1. CALL TO ORDER

2. DISCLOSURES OF PECUNIARY INTEREST

3. PRESENTATIONS
   3.1 Emergency Medical Services System Transformation
      Kevin Smith, Chief, Niagara Emergency Medical Services

4. DELEGATIONS
   None.

5. ITEMS FOR CONSIDERATION
   None.

6. CONSENT ITEMS FOR INFORMATION
   6.1 COTW-C 01-2019
       Emergency Medical Services System Transformation Project

   6.2 COTW-C 02-2019
       Provincial Review of Regional Government
       To be distributed.

7. OTHER BUSINESS
8. **NEXT MEETING**
   The next meeting will be held on Thursday, April 4, 2019 at 6:30 p.m. in the Council Chamber, Regional Headquarters.

9. **ADJOURNMENT**

If you require any accommodations for a disability in order to attend or participate in meetings or events, please contact the Accessibility Advisory Coordinator at 905-980-6000 (office), 289-929-8376 (cellphone) or accessibility@niagararegion.ca (email).
Objective of COTW

*Provide information to Council to assist with key decisions regarding the future of Niagara EMS as a Mobile Integrated Health system.*
Agenda

1. Interactive displays (pre-meeting)
2. Service overview
   • Recent History
   • Current State
   • Future State
3. Discussion, questions and answers
History of Niagara EMS

2000 land ambulance downloaded
2000-2004 contract service provider (HDH)
2004 land ambulance brought in-house
2005 ambulance dispatch acquisition as 5 year Demonstration Project
2010 ambulance dispatch Performance Agreement with Province
• Establishment of High Performance System
High Performance System (HPEMS)

• Not measured by expense or extravagance

• Measured by simultaneous delivery of
  ➢ clinical sophistication;
  ➢ response time reliability; and
  ➢ economic efficiency
Why HPEMS?

“As EMS providers, we invite the public to literally trust us with their lives. We advise the public that, during a medical emergency, they should rely upon our organization, and not any other. We even suggest that it is safer to count on us, than the resources of one’s own family and friends. We had better be right...”

Jack Stout, father of HPEMS circa 1980
Level of Service Responsibility

• Every upper-tier municipality shall establish, in accordance with the Act, a response time performance plan (RTPP) for its community
• Niagara Region is responsible to establish and maintain these performance targets in a manner that best meets the needs of the community
• Current RTPP based on 2011 actual performance
## Response Time Reliability

### Current RTPP

<table>
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<tr>
<th>CTAS</th>
<th>Target Time (mins)</th>
<th>Target %</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tbody>
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<td>30</td>
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## Response Time Reliability Performance Results

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<th>2016</th>
<th>2017</th>
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<td>99.29%</td>
<td>98.98%</td>
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Last 5 Years

Local health reform

Call volume increases

12 times at Council in 4 years

3 external system reviews
Change in Usage Rate by 5 Year Cohort - Niagara 2011 v 2016

AGE

0-4 9 14 19 24 29 39 44 49 55 59 64 69 74 79 84 85+

Change in Usage

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50%
The Silver Tsunami?

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Ontario Ministry of Finance Population Projection to 2027
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<tbody>
<tr>
<td>0-1 years</td>
<td>Resp. Distress</td>
<td>Seizure/Post Ictal</td>
<td>General Illness/Weakness</td>
<td>Other Medical/Trauma</td>
<td>Newborn/Neonatal</td>
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<tr>
<td>1-4 years</td>
<td>Seizure/Post Ictal</td>
<td>General Illness/Weakness</td>
<td>Resp. Distress</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>Other Medical/Trauma</td>
</tr>
<tr>
<td>5-9 years</td>
<td>Musculoskeletal Trauma</td>
<td>Seizure/Post Ictal</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>Behaviour/Psychiatric</td>
<td>Resp. Distress</td>
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<tr>
<td>10-14 years</td>
<td>Musculoskeletal Trauma</td>
<td>Behaviour/Psychiatric</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>Syncope</td>
<td>Seizure/Post Ictal</td>
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<td>15-19 years</td>
<td>Musculoskeletal Trauma</td>
<td>Behaviour/Psychiatric</td>
<td>Alcohol Intoxication</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
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<td>20-24 years</td>
<td>Musculoskeletal Trauma</td>
<td>Behaviour/Psychiatric</td>
<td>Abdominal Pain NYD</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>Seizure/Post Ictal</td>
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<td>25-44 years</td>
<td>Musculoskeletal Trauma</td>
<td>Abdominal Pain NYD</td>
<td>Behaviour/Psychiatric</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>GI Problems/Pain/Vomiting/Nausea</td>
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<tr>
<td>45-64 years</td>
<td>General Illness/Weakness</td>
<td>Musculoskeletal Trauma</td>
<td>Abdominal Pain NYD</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>Ischemic Chest Pain</td>
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<td>65-74 years</td>
<td>General Illness/Weakness</td>
<td>Resp. Distress</td>
<td>Musculoskeletal Trauma</td>
<td>Abdominal Pain NYD</td>
<td>GI Problems/Pain/Vomiting/Nausea</td>
</tr>
<tr>
<td>75-84 years</td>
<td>General Illness/Weakness</td>
<td>Musculoskeletal Trauma</td>
<td>Resp. Distress</td>
<td>GI Problems/Pain/Vomiting/Nausea</td>
<td>Abdominal Pain NYD</td>
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<tr>
<td>85+ years</td>
<td>General Illness/Weakness</td>
<td>Musculoskeletal Trauma</td>
<td>Resp. Distress</td>
<td>Soft Tissue Pain/Trauma/Edema</td>
<td>GI Problems/Pain/Vomiting/Nausea</td>
</tr>
</tbody>
</table>
Offload Delays aka Transfer of Care

ER delays have cost taxpayers millions: Niagara EMS

Waits to offload patients have increased steadily since closure of emergency at the former Hotel Dieu Hospital

Niagara wants answers about offload delays

Ambulances idling outside hospitals began to skyrocket in August 2016
Hospital Transfer of Care Mitigation efforts

- Double-up patients
- Fit2Sit
- Offload Nurse (MOH)
- Patient Distribution
- Lowering of stretchers
- Data sharing with NH
- Kaisan events with NH
- Weekly discussion with NH

✓ 2019 YTD OLD decrease of 42% compared to 2018
Reports to Council previous 4 years

- **COTW April 2014** - Status of Niagara’s Emergency Medical Services
- **PHD 17-2014** - EMS System Performance Sustainability
- **PHD 17-2015** - EMS System Performance Sustainability
- **PHD 05-2016** - Niagara EMS Master Plan
- **PHD 08-2016** - Master Plan Award of RFP
- **PHD 19-2016** - Niagara EMS Mobile Integrated Health Community Paramedic Update
- **PHD 21-2016** - Update to EMS System Performance Sustainability
- **PHD 05-2017** - Niagara Emergency Medical Services (NEMS) Pomax Master Plan Review
- **PHD 17-2017** - Niagara Emergency Medical Services System Design Changes
- **PHD 19-2017** - NEMS Resource Investment
- **PHD 05-2018** - Niagara EMS/Niagara Health Transfer of Care Improvement
- **PHD 06-2018** - Budget Amendment – NEMS System Redesign Strategy
Outcome of Council Reports

2014  Recommended: 4 additional ambulances, 2 supervisor, 2 support staff
      Result: approved 2 ambulances and balance referred to 2015 budget

2015  Recommended: 2 ambulances, 2 supervisors, 2 support staff
      Result: referred to 2016 budget with eventual approval for
              1 ambulance, 2 supervisors, 2 support staff, directed to conduct
              external review

2016  External Review Undertaken by Pomax

2017  Review recommended 2 ambulances immediately (based on 2015 data)
      Recommend: 1.5 ambulances
      Result: referred to 2018 budget with eventual approval for
              1 ambulance
EMS Call Volume Projected vs Actual

2011-18

Call volume

50%

2011-18

+ Resources = 25%

Projected (IBI)  Projected (NEMS)  Actual  Pomax Projected (Medium)
Gap in Resourcing

Pomax recommended staffing levels NEMS currently short 2 ambulances based on call volume only and does factor in losses due to offload delay.

Table 33: Ambulance and Paramedic Requirement Models - 10-year Time Frame

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<td>Supervisors</td>
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<td>Emergency Response Units</td>
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<td>6</td>
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</tbody>
</table>
Gap in Resourcing

- 50% increase also impacts dispatch
- 100% funded by MOH
- No increase in System Status Controllers (SSC’s)
- Business cases to MOH last 4 years denied
Human Impact

COTW April 17, 2014:
“As system capacity becomes strained from such factors as increased call volumes, more complex health conditions, hospital restructuring, and transfer of care, the effects of workload on staff to maintain the current level of care and responsiveness without increased capacity becomes a growing concern. This places a great deal of pressure on resources, including paramedics and service staff to maintain the quality of service to meet established benchmarks.

Niagara EMS has been experiencing strain on resources evidenced by paramedics facing regular periods of missed meal breaks, shift overrun, and lack of time for auxiliary duties such as cleaning and restocking and completion of critical documentation as required under legislation. Important support services such as QA/CQI, training, supervision and regulatory compliance services experience similar pressures to meet the growing demands on the service.”
Human Impact

PHD 17-2014: “The decline of resources due to increased call volume places stress on people who are functioning in an already demanding occupation. This increase in workload manifests itself in forced overtime, shift overrun, missed meals, and increased sick occurrences.”

PHD 17-2015: “The greatest impacts of the strained system have been on the staff. This is evidenced through increased dissatisfaction demonstrated through formal labour channels, increased health and safety concerns, increased short-term sick time and increased mental health-related incidents”

PHD 21-2016: Respecting end-of-shift overtime, meal breaks, sick claims, mental health related incidents “All of these were positively impacted by the addition of resources”

PHD 19-2017: This has impacted response times, cost of service delivery, as well as working conditions for front line staff through increased workload, more end-of-shift overtime, and increased WSIB claims.
Psychological Impact

**Jan 10, 2019**

NEMS conducted a snapshot survey of comparison of other Ontario EMS services of paramedics unable to attend work in their normal or modified duties, whether it be for short duration or a lengthy, ongoing period (including those captured in the pre-presumptive language) due to a mental health illness that is occupational (WSIB) in origin.

<table>
<thead>
<tr>
<th>Service</th>
<th>%</th>
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<tbody>
<tr>
<td>A</td>
<td>6.3</td>
</tr>
<tr>
<td>B</td>
<td>5.9</td>
</tr>
<tr>
<td>Niagara</td>
<td>5.7</td>
</tr>
<tr>
<td>C</td>
<td>5.5</td>
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<tr>
<td>D</td>
<td>4.9</td>
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<td>E</td>
<td>3.8</td>
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<td>F</td>
<td>2.5</td>
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<td>G</td>
<td>2</td>
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<td>H</td>
<td>1.4</td>
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<tr>
<td>I</td>
<td>1.2</td>
</tr>
<tr>
<td>J</td>
<td>1</td>
</tr>
</tbody>
</table>
Psychological Wellness Mitigation Strategies

- Commenced formalized training on mental health wellness in 2013
- First service in Ontario to train all staff on Safe Talk
- First service in Ontario to train all staff on R2MR
- Addictions Training, self-care and coping strategies through various programs
- Survey of staff formed PTSD Prevention/Mental Wellness Plan as per Bill 163
- NEMS Plan used by Province as best practice example
- Peer Support
- Robust Resource List
- 2019 investing $270,000 in new resources specific to develop/implement additional mental health programs and the introduction of a Clinical Psychologist
- Continuous policy changes to manage workload/work environment
A Need to Innovate

Council has directed staff not to simply follow traditional EMS service models but actively look for innovative ways to deliver mobile health services that are not only more efficient but better meet the needs of patients.
“Central to each (country’s) vision is the concept of providing pre-hospital care as a system, rather than just a single service type, that can provide a flexible response to a wide with other related healthcare providers. “ (Sheffield, pg. 44)
Redefining the patient journey

Present healthcare system challenges:
- Aging population
- Increasing healthcare costs
- Increase in chronic illness
- Increasing ED wait times

Alternate destination options:
- Right care right time, right provider
- Right destination

Patient-centered care

NIAGARA EMERGENCY MEDICAL SERVICES
System Transformation

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

911 AMPDS

<table>
<thead>
<tr>
<th>High Acuity Emergent</th>
<th>Priority Response (clinically driven)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Acuity Non-Emergent</td>
<td>MIH Response</td>
</tr>
</tbody>
</table>

**Scheduled Health Care**

<table>
<thead>
<tr>
<th>Community Paramedic</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIH Focused Cohort Follow-up</td>
</tr>
</tbody>
</table>
Low acuity patients who may not need ambulance and ED
ECNS - LowCode

• Secondary triage for low acuity patients
• Completed research (Omega Project)
• Alternate care pathways
• Planning for implementation Q2 2019
Mobile Integrated Health
Mobile Integrated Health

Multidisciplinary Response

- MHART - Mental Health & Addictions Response Team
  - paramedic with mental health nurse
  (in kind from NH, WMFHT & Quest CHC)
Mobile Integrated Health

Multidisciplinary Response

- **MHART - Mental Health & Addictions Response Team**
  - paramedic with mental health nurse
  - (in kind from NH, WMFHT & Quest CHC)

- **FIT – Falls Intervention Team**
  - paramedic with Occupational Therapist
  - (secondment with HDS)
Mobile Integrated Health

Multidisciplinary Response

• MHART - Mental Health & Addictions Response Team
  - paramedic with mental health nurse
  (in kind from NH, WMFHT & Quest CHC)

• FIT – Falls Intervention Team
  - paramedic with Occupational Therapist (secondment with HDS)

• CARE – Community Assessment & Referral Team
  - paramedic with system navigator (provided by LHIN)

Community Paramedicine (100% funded by LHIN)

• Paramedic with rostered patients
• High volume users of EMS and hospital
• Integrated with community resources
Additional Community Initiatives

• Collaboration to provide medical oversight at Consumption and Treatment Service with Positive Living Niagara (PLN) - 100% funded by PLN
• Community Paramedic visits to the Out of the Cold Supper Program 7 days/week
• Paramedic @ Regional Essential Access for Connected Healthcare Niagara (REACH) Clinic - funded by the LHIN in a multi-disciplinary team of Physician, NP’s delivering primary care at the Southridge and Booth Shelters in St.Catharines
• Expanding Care by Paramedics to Palliative Care Patients Feasibility Research Study - Collaboration with CPER, LHIN - Results of this will be passed onto Provincial Study group in order to help guide provincial expansion of Paramedic Palliative Care models - cost is within budgeted dollars
Alternate Transport
2018 call volume ↑2.5% vs 6.5-8.5% each year previous
Early Outcomes

Month over Month Cumulative Incident Increase, 2018

Policy Changes

Public Awareness

“Soft Launch” of MIH
Early Results

- 2018 2.8% volume increase compared to 6.6% yearly average from 2011-2017

- 5% reduction overall of mental health transports to hospital to ED despite a 7% increase in mental health calls coming into our communication centre

- Increase of 0% in calls for falls and a 2% decrease in transports to ED - the previous year saw an increase of 9% in falls

- 0% increase of calls for general unwell patients but an overall decrease in transports to ED of 6% for this cohort
## Clinical Response Plan (CRP)

<table>
<thead>
<tr>
<th>Priority</th>
<th>Time Dependency</th>
<th>Determinant Level Typically Includes*</th>
<th>Resource/Response Plan Could Include*</th>
<th>Alternative Response Options*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Critical Immediate Lights/Sirens</td>
<td>Echo, Delta</td>
<td>PCP Transport Unit</td>
<td>ACP Transport Unit</td>
</tr>
<tr>
<td>2</td>
<td>Emergent Lights/Sirens-- discretionary</td>
<td>Delta, Charlie</td>
<td>ACP Transport Unit</td>
<td>PCP Transport Unit</td>
</tr>
<tr>
<td>3</td>
<td>Urgent No Lights/Sirens</td>
<td>Charlie, Bravo</td>
<td>PCP Transport Unit</td>
<td>ACP Transport Unit</td>
</tr>
<tr>
<td>4</td>
<td>Less Urgent No Lights/Sirens</td>
<td>Bravo, Alpha</td>
<td>MIH Unit</td>
<td>PCP Transport Unit</td>
</tr>
<tr>
<td>5</td>
<td>Non Urgent No Lights/Sirens</td>
<td>Bravo, Alpha, Omega</td>
<td>Clinical Advisor</td>
<td>PCP Transport Unit</td>
</tr>
</tbody>
</table>

* While this provides a guideline, response priority could vary by individual determinant, assessment of skills demand and previous outcome data.
Niagara EMS Community Perception Survey

Have your say

Take our short survey for a chance to win an iPad mini at niagararegion.ca/ems

Niagara EMS Community Perception Survey

Help guide the future of Niagara EMS

Have your say

Take our short survey for a chance to win an iPad mini at niagararegion.ca/ems

Niagara EMS Community Perception Survey

Help guide the future of Niagara EMS
Targeted Regional Overview
Survey Distribution Strategy

- Wallet card and poster distribution
- Targeted mail out to existing EMS users
- Distribution of survey details through Advisory committee and subcommittee networks
- Presentations
- Social Media
Responses

Survey Results

- Sep 18: 0
- Sep 25: 490
- Oct 1: 807
- Oct 9: 915
- Oct 17: 1139
- Oct 22: 1257
- Oct 29: 1615
- Nov 5: 1738
2. What is the role of EMS in URGENT medical situations (e.g. major blood loss, head injury, loss of consciousness, chest pain, traffic accident injuries)? Choose all that apply.
3. What is the role of EMS in NON-URGENT medical situations (e.g. flu, sprained ankle, broken arm, etc.)? Choose all that apply.
Change to BCEHS dispatch system better matches resources to patient needs

June 14, 2018


BC Emergency Health Services has implemented a new process for dispatching paramedics, ambulances and other resources to patients. The aim is to get to the most life-threatening calls faster, while at the same time improving the experience for patients who don’t require transport to hospital.

Needs of patients change, so it’s important to keep reviewing the Response Model. The Clinical Response Model will be reviewed after a year and its target to respond to 75% of all priority patient calls. Upcoming changes include preventing certain types of chest pains or head injuries, will be downgraded.

This press release was published by the Welsh government.

People who need immediate care receive the highest-priority and are taken care of as quickly as possible from the Welsh Health and Social Services under changes being outlined by the Government.
Stakeholders & Partners

- NEMS Paramedics & SSC’s
- Community Services
- Public Health
- Niagara Health
- LHIN
- Welland McMaster Family Health
- Smithville Family Health
- Regional Fire Coordinator
- NRPS
- Bridges Community Health
- Community Patient Advocate
- Health Links
- Centre for Paramedic Education & Research
- Centre de Santé
- NEMS Medical Director
- NEMS CP Medical Director
- University of Sheffield
- Brock University
- McMaster University
- Ministry of Health
NEMS Outcomes Framework

**Patients** = Responsive  
**System** = Sustainability  
**NEMS** = Protecting Our People

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**GOALS**
- Available
- Accessible
- Affordable

**IMPACTS**
- Patients:
  - Client-centred
  - Responsive
  - Tailored care
- NEMS:
  - Affordable
  - Appropriate
- System:
  - Service Integration
  - Accessible

**OUTCOMES**
- Improve patient experience
- Enhanced care tailored to patients’ needs
- Increase patient’s access to services
- Reduce repeat callers
- Increase accessibility of available resources
- Reduce transports to ED
- Increase community collaboration

**REACH**
- Mobile Integrated Health Teams
  - Nurse Navigator
  - New Clinical Response

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**PATIENTS**
- NEMS
- SYSTEM

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**Niagara Region**

**NIAGARA EMERGENCY MEDICAL SERVICES**

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Moving Forward

• **PHD 07-2019** – Response Time Performance Plan (March 19th)

• Launch of Clinical Response Plan and Emergency Communications Nurse System (June/July)

• Economic Evaluation (McMaster University)

• Sustainability Plan for 2020 and beyond

• Facility Plan Update
Thank you
MEMORANDUM

Subject: EMS System Transformation Project
Date: March 7, 2019
To: Committee of the Whole
From: Kevin Smith, Chief, Niagara Emergency Medical Services

Executive Summary

In the last 6 years, demand on Emergency Medical Services (EMS) in Niagara has risen 50%. Through the commitment of both present and previous Council to ensure high quality emergency care for our communities, over that same time period, additional frontline resources (paramedics) have been enhanced by 25%. With forecasts of continued growth of 911 utilization at these rates over the next 10 years, system delivery within the current model is not economically sustainable nor is it providing the best possible mobile health services to our communities. While efforts continue to ensure response time reliability for the most critical patients, the care providers themselves are negatively impacted by these system pressures.

In February 2018, Niagara EMS staff commenced work as directed by Council on what has been coined the System Transformation Project. The objective of this initiative is to ‘redefine the patient journey’ for people calling 911 for health services. While historically 911 had been primarily accessed for patients suffering from a serious illness or injury requiring a time-sensitive emergency response by paramedics and conveyance to an emergency department, the evidence today shows that a large portion of the drivers of the increase in EMS demand is originating with incidents of lower acuity (non-emergent) in nature where health needs may be better provided through alternate resources other than an emergency department.

PHD 17-2017 provided detailed information on the approach to be taken not to simply follow traditional EMS service models but actively to look for innovative ways to deliver mobile health services that are not only more efficient but better meet the needs of patients. Proposed changes to transform the delivery of services include response plan policy modifications, implementing a secondary triage process, development of integrated health teams, improved allied agency tiered response and creating alternate response options through enhanced clinical pathways.

In the coming weeks, Council will be receiving reports on the progress of this work at which time staff will be providing recommendations for Council’s consideration. The objective of the Committee of the Whole is to provide an enhanced level of
understanding of Niagara EMS, its evolution, the system pressures of today and opportunities for future sustainability. With a new term of Council and many councilors who may not have the history of the decisions made to date, ensuring Council has full information and context on the entire project in advance, as well as the opportunity to discuss issues and explore questions in detail, will assist in the decision-making on the more focused proposals in the ensuing reports.

Items for discussion on March 7 will include:

- Recent history of Niagara EMS including governance, municipal responsibilities and system design.
- Current system performance and the influencing factors such as increased call volumes, health care restructuring and offload delays.
- A brief review of the reports to Council over the past 4 years related to system pressures and the outcome of those reports.
- Recognition of the human impact the system pressures have on people working within the system.
- Review of the System Transformation Project and the early results being seen in improved service delivery, system stabilization and future sustainability.
- Next steps for Council decision-making.

As a supplement to the meeting’s proceedings, static displays including an ambulance, equipment and technology will be set up in the foyer before the meeting from 6:00-6:30 pm.

Respectfully submitted and signed by:

Kevin Smith
Chief
Niagara Emergency Medical Services