked outcome data to inform decision making

Response Plan Design Evolution

- 2005--CTAS (acuity) on patient contact
 - 2008--Prior to Paramedic intervention
- 2008--Paramedic Interventions
 - Used to determine both acuity and appropriate resource assignment
- 2019--MIH/ECN teams Effectiveness Measures
 - Used to determine appropriate resource assignment
- New (2020)—Population Based patient hospital outcome data, by determinant

The Stakes are High

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PMN Politics / PMN News / PMN Life / PMN Health / PMN Canada

Ontario paramedics warn of ambulance delays and increasing call volumes



Mar 04, 2020 • Last Updated 9 months ago • 2 minute read

TORONTO — Increasing call volumes and off-loading delays at hospitals are creating ambulance shortages, the union representing paramedics with 22 municipal services in Ontario said Wednesday, calling for more funding to address the situation.

The Canadian Union of Public Employees, which represents approximately 5,500 paramedics and dispatchers, said in a new report that both problems are creating situations where ambulances aren't available to promptly respond to calls.



HAMILTON WOMAN DIES WHILE WAITING FOR AN AMBULANCE

Wednesday, September 13th 2017 - 5:49 am



Photo: iStock/matt gush

The Ontario coroner's office is investigating after a senior died alone in her apartment after waiting nearly half an hour for paramedics to arrive

The investigation comes after the CBC reported 71 year old Catherine Terry died of a heart attack July 10th during a code zero alert in the city.

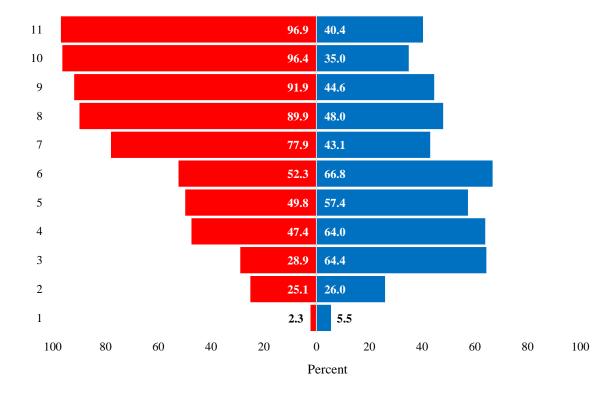
Code Zero means there is one or less ambulances available to take a call.

The tragedy highlighted the ongoing ambulance shortage in Hamilton.

Premier Wynne has written to the Terry family assuring them the province is aware of the shortages and is

Research Conducted

- Law M, Coolen J, Haj-Ahmed Z, Ferron R. The Impact of Emergency Medical Services Response Time on Patient Outcomes: A Scoping Review of the Literature. National Association of EMS Physicians Conference, 2020
- Law M, Coolen J, MacElhone S, Ferron R. Assessing Public Opinion on EMS and Potential Areas for Innovation. Submitted.



Response Priorities and Time Targets

Priority	Lights & Sirens	Response Time Target (T2-T4) (*T0-T4)
1	Yes	8:00
2	Optional*	15:00
3	No	30:00*
4	No	1:00:00*
5	No	2:00:00*

Response Priority Evaluation

Paramedic Found Acuity (preintervention) vs Dispatch Priority

	Pri	Sum:	%+2	%+1	% Equal	% -1	% -2	NPC
06C01	3	510	1.37%	11.76%	43.14%	7.25%	3.53%	32.94%
06C01A	3	117	0.00%	5.13%	41.88%	9.40%	6.84%	36.75%

Patient Outcome Data

- 1 and 7 day mortality (in field and in hospital)
- ED diagnostics
- ED procedures performed
- 3 day bounceback (return to ED)
- # admitted, avg LOS
- # admitted to ICU, avg LOS.

Revised Response Plan (based on outcome data)

An iterative process

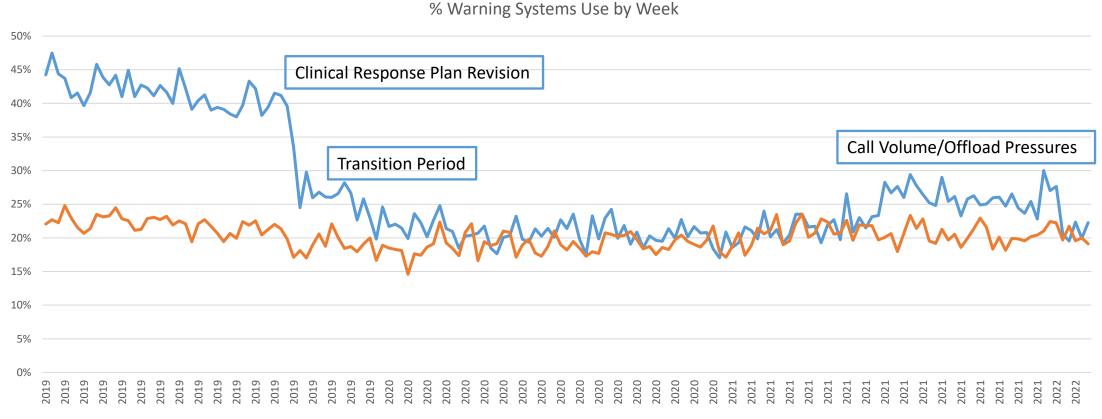
Problem Code	Old Priority	New Priorit	Problem Description	ΨÎ	FD T1 Plan Name
06C01	3	2	06C01 Abnormal Breathing		2TU
06C01A	3	2	06C01A Abnormal Breathing		2TU

				ha second se
06D01	2	1	06D01 Not Alert	1CU/CTU
06D01A	2	2	06D01A Not Alert	2CTU
06D01E	2	1	06D01E Not Alert	1CU/CTU
06D010	2	1	06D010 Not Alert	1CU/CTU
6)				

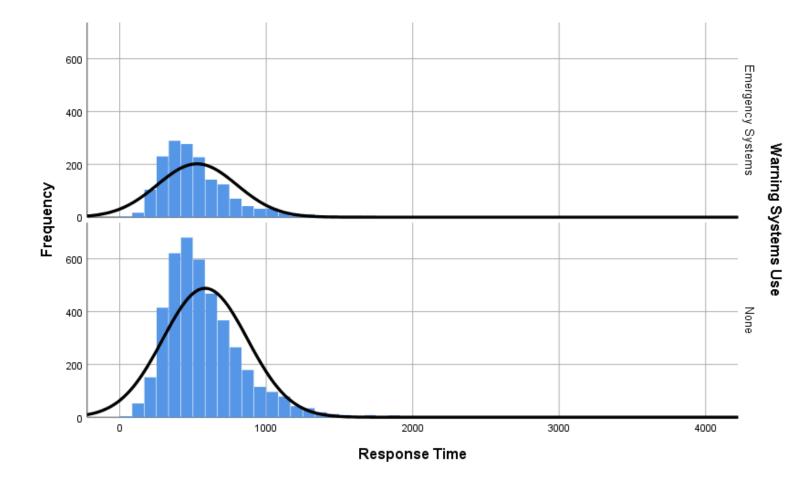
Pre vs Post System Transformation

	Year Pre	Year Post
Lights and Sirens Responses	24983	5708
Lights and Sirens %	42.4%	10.3%
% Capture	5.8%	24.7%
Risk Difference		0.8%

% L&S Use by Week, Jan 2019-Present



Chest Pain Responses (10D)



- Almost 6000 Delta level calls on Chest Pain protocol, where Paramedics had *discretion* to use L&S
- Mean RT difference 55 seconds (95% CI 39.45-70.92), P <.001
- No statistical significance in mortality: χ^2 (1, N=5910) = .428, p = .513

Takeaways

- Clinical procedure with associated risk/benefit evaluation
- NNT?



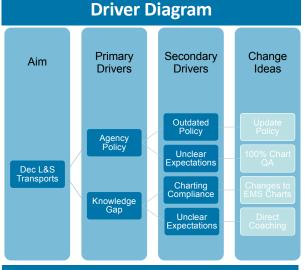
Use of Emergency Warning Devices During EMS Transport to Hospital

Bryan Wilson, MD, NRP, FAAEM Stephanie Ashford Ed.S., NRP St. Charles County Ambulance District

St. Luke's University Health Network

Aim Statement

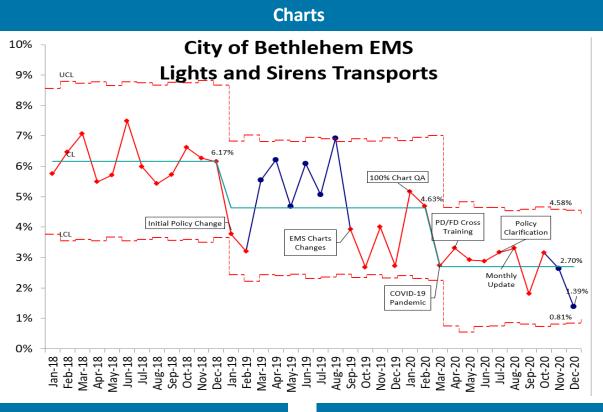
Reduce the frequency of lights and sirens transports to less than 2% of transports by the end of 2020.



Tests of Change

Plan

- Update policy to enable crew discretion
- · Changed EMS Charts rules so charts can only be closed with "Light and Sirens" or "No Lights or Sirens" options
- · Implemented monthly update emails on quality metrics
- Implemented 100% chart QA on L&S transports
- · Cross-trained PD and FD Drivers



Measures

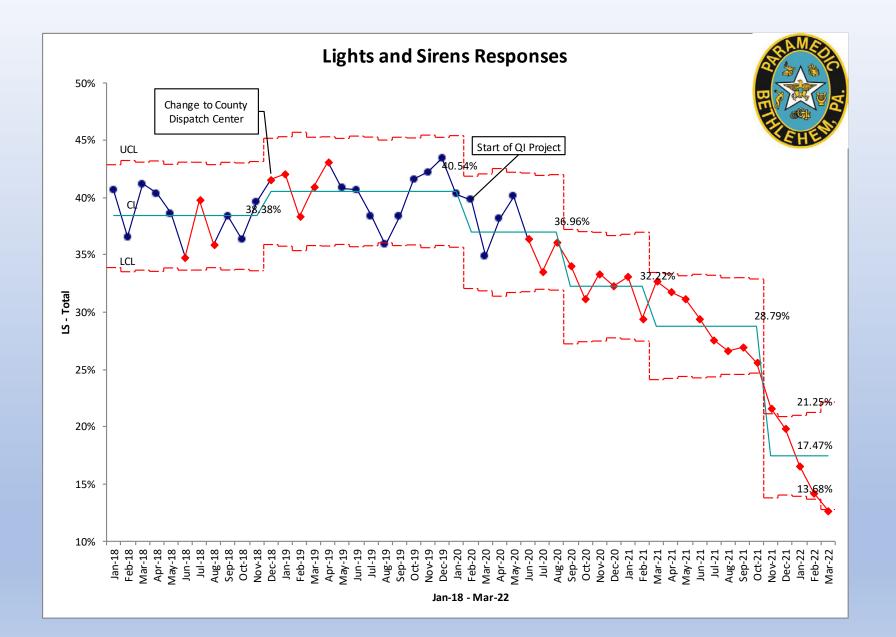
	% L	.&S Transpo	orts
	2018	2019	2020
	6.18%	4.67%	2.95%
	Bala	ancing Meas	sures
nt	ra transport arr	osts > 0 relate	d to lack of L&

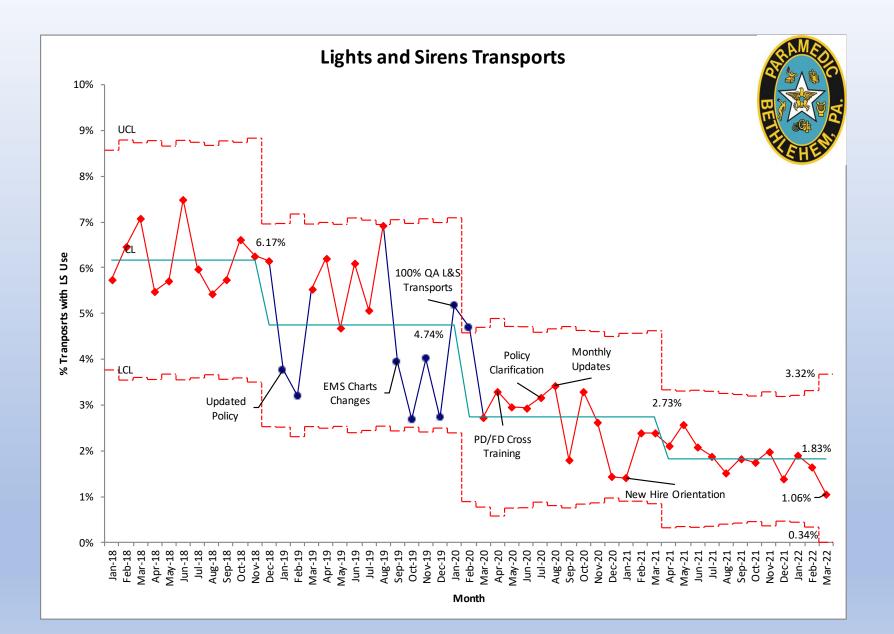
3 intra-transport arrests -> 0 related to lack of L&S use

% L&S Responses								
2018	2019	2020						
unavailable	57.07%	37.68%						

Key Learnings

- Large amount if misinformation surrounding Lights and Sirens use
- Crews very willing to limit use once risks became clear AND that no harm was seen
- Enable crews to make the choice based on available information and teaching, policy change helped but did not fix the problem
- By focusing on Lights and Sirens in Transport, our use during response also decreased





Quality Improvement Methodology for Reducing Lights and Sirens use in EMS

Nicola Little , ACP Quality and Patient Safety Officer Winnipeg Fire Paramedic Service.

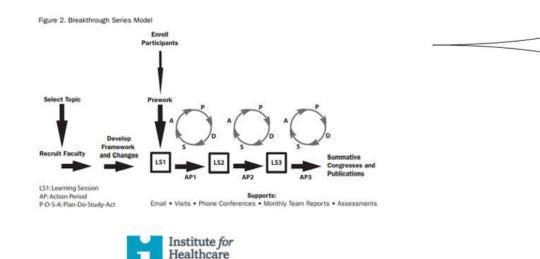


National EMS Quality Improvement Partnership to Reduce Lights-and-Siren use in EMS

The Breakthrough Series

Improvement

IHI's Collaborative Model for Achieving Breakthrough Improvement

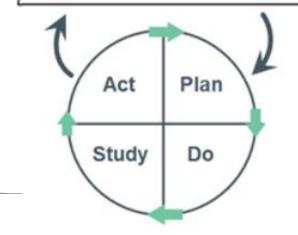


What are we trying to accomplish?

Model for Improvement

How will we know that a change is an improvement?

What change can we make that will result in improvement?



Reducing Lights and Sirens in EMS With Quality Improvement Methodology

Every system is perfectly designed to get the results is gets.

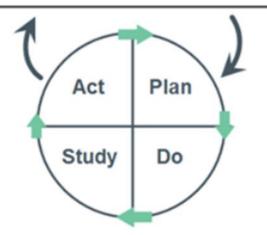
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Model for Improvement

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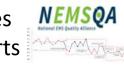
AIM

Reduce the use of L&S Responses to < 50 % by March 24th , 2023 Reduce the use of L&S Transports to < 5 % by March 24th, 2023

ights and Siren Use by Emergency Medie vices (EMS): Above All Do No Har Author: Douglas F. Kupas, MD, EMT-P, FAEMS, FACEP

Measures

N: Number of responses that did not use lights and Sirens D: total number of responses N: Number of transports that did not use lights and sirens D: total number of transports



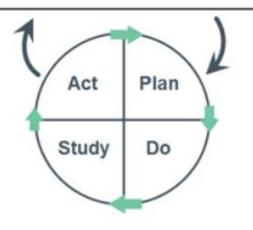
How will we know that a change is an improvement?

Model for Improvement

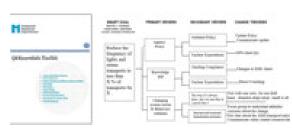
What are we trying to

accomplish?

What change can we make that will result in improvement?



Change ideas Understand **YOUR** system -look for your **urban legends**



Test change ideas, learn, Adapt Adopt Abandon

-small to all one medic, one crew, one call, one hall



urban legend

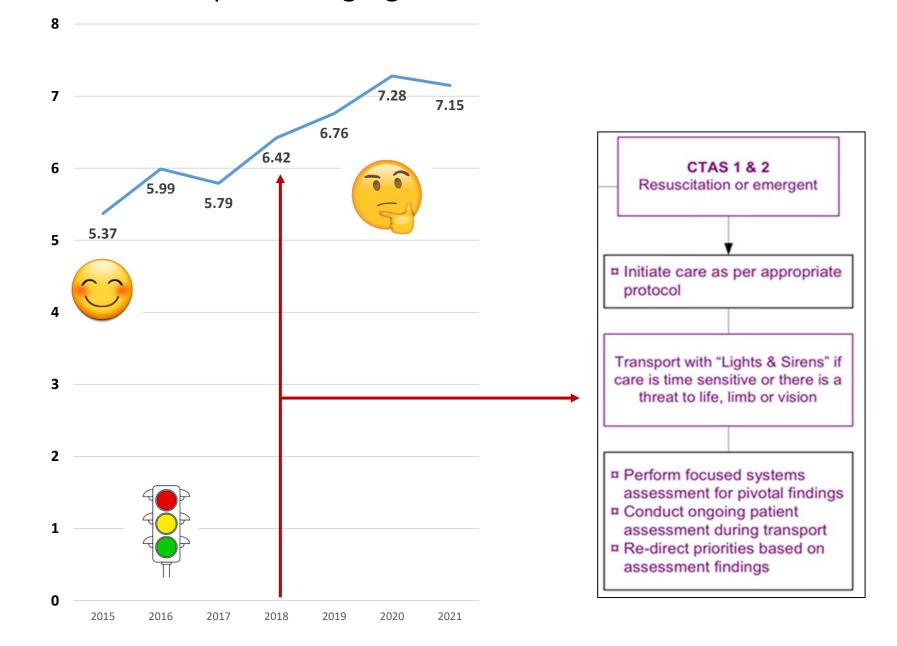
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NOUN

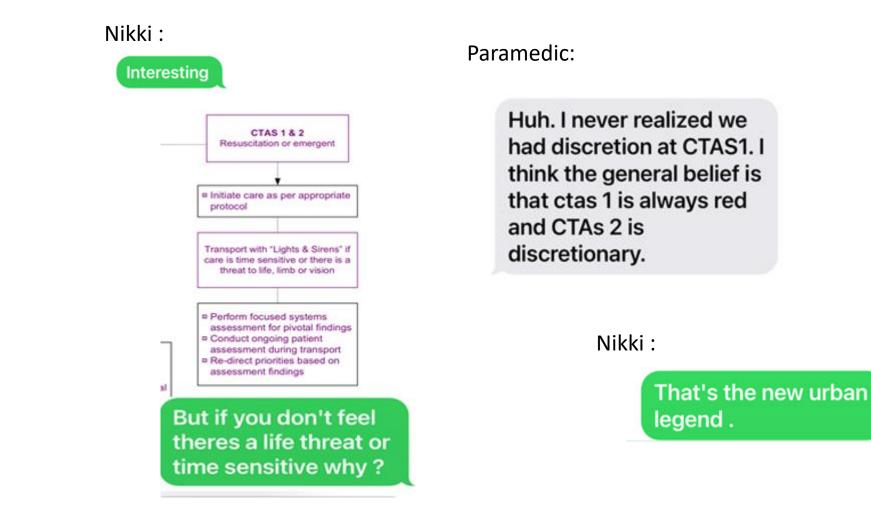
urban legends (plural noun)

a humorous or horrific story or piece of information circulated as though true, especially one purporting to involve someone vaguely related or known to the teller.

Percent of Transports using Lights and Sirens



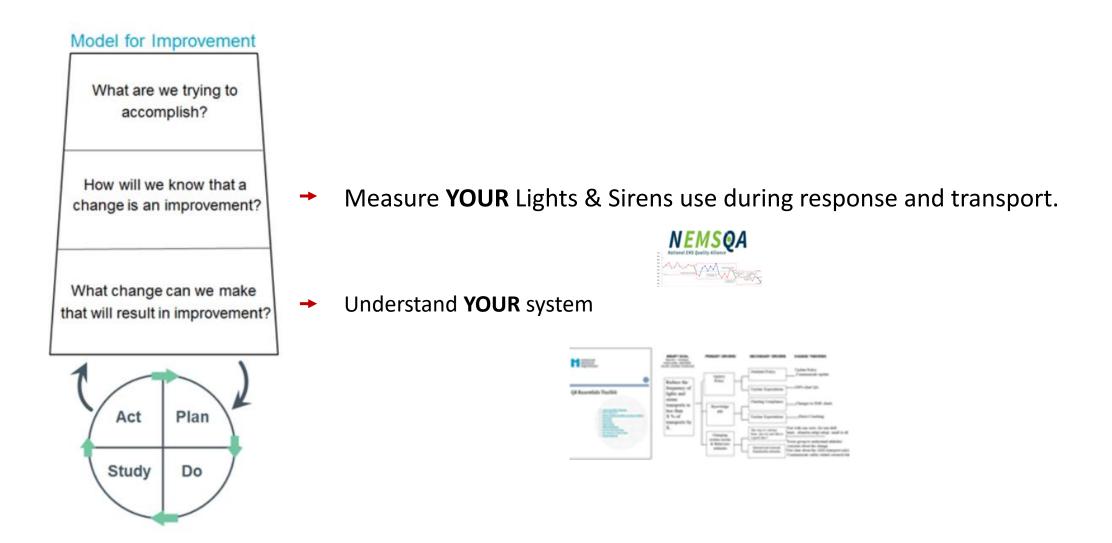
Question – Why do you think our lights and sirens use during transport has increased ?



Paramedic:

… If I had to guess I would suspect it is the gcs<=9 modifier that might account for that. It bumps it to a CTAS1 and I've definitely transported patients red that we would have previously transported as amber based on that modifier alone.

What can you do today towards reducing lights and Sirens responses in EMS?





National EMS Quality Improvement Partnership to Reduce Lights-and-Siren use in EMS

The Breakthrough Series IHI's Collaborative Model for Achieving Breakthrough Improvement

Figure 2. Breakthrough Series Model Enroll Participants Select Topic Prework Develop Framework **Recruit Faculty** and Changes Congresses and LS1:Learning Session AP: Action Period Supports: Email • Visits • Phone Conferences • Monthly Team Reports • Assessments P-D-S-A: Plan-Do-Study-Act Institute for Healthcare Improvement

Q simpleqi | studio

0 0 richard.ferron@niagararegion.ca

Rick Ferron

Lights and Siren Collaborative > Project Home >

Al Ducie et lle me		7
 Project Home Teams 	Project Aim	♀ Most Active Standard Changes
People	Macro Aim: Reduce the emergency vehicle involved crash rate related to 911 EMS response and transport.	Join in the conversation. Learn from and/or help others implementing these changes.
Measures	Project Aim: Reduce the use of lights-and-siren for 911 EMS responses and transports so that 70% or more of responses occur without the use of lights-and-siren and 95% or more of transports occur without the use of lights-	6 Provide education to frontline providers about the reality of of the timeleness of potentially life-saving interv
Drivers	and-siren by December 31, 2022. show more ♥	 4 Massess the beliefs, biases, and expectations of community groups and political leaders about the use of light 3 Massess the beliefs providers on the purpose, aim, and data behind this lights and siren collaborative.
♀ Changes		2 📽 Develop lights and sirens response determinantes for every call time based on best practices.
	Upcoming Project Events view calendar	€ refreshed: a minute ago
🗂 Calendar	April 1, 2022	Recent Project Discussions
Resources	12:00pm - 1:00pm 📮 SimpleQI Q&A Support	M Updated measure definition for crashes.
	June 30, 2022	Mike Taigman • 8 days ago
	11:00am - 3:00pm Learning Session 2: National EMS Quality Improvement Partnership- Reduce Lights-and-Siren Use in EMS	New Resources added

Newest Project Resources

Jarvis et al.-2020-Using Red Lights and.pdf 14 days ago

Directive 22 - L&S Transport Reduction.pdf 14 days ago

Niagara EMS Determinant Codes.xlsx 15 days ago

Cklahoma City Determinant Codes.xlsx 15 days ago

NDEMSA Lights and Sirens Survey.pdf 19 days ago

show more

view resources

M OTO = Omega Transport Only. These are calls that have been triaged by a nurse line and deemed not to... Matt Lewis • 6 days ago

M Simple QI Questions and Answers Mike Taigman • 7 days ago

Jeff Jarvis • 14 days ago

G What does OTO stand for? Geoffrey Martin • 13 days ago

https://coffeeordie.com/emergency-responder-safety/ Timely article Lee Richardson • 6 days ago

G Safety 01?

M

Geoffrey Martin • 16 days ago

Hi Geoff -- No you're not missing anything. The title is the exact wording of the NEMSQA measure. Th...

Lights and Siren Collaborative > Niagara EMS > 🕋 Team Home Aggregate Measure Data People Measures t⊒ PDSAs Drivers Discussions

🛗 Calendar

- Resources
- Reports

Aggregate	ivicas	sure	Data																	
Safety - 01 Li	ghts a	and Sir	ens Respons	se															Υ	Actions 🗸
Aggregate -	sum c	of inclu	uded teams																~	
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	rting eriod		Week 10/24/202	Week 1 10/31/2021	Week 1 11/7/2021	Week 11/14/2021	Week 11/21/2021	Week 11/28/2021	Week 12/5/2021	Week 12/12/2021	Week 12/19/2021	Week 12/26/2021	Week 1/2/2022	Week 1/9/2022	Week 1/16/2022	Week 1/23/2022	Week 1/30/2022	Week 2/6/2022	Week 2/13/2022	Week 2/20/2022
	%	93	36.37	37	37.56	37.11	37.36	37.92	37.55	37.12	36.92	36.12	36.34	37.36	37.81	38.07	40.6	40.21	41.25	40.44
# Without I and 1	Lights Sirens	53	7731	7880	7992	7849	7671	8231	8251	8173	7848	7963	8166	8110	8644	8511	7589	7596	7244	6510
# of Resp	onses	:65	21256	21296	21278	21153	20532	21709	21976	22015	21258	22047	22470	21706	22864	22358	18691	18889	17562	16099
	eams orting	2	32	32	32	32	32	32	32	32	32	32	32	32	33	33	32	32	30	27
4																				Þ

🔇 simpleqi | studio

C C Rick Ferron richard.ferron@niagararegion.ca

Lights and Siren Collaborative > Niagara EMS



🛔 People

Measures

Drivers

Discussions

- 🗂 Calendar
- Resources
- Reports

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Reporting Period		Week 10/31/2021	Week 11/7/2021	Week 11/14/2021	Week 11/21/2021	Week 11/28/2021	Week 12/5/2021	Week 12/12/2021	Week 12/19/2021	Week 12/26/2021	Week 1/2/2022	Week 1/9/2022	Week 1/16/2022	Week 1/23/2022	Week 1/30/2022	Week 2/6/2022	Week 2/13/2022	Week 2/20/2022	Week 2/27/2022
%).25	88.99	89.68	89.2	88.84	89.7	89.56	89.36	88.7	89.05	89.44	89.86	90.22	89.88	89.53	89.42	89.98	90.29	89.78
Without Lights and Sirens	541	12427	12838	12628	12549	13069	13294	13137	12508	13281	13762	13319	14297	14269	11671	11911	10983	9399	5525
≠ of Transports	051	13965	14315	14157	14126	14570	14844	14701	14101	14914	15386	14822	15846	15875	13036	13320	12206	10410	6154
Teams	32	32	32	32	32	32	32	32	32	32	33	33	34	34	33	33	30	26	22

Every system is perfectly designed

to get

the results

is gets.

Deming Batalden Berwick

QUESTIONS & DISCUSSION

Polítics Policy Process Public perception Contracts Agreements System Norms Behaviors & Attitudes urban Legends Documentation



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Paramedic Chiefs of Canada

Chefs Paramédics du Canada

Thank You for Joining Us!

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