1. Introduction
Chronic pain (CP) is a prevalent problem in the province of Ontario. Healthcare providers (HCPs) manage the majority of CP patients, yet receive minimal training 1. Project ECHO™ (Extension for Community Healthcare Outcomes) is a model that uses telehealth technology to bridge specialists in academic centres to HCPs in remote areas 2. ECHO Ontario Chronic Pain and Opioid Stewardship aims to disseminate knowledge and enhance capacity in HCPs across Ontario 3.
ECHO Ontario runs weekly 2-hour sessions that starts with a 20- min didactic on a CP topic followed by a de-identified patient case discussion presented by one of the HCP attendees. For every case presented, case presenters receive recommendations for potential management approaches 3.

2. Objectives
- To evaluate the impact of ECHO on HCPs’ self-efficacy, knowledge, attitudes and behaviours related to chronic pain management and opioid prescribing.
- To evaluate HCPs’ satisfaction after attending ECHO.
- To evaluate if the type of professions, attending a case at ECHO, or the number of ECHO sessions attended modified the results.

3. Methods
A pre-post online questionnaire was administered to HCPs who attended ECHO sessions.
- Demographics;
- Self-Efficacy: a 19-item validated questionnaire from UNM regarding CP management and opioid use 4;
- Attitudes and behaviours: 7 items selected from the KnowPain-12 validated instrument 4;
- Knowledge: 8 items adapted from the KnowPain-12 4;
- Satisfaction: an 11-item validated questionnaire from UNM, administered only post-ECHO.

4. Statistical Analysis
- Paired tests and Wilcoxon signed-rank tests were used to assess differences between pre- and post-ECHO.
- Change scores for each outcome were computed and differences between profession type and case presentation were evaluated using ANOVA, independent samples t-test or Mann-Whitney U test.
- Pearson’s or Spearman’s correlations examined the relationship between changes in outcomes and the number of ECHO sessions attended.

5. Results
5.1 Descriptive Characteristics
- From June 2014 until March 2017, ECHO provided 124 weekly sessions.
- A total of 264 HCPs who attended ECHO were invited to complete the online questionnaire.
- Of these, 170 (64%) completed the Pre-ECHO questionnaire and 119 (45%) completed both pre- and post-questionnaires.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n = 119</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profession n(%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician, Physical Assistant (PA), Nurse Practitioner (NP)</td>
<td>70 (59%)</td>
<td></td>
</tr>
<tr>
<td>Pharmacists, Registered Nurses (RN)</td>
<td>22 (18%)</td>
<td></td>
</tr>
<tr>
<td>Allied Health Professionals (Psychology, Physical Therapy, Occupational Therapy, Chiropractor, Social Worker)</td>
<td>27 (23%)</td>
<td></td>
</tr>
<tr>
<td>Number of sessions attended Mean (SD)</td>
<td>15 (9.19)</td>
<td></td>
</tr>
<tr>
<td>Case presenter n(%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>69 (58%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>50 (42%)</td>
<td></td>
</tr>
</tbody>
</table>

5.2 Self-efficacy
- A total of 109 participants completed this section.
- Self-efficacy improved significantly for all professions pre- and post ECHO.

5.3. Attitudes and Behaviours
- A total of 110 participants completed this section.
- No significant differences were found with regards to attitudes and behaviours for the total sample and for each profession.

5.4. Knowledge
- 105 participants completed this section.
- Knowledge significantly increased from pre-test to post-test for all ECHO participants and for each profession category.

5.5 Satisfaction
- 117 participants completed this section
- Average of 96% of participants either strongly agreed or agreed with all the 11 satisfaction statements.
- No differences in satisfaction were observed between professions (p=.130 to .888).
- Participants who presented a case were more likely to strongly agree with eight of the 11 satisfaction items compared to participants who did not present a case (p =.000 to .041).
- A significant positive relationships were observed between number of ECHO sessions attended and 5 of 11 satisfaction items (p<.000 - .04).

6. Discussion
- Participation in ECHO significantly improved healthcare provider’s self-efficacy and knowledge regarding chronic pain management and opioid use.
- No significant differences in attitude and behaviours were observed pre- and post-ECHO, nor were there any observed differences between professions, case presenters, or number of sessions attended.
- No significant differences in knowledge change were observed between professions suggesting that ECHO was successful in enhancing provider knowledge about pain management equally for all ECHO participants.
- Satisfaction was high among HCPs attending ECHO, and significantly higher among those who present cases and those who attend more sessions.
- Only some selected items of a valid questionnaire were used, which may have affected showing a significant change in attitudes and behaviours.

7. Conclusion
- The ECHO model demonstrates an effective strategy to build capacity and increase access to CP management and safe opioid prescribing in the province of Ontario.
- This project may be used as a template for creating educational programs on other medical topics.

8. References

Contact Information: echo.ontario@uhn.ca
Twitter: @EchoOntario, Facebook: ECHOOntario
www.echo.ontario.ca

Fig. 1 The ECHO “Hub and Spoke” Knowledge Translation model.

ECHO ONTARIO: Impact on Health Care Providers
Andrea Furlan1,2,3, Jane Zhao3, Jennifer Voth3, Samah Hassan1,3, Ruth Dubin3, Jennifer Stinson6,7, Susan Jagal1,6, Ralph Fabi3, Andrew Smith3, Paul Taenzer1,3, John Flannery1