First French-Speaking ECHO® Hepatitis C Telementoring Program: Evaluation at Year-Two

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BACKGROUND

The ECHO® (Extension for Community Healthcare Outcomes) model was developed at the University of New Mexico health Sciences Center to improve access to HCV care and treatment in underserved populations. This Hub and spokes model consists in linking through multipoint videoconferencing an interdisciplinary HCV expert team with community-based healthcare professionals. Providers learn best practice through co-management of real world cases with increasing independence as their skills grow (ref 1,2,3).

In April 2017, we launched in a large tertiary-quaternary care university hospital in Quebec a French-speaking ECHO® Hepatitis C program in order to increase the number of treatment providers and treatment uptake.

AIM

The aim of this study was to measure after 2 years the impact of the ECHO® CHUM Hepatitis C program in terms of 1) participants satisfaction, knowledge and self-confidence to manage HCV infected patients; 2) outcomes of patient discussed; 3) recommendations regarding medication and drug-drug interactions.

METHODS

TeleEcho clinics are held bimonthly at the University of Montreal University Hospital (CHUM). Participants connect with a computer, i-pad, or phone using a zoom link. They present real de-identified cases to other participants and HCV experts team (addiction specialist, hepatologist, infectious disease specialist, nurse, pharmacist). Discussion, feed-back and guidance from the hub lead to recommendations. A short learning capsule concludes the session.

Data were collected prospectively during the 2 cycles 2017-2018 and 2018-2019. Participants' change in knowledge was measured by comparison of pre/post learning capsule tests. Characteristics of cases presented, recommendations, and outcomes were extracted from the forms completed by participants and the recommendations issued, completed when needed by e-mail follow-ups from the coordinator.

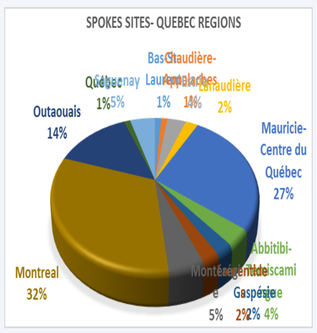
Additional data were collected from the spokes who agreed to be part of a research study. This subgroup completed surveys adapted from the ones developed by the ECHO® Institute: 1) Self-reported confidence to manage HCV patients using Project ECHO hepatitis C survey; 2) Overall satisfaction with the program using Project ECHO _Care Clinic Staff and Administrator Survey satisfaction with ECHO Care Team.

RESULTS

The participants

85 professionals (40 nurses, 23 general practitioners, 4 pharmacists, 18 other) enrolled in the program between April 2017 and July 2019. Participants are located in 13 of the 17 administrative regions of Quebec.

Isabelle St-Pierre and Annie Labarre, spoke nurses from Mauricie-Centre-du-Québec, 100 miles from the CHUM.



Eight participants work in provincial prisons, 2 in Arboriginal Communities, and 17 in drug rehabilitation centers.

RESULTS

ECHO CHUM hepatitis C TeleClinics

47 teleClinics were held and 42 didactics were delivered between April 2017 and July 2019. Mean number of participants per session: 9.3 (range: 2-21)

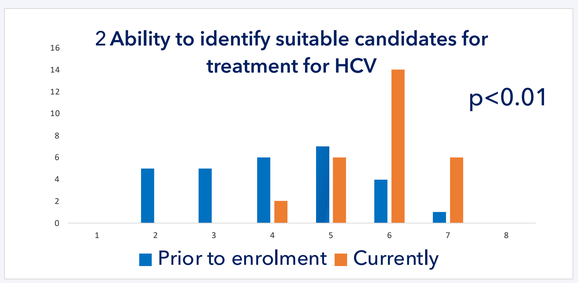
Participants' knowledge increase

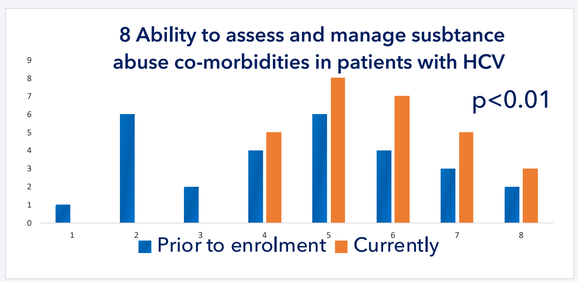
Comparison of the percentage of correct answers to pre/post tests conducted during 32 sessions showed an increase in the participants knowledge; mean 24% (95%CI:18.4-28.7). The highest knowledge increase was observed after the following didactics:
Immunization in hep C patients (48%)
Nutrition in hep C and cirrhotic patients (33.9%)
Screening for hep C (36.4%)

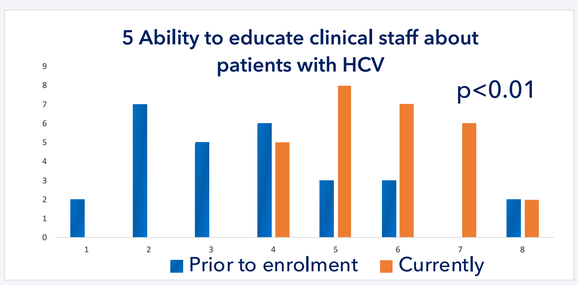
Participants' self-reported confidence in their abilities to manage patients with HCV

28 participants rated themselves (their knowledge, skills or competence) at the end of a cycle, both retrospectively (prior to enrolment) and currently, on a 1 to 7 Likert scale (1=none or no skill at all; 7 = expert, teach others). Pre/post evaluations were compared using Wilcoxon signed rank test.

A significant increase ($p<0.01$) was found for all 9 questions, notably for the following aspects:







Characteristics of cases presented

Mean age of the 63 patients discussed was 50 years (25-72); 51 were male (81 %) and 17 cirrhotic (27%).

History of lifetime drug use	55 (87.3%)
History of lifetime IVDU	54 (85.7%)
Actively using drugs	38 (60.3%)
Actively injecting drugs	16 (25.4%)
Active R-OH use	18 (28.6%)
Ongoing OAT*	19 (30.1%)

* Opioid Agonist Therapy (17 methadone; 2 suboxone)

63 cases discussed

50 DAA treatments recommended

43 patients treated with DAA*

31 patients with SVR

Outcomes

Reason for no DAA treatment recommendation: DAA initiated prior to presentation (6); liver disease too advanced (1); pregnancy (1); life expectancy < 1 year (1); other (4).

*DAA were initiated after treatment recommendation in teleClinic in 37 pts while 6 pts were already on DAA.
Reason for no DAA initiation: pending (6); lost to follow-up (4); not specified (2); incarceration (1).

SVR pending (10); one pt relapsed and developed hepatocellular carcinoma (1); lost to follow-up (1).
One patient died 3 months after SVR of decompensated cirrhosis on alcoholic hepatitis.

HCV treatment and SVR rates according to drug use

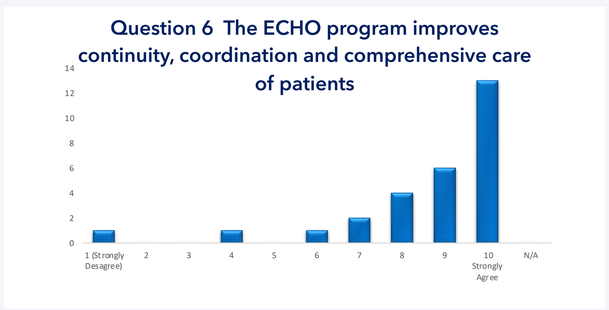
	No drug use n = 25	Active drug use n= 38	Active IV drug use n = 16
DAA recommended	20 (80%)	30 (79%)	11 (69%)
DAA treated	16* (64%) 2 pts LFU	26* (67%) 5 pts LFU	11* (82%)
Sustained virological response	13 (3 pending)	17 (7 pending)	8 (3 pending)

* DAA treatment was initiated prior to presentation in teleClinic in 3 pts not using drugs and 2 active IDU.
LFU: lost to follow-up

DAA treatment recommendation and initiation rates did not differ among active and non active DU, Fisher test p=0.49 and p=0.24 respectively.

Were the participants satisfied with the program?

A high level of satisfaction was overall reported by the 28 participants who completed the satisfaction survey at the end of a cycle especially regarding the following aspects:



Pharmaceutical recommendations

Theme	Spokes questions	Hub recommendations
Drug-drug interactions	9 (14.5%)	21 (33.9%)
Medication for comorbidities	4 (6,4%)	7 (11.3%)
Hepatitis B	3 (4.8%)	3 (4.8%)
Immunization	1 (1.6%)	4 (6.4%)

DDI were discussed regarding PPI (n=12), statins (n=4), OAT (n=3), anti-psychotics (n=3), and others (n=7).

Harm reduction and addiction treatment strategies were discussed in 10 cases with recommendations relating to OAT (n=2), anti-craving (n=2), naloxone kit dispensation (n=2) and general recommendations (5).

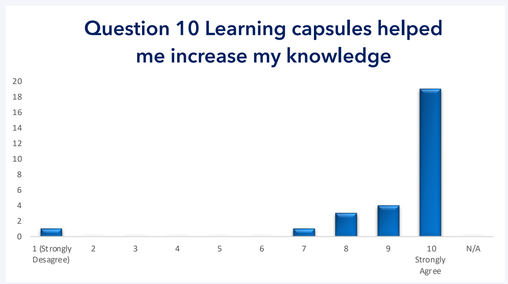
Nurses in the program

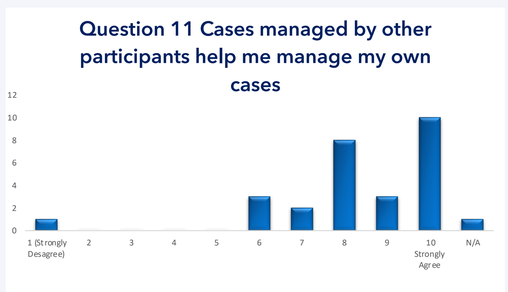
Barbara Kotsoros with Chantal Leclerc, champion Spoke nurse from Mauricie-Centre-du-Québec

Nurses represented 40% of participants in year-1 and 50% in year-2. The percentage of cases presented by nurses increased from 38% in year-1 to 73% in year-2.

Six didactics were delivered by nurses (hub: 3; spokes: 3). The highest knowledge increase followed the capsule delivered by a spoke nurse on immunization. Moreover, promotion of the program by nurses led to recruiting additional spokes including GPs.

Barbara Kotsoros and Sofiane Chougar, Hub nurses at the CHUM





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CONCLUSION

The ECHO® CHUM Hepatitis C program enabled professionals to increase their knowledge and abilities to manage HCV infected patients including active drug users and provided opportunities to discuss harm reduction and addiction treatment strategies. Our results underline the benefit of the ECHO® model multidisciplinary approach with a significant number of recommendations issued by the hub pharmacist and the prominent role of nurses in promoting access to treatment and managing patients with HCV. Our next goals are to better capture the full impact of the program and evaluate its return on investment to ensure the sustainability of the program.

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