

Educating Health Professionals: A Hepatitis C Educational Program in a Health Maintenance Organization

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Abstract

Objective: To describe the components of and staff reaction to an educational outreach program about hepatitis C (HCV) at a managed care organization in Minnesota.

Project Protocol: Educational programs for primary care clinicians consisted of lunch-and-learn sessions conducted in 2 phases. In phase 1 (1997-1998), educational programs were offered in 4 clinics; in phase 2 (1999), these programs were offered to a larger number of clinics. There was a structured, 2-stage recruitment process, and the protocol included multiple contacts that involved sending educational materials to participants several weeks before the program. A development team, comprised of key health maintenance organization (HMO) stakeholders, provided consultation.

Evaluation: The initiative reached more than 1000 healthcare professionals, including 150 physicians. The educational programs received very high ratings, and pre- and posttests documented significant improvement in knowledge about HCV.

Conclusions: This successful educational initiative had 5 key elements: (1) value to healthcare staff (ie,

importance of the topic and quality of the programs); (2) incentives (ie, convenience, free lunch, and continuing medical education/continuing education unit credits); (3) repeated exposures (ie, multiple opportunities for learning, both oral and written); (4) commitment by key stakeholders at the HMO and the clinics; and (5) an exceptionally well-organized implementation plan.

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Hepatitis C (HCV) is a liver-damaging, blood-borne disease that has been described as “a worldwide health problem of immense proportions.”¹ HCV is estimated to affect 4 million Americans and lead to more than 10,000 deaths annually. Over one third of liver transplants are attributable to HCV.

HCV was first identified only 10 years ago, and until 1989, there was no specific assay for HCV, which was classified only as non-A /non-B. Blood was not screened for HCV before 1992, and patients who received blood transfusions before then are at risk of infection. Blood contamination with HCV continues to be a serious health risk in many non-Western countries.

Currently, there is no vaccine against HCV.²⁻⁴ The accepted treatment for chronic HCV is a combination of interferon and ribavirin, which must be administered for at least 6 months and has an overall, permanent response rate of about 40%. The combination therapy is much more effective than inter-

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feron alone, which until recently was the only approved treatment.⁵⁻⁷

In this paper, we describe a successful HCV educational outreach effort at HealthPartners in Minnesota called the Hepatitis C Health Management Project. This was the first attempt to develop, imple-

ment, and evaluate a management protocol for HCV in a health maintenance organization (HMO). A central goal of this project was to provide basic information about diagnosis and treatment of HCV to primary care physicians and nurses. We discuss the procedures needed to ensure efficient and effective transmission of information about this important public health topic to large numbers of healthcare professionals.

This educational initiative was motivated by several factors. First, HCV infection is a serious disease that was only recently classified. Much HCV information is new, and the standards of care are changing rapidly, due to new research developments. Second, primary care clinicians are in a key position to identify risk factors and educate patients. Third, diagnosis of HCV is difficult because the disease develops slowly, sometimes over decades, and there may be no obvious symptoms in the early stages. Fourth, news coverage about the HCV "epidemic" is likely to cause concern among the general public.

Background

At HealthPartners, HCV is one of the infectious diseases discussed during in-clinic training sessions, as mandated by the Occupational Safety and Health Administration (OSHA). However, HCV training is, by necessity, brief. Although healthcare professionals in this area have opportunities to attend special programs on HCV, the time, cost, and inconvenience of traveling to off-site locations create barriers to attending these programs. At best, such programs reach only a small proportion of primary care clinicians.

The Hepatitis C Health Management Project. The Hepatitis C Health Management Project included an education awareness initiative, a program evaluation, and a research study (designed to develop and validate a screening protocol for at-risk enrollees and healthcare workers). The project was sponsored by Integrated Therapeutics Group (ITG), the health management division of Schering-

Table 1. Key Components of Hepatitis C (HCV) Educational Presentations

Topic	Examples of Contents
Impact of HCV in the United States	4,000,000 prevalent cases 30-35,000 incident cases/year 10,000 deaths/year
Description of virus	Single-stranded RNA virus Ability to persist in host Mutates rapidly
Process of infection	Blood-to-blood contact Risk factors: exposure to infected blood/products, IV drug use, intranasal cocaine, body piercing, high-risk sexual activity, previous exposure to hepatitis B virus
Association with other disease	Alcoholic liver disease Autoimmune hepatitis Cryoglobulinemia (mixed)
Natural history and progress	Insidious onset over decades Strong association with hepatocellular carcinoma
Predictive factors	Level of viremia Infection source Alcohol use/abuse Genotype
Patient workup	General medical history Confirmation of signs and symptoms Blood work/tests
Goals of therapy	Decrease HCV replication/eradicate HCV Decrease hepatic necrosis Halt progression of cirrhosis Decrease infectivity
Treatment response predictors	Mild disease Low level of HCV-RNA Not HCV genotype 1b
Treatment	Types of interferon/combination therapy Treatment duration and dosages Side effects Contraindications and adverse reactions

RNA=ribonucleic acid; IV=intravenous.

Plough, (Kenilworth, NJ). HealthPartners Research Foundation, in partnership with ITG, organized the educational programs and conducted the evaluation and research study. Results of the research component of the project have been reported elsewhere.⁷

Setting. This project was implemented at HealthPartners, an HMO in Minnesota. HealthPartners owns 19 primary clinics (staff clinics) and contracts with a large number of other clinics and clinic groups (affiliate clinics). All patients are HMO enrollees. In staff clinics, all clinical staff members are HMO employees. At the affiliate clinics, only a portion of clinic patients are HealthPartners enrollees. All told, the HMO serves approximately 780,000 enrollees. The educational programs were offered in the largest clinics.

Project Protocol

The educational program for primary care physicians, titled *Hepatitis C: You Can Make a Critical Difference*, consisted of 1-hour lunch-and-learn sessions. All programs were offered on-site, in the largest room available, and participants received a box lunch and continuing medical education (CME) or continuing education unit (CEU) credits, at no charge. The program was presented in 2 phases. During phase 1, conducted from November 1997 through February 1998, the program was presented in 4 clinics owned by HealthPartners. During phase 2 (January 1999 through March 1999), the program was offered to additional staff and affiliate clinics.

Four presenters participated in the program, including 2 physicians and 2 nurse educators. All presenters had extensive research and clinical experience with HCV. The presenters used similar sets of slides, and the program content was designed to be comparable across all sessions. The topics and program content are summarized in Table 1.

Recruitment. We recruited clinics in 2 stages. We first issued invitations to clinic managers and medical chiefs, and we then issued invitations to clinic staff. The clinics were given a cut-off date to confirm participation. If a clinic expressed an interest in the educational programs, we then held meetings with clinic representatives in person or over the telephone. The meetings were structured, standardized, and designed to ensure coverage of key issues. In these meetings, we provided further information about the project, assessed the clinic's level of interest, discussed possible barriers, addressed questions or concerns, and considered logistics for the lunch-and-learn sessions, such as room availability, room capacity, dates, and times of day. We determined eli-

gibility based on the number of HealthPartners enrollees at each clinic. We made an effort to accommodate the particular needs, interests, and circumstances of each clinic. For example, we offered multiple sessions in some clinics because of limited room capacity and/or varied clinician schedules.

We provided materials to participants at each clinic 4 times *before* the lunch-and-learn sessions. Typically, these materials were received within 2 weeks of the sessions, and almost all contacts offered facts about HCV and logistical information. An initial memo announced the program title and date(s). About 2 days later, clinic staff received individual letters of invitation; around the same time, a poster, printed on gold paper, was posted in the lunch room with a sign-up sheet. The lunch-and-learn program followed about 8 days later. There was a small variation in timing from clinic to clinic due to vacations and weekends.

Phases 1 and 2. Over the 2 phases, lunch-and-learn programs were held at 17 clinics, for a total of 34 sessions. Each of the participating staff clinics served 10,000 or more enrollees. Affiliate clinics were invited to participate if they served at least 6,000 HealthPartners enrollees; lunch-and-learn programs were held at 5 affiliate clinics.

Although the basic format of the 2 phases was comparable, there were several differences, as Table 2 shows. Phase 1 involved 4 large staff clinics, had a greater variety of attendees (all clinic staff were invited during phase 1), and more lunch-and-learn sessions per clinic. Phase 2 provided an important opportunity to test the feasibility of offering lunch-and-learn programs to both affiliate and staff clinics. Eight staff clinics participated in phase 2, and some phase 2 clinics had only one session, although 2 or 3 sessions were held at the request of the largest contract clinics. In addition, anonymous blood screening for HCV was offered as part of the program's overall research component during phase 1.

Pre- and posttests designed to evaluate what participants learned were implemented only in phase 2. These 1-page tests, each with true/false or multiple-choice questions, assessed participants' knowledge of basic HCV facts, risk factors, diagnosis, and treatment options.

Involvement of Stakeholders. A development team comprised of key stakeholders at HealthPartners was assembled to ensure that both administrative and clinical perspectives were represented during the design and implementation of the education and research initiatives. The development team included a primary care physician, a nursing administrator, a

work site health specialist, an infection control coordinator, a laboratory technician supervisor, and members of the project research team. This team reviewed all procedures and materials and provided practical advice about the best way to work with

clinics. They attempted to make the educational programs appealing to nurses and physicians without interfering with other programs or systems in the clinics. For example, they provided information about what materials were included in OSHA training and under what circumstance physicians could use the HCV program to complete their annual OSHA requirement.

Two other types of stakeholders played important roles in the project. Medical directors at HealthPartners served as project sponsors and cosigned letters of invitation to the clinics and clinical staff. Clinic managers, medical chiefs, lead nurses, and others had responsibility for working with the project team to coordinate the programs in their clinics.

Table 2. Comparison of Phases 1 and 2

Organizational Features	Phase 1	Phase 2
Type of clinic	Staff-model clinics only	Both staff-model and affiliate clinics
Attendees	All clinic staff*	Physicians and nurses [†]
Sessions per clinic	3-4	1-3
Evaluations included	Yes	Yes
Hepatitis C screening offered	Yes	No
Knowledge tests included	No	Yes

*All clinic staff included physicians, dentists, laboratory technicians, nurses, pharmacists, clinic managers, optometrists, and receptionists.

[†]Nurses included registered nurses (RNs), licensed practical nurses (LPNs), physician assistants (PAs), certified medical assistants (CMAs), and nurse practitioners (NPs). However, although invitations were sent only to physicians and nurses, some other healthcare workers in these clinics also signed up for the sessions.

Program Evaluation

A descriptive evaluation was included as part of the protocol. The evaluation focused on 3 areas: level of participation, satisfaction, and impact on short-term knowledge

Participation. Attendance at the lunch-and-learn sessions was very high, an indication of staff interest in the topic. Phase 1 invitation letters were sent to 872 healthcare workers; 597 of these workers attended the sessions, for a 68% response rate. This attendance far exceeded the development team's early expectations. The phase 2 response rate was similar (61%), even though there were fewer opportunities at each clinic (Table 3).

Table 4 shows the breakdown of professions among participants. Overall, 1131 healthcare professionals attended the programs and signed the registration forms. The great majority of attendees were front-line medical staff involved in direct

Table 3. Clinic Participation in the Hepatitis C Lunch-and-Learn Programs: Phases 1 and 2

Clinic Participation	Phase 1	Phase 2	Total
Total no. of clinics	4	13	17
No. of health maintenance organization staff-model clinics	4	8	12
No. of affiliate clinics	0	5	5
No. of lunch-and-learn sessions	16	18	34
No. invited*	872	876	1748
Total no. of participants	597	534	1131
% participation (participated/invited)	68%	61%	65%

*The "number invited" is an estimate and was based on a count of names provided by the HMO or the clinics.

patient care; 150 of these participants were physicians. Because we invited all clinic staff in Phase 1, but not in Phase 2, about 20% of phase 1 attendees were administrative or clerical staff, compared with less than 2% in phase 2.

Of the 597 staff members attending the phase 1 sessions, 501 participated in HCV screenings, for a response rate of 84%. This level of participation far exceeded the development team's expectations and illustrated that incentives for participating in the blood screening were unnecessary.

Satisfaction. To assess satisfaction, the participants completed anonymous satisfaction forms at the end of each lunch-and-learn program. The form was modeled after the form used to evaluate CME programs at the HMO, but was modified to cover the specific program content. It covered the following topics: relevance, adequacy of program content, effectiveness of speaker, printed and audio-visual materials, and overall rating.

As Table 5 shows, the evaluations were very positive. Almost all the attendees rated speaker knowledge, speaker effectiveness, and the overall program as good or excellent. The open-ended comments were enthusiastic. Examples include: "I didn't know much about this, so I learned a lot of basics" and "Great in-service—very informative." Participants said that the most important things they learned included: a general overview of the topic, how to diagnose and test for HCV, risk factors and symptoms, and treatment methods.

Knowledge Improvement. The pre- and posttests show substantial improvement in basic HCV knowledge (Table 6). In the pretest, only 13% of attendees answered all 3 questions correctly; in the post-test, 72% correctly answered the questions. (Although the pre- and posttests included 4 items, only 3 items were used in this analysis. One item was poorly worded

and was discarded.) The improvement in knowledge about the tests needed to confirm an HCV diagnosis was particularly dramatic (Table 6).

Key Elements

Value. A primary component of a successful educational program is a topic that is important to participants. Undoubtedly, intrinsic interest accounts for some attendance at the lunch-and-learn programs. As the evaluations indicated, the great majority of the attendees were attracted to the programs because they believed they were useful for their jobs. Presumably, physicians and nurses are motivated to learn about issues of concern to

Table 4. Clinic Staff Participating in the HCV Lunch-and-Learn Programs: Phases 1 and 2

Clinical Staff Positions	Phase 1	Phase 2	Total
Physician	55	95	150
Dentist	17	2	19
Physician assistant	1	4	5
Nurse practitioner	5	24	29
Registered nurse	100	116	216
Midwife	4	2	6
Medical assistant	11	55	66
Licensed practical nurse	91	197	288
Dental assistant	59	9	68
Surgical assistant	2	0	2
Laboratory technician	73	7	80
X-ray/ultrasound/electroencephalogram technician	30	12	42
Pharmacy	25	1	26
Clerical	94	1	95
Administration	18	3	21
Other/not indicated	12	6	18
Total	597	534	1131

their patients, including issues that are “hot” topics in the news. It is also possible that healthcare workers have a personal interest in HCV since they are sometimes exposed to blood and blood products, a risk factor for HCV.

However, general interest in a topic is only one reason why busy health professionals are willing to attend an educational program. There should also be value in a specific program. These lunch-and-learn programs received consistently high scores in the participant evaluations. Since the programs were offered more than once in many of the clinics, word of mouth may have enhanced attendance. The pre- and posttests also indicated an improvement in knowledge. Thus, attendees received some measurable value from their investment—namely, new information and insight.

Incentives. Program convenience was also a factor in recruitment. Participants could use their lunch hours to learn while fulfilling their professional educational requirements. In addition, the credits and lunch were free. We did not compare the success rates of programs with and without these perks.

Repeated Exposure. The protocol for this educational initiative offered multiple opportunities for learning within a compressed period of time. Almost every contact—memo, letter, or meeting—was accompanied by information on HCV. Because people have different learning styles, reinforcement through both written and oral communication can be especially useful.

The design of our multistage process was based on learning theory and applications from marketing. The repetition of the messages about HCV served as reinforcement.⁸⁻¹⁰ At the same time, the repeated reminders about the education program were intended to improve the response/participation rate.¹¹

Stakeholder Involvement. The educational initiative was integrated with the HMO and

Table 5. HCV Lunch-and-Learn Program Evaluations: Percent Rating Program as Good to Excellent in Phases 1 and 2*

	Percent Rating Program Good to Excellent	
	Phase 1 (n = 546)	Phase 2 (n = 447)
Rate overall program	98	93
Topic relates to your job	93	89
Discussed risk factors	99	98
Discussed side effects of treatments	94	88
Discussed precautions	86	86
Speaker effectiveness	99	96
Speaker knowledge	99	99

*Evaluation forms were completed by 91% and 84% of attendees in phases 1 and 2, respectively.

Table 6. Knowledge Improvement Outcomes of the Pre- and Posttests*

	Percent With Correct Response	
	Pretest	Posttest
Tests needed to confirm diagnosis	25	87
Adverse side effects of treatment	66	91
Evaluating treatment response	66	89
Percent with correct responses on all 3 items	13	72

*One item was poorly worded and was discarded in the analysis.

clinic culture in a variety of ways. The development team represented a broad spectrum of constituencies in primary care. Medical leaders in primary care at the HMO provided sponsorship. Perhaps most importantly, there were champions in all clinics—including clinic managers, medical chiefs, and/or lead nurses—who made sure the programs were integrated with clinic schedules and needs.

A Well-Organized Implementation Plan. None of this would have been sufficient without a strong organizational plan. We developed a template that included 9 content areas, as shown in Table 7.

Limitations and Barriers

The educational initiative had several limitations. Although the program reached 150 physicians and almost 1000 other medical professionals, this represented a subset of all clinicians that serve HMO enrollees. Thus, the coverage of the HMO community, albeit extensive, was not exhaustive. In addition, the educational content was limited by the fact that each program lasted only 1 hour.

The impact of the program on actual provider behavior was undetermined. Although we found substantial knowledge improvement, an immediate posttest does not address knowledge retention. Written reference materials were given to all participants to help improve knowledge retention. These materials included detailed current diagnostic and treatment information. Our hope was that, even if providers forgot specific information, they would recall key issues and would have access to useful information.

An important change from phase 1 to phase 2 was the inclusion of affiliate as well as staff clinics. Although the turnout at the affiliate clinics was very positive, outreach to these clinics was more difficult. Overall, we invited the 12 largest staff clinics, and all participated. In contrast, we solicited 9 affiliate clinics, each with at least 6000 HMO enrollees, during phase 2 and 5 accepted the invitation by the

cut-off date. One additional affiliate site expressed interest but arrangements were not finalized by the deadline. At some of the other affiliate clinics, clinic managers delegated the project to clerical staff, and there were no responses to repeated attempts at contact. We believe that staff clinics were more accessible because the project coordinator had established relationships at many of these clinics. In addition, the project had a tight time window and limited resources. Still, we successfully implemented educational programs in over half the affiliate clinics, and most requested multiple sessions. Overall, 10 lunch-and-learn programs were held in these 5 affiliate clinics.

Despite the evident popularity of the lunch-and-learn programs in the clinics, response to the initiative was not universally positive within the HMO. In particular, some medical specialists on staff at the HMO objected to sponsorship by a pharmaceutical company.

Discussion

Under the Hepatitis C Health Management Project, an extensive educational effort needed to be accomplished quickly. Although the 2 phases were

Table 7. Content Areas of the Organizational Plan Template

<ol style="list-style-type: none"> 1. Process for recruiting clinics, including the initial letters of invitation, follow-up contacts, and individual meetings 2. Method for securing continuing medical education and continuing education unit credits, with all necessary materials 3. Detailed and coordinated outline of program content, with accompanying slides 4. Scheduling system for matching speaker availability with clinic schedules 5. Series of preworkshop contacts, including memo, postcard, poster, and letters 6. Well-developed packet of reference information 7. Evaluation plan covering satisfaction with program content and knowledge retention 8. Coordination checklist to cover all details in a consistent way (eg, arranging for facilities and equipment and ordering the appropriate quantity of box lunches) 9. Checklist for presentations, so all materials would be conveyed to each session
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almost a year apart, the 34 sessions were offered within a 6-month period—about 3 months for each phase—with time between phases for planning, evaluation, and research.

This initiative can serve as a model for HMOs to provide educational programs to professional healthcare staff about important public health topics. Nearly one third of the lunch-and-learn programs were given in affiliate clinics, where the relationship with the HMO was more distant. In both the staff and affiliate clinics, the programs were well attended, smoothly organized, and enthusiastically received. The project succeeded in reaching over 1000 healthcare professionals, the educational programs received exceptionally high ratings, and the pre- and posttests documented significant improvement in knowledge about hepatitis C.

Perhaps the most valuable lesson we learned was the importance of an effective implementation plan, which made it possible to manage an extended series of programs with consistent quality. We believe the educational effort was successful primarily because of its exceptional level of organization.

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