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Due to the labour disruption during March and April, the January and February 2002 statistics, and the 2001 4th Quarter Report will be published in the next issue of PHERO.

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The Ontario Ministry of Health and Long-Term Care AIDS & Sexual Health Infoline 2000 Annual Report

The Ontario Ministry of Health and Long-Term Care AIDS & Sexual Health Infoline has been operating in Toronto and Ottawa since 1987. The infoline offers free, anonymous counseling services, information and community referrals to the public. It is a source of reliable, confidential information for people who have questions regarding a wide range of topics around HIV/AIDS transmission, testing, sexually transmitted infections, and sexual practices. This report is a summary of four biannual reports written by Health Information, Toronto Public Health.^{1,2,3,4}

Between 1 January and 31 December 2000, the Toronto infoline received approximately 25,280 calls. Data collection was undertaken every 8th day and resulted in detailed information collected on 1,818 calls. During the same time period, the Ottawa infoline received approximately 6,840 calls and data were collected every 5th day for a total of 1,364 calls. This analysis is based on the detailed data collection from a total of 8,204 calls that were received by both Toronto and Ottawa infolines combined.

Mailing Label Goes Here

The Toronto infoline received more male callers (56%) than female callers (44%) callers, whereas the Ottawa infoline had more female callers (61%) than male callers (39%). Female callers were slightly younger than male callers for both infolines. The vast majority of calls were from the general public with professionals representing only 1% of callers in Toronto and 9% of callers in Ottawa. The duration of each call was on average shorter in Ottawa (75% were <5 min) compared to Toronto (50% were 5-10 min). The disposition of calls was similar in both cities. The majority of calls ended with either information being given (74% Toronto, 88% Ottawa) or a referral (21% Toronto, 8% Ottawa).

Callers learned of the infoline through a variety of sources, most commonly the telephone book (40% Toronto, 35% Ottawa). Toronto callers identified more diverse sources by which they heard about the infoline (friend, TV, radio, newspaper, pamphlet) compared to Ottawa callers (friend, pamphlet). Referral from a health care provider varied dramatically between the two cities. In Ottawa, 31% of callers had heard about the infoline from a health care provider compared to only 7% in Toronto. The most common language of communication was English, accounting for 92% of calls in Toronto and 71% of calls in Ottawa. The second most frequently used languages were Chinese (6%) in Toronto and French (23%) in Ottawa. In order to meet the needs of a multicultural population, the infoline can provide services in twenty different languages.

The majority of infoline callers self-identified as heterosexual. In a large proportion (30-50%) of the calls, sexual orientation was not relevant or not reported. Of the calls where sexual orientation is known, almost all female callers were heterosexual (95% in Toronto, 98% in Ottawa).

There were more male homosexual (23%) and bisexual (8%) callers in Toronto compared to Ottawa (11% and 0% respectively). A very small proportion of males (1%) and females (2%) in both cities combined reported that they were not sexually active.

HIV status was either not relevant or not reported in 63% of calls in Toronto and 84% of calls in Ottawa. In Toronto 8% of males (n=82) and 6% of females (n=44) were HIV negative, 1% of males (n=10) and females (n=4) were HIV positive, and only 2 males and 1 female had an AIDS diagnosis. In Ottawa 1% of both males (n=4) and females (n=8) were HIV negative, 2% (n=8) of males and <1% of females (n=4) were HIV positive, and only 1 female had an AIDS diagnosis.

A variety of risk factors and transmission concerns were addressed during the year. The most common risk factor that callers wanted to discuss was unprotected sex or condom failure, with approximately equal proportions of male and female callers requesting information about this topic. This risk factor accounted for 33% of calls in Toronto and 23% of calls in Ottawa. Interestingly, the second most common issue discussed was sexual contact when protection was used, representing 15% of calls in Toronto and 3% of calls in Ottawa. Many other risk factors were addressed including needle sharing, occupational exposure, receiving blood products and maternal child transmission. Each of these topics represented less than 1% of all calls (1-12 calls) in both Toronto and Ottawa.

The vast majority of callers wanted to discuss vaginal transmission of HIV/AIDS (Toronto 34%, Ottawa 37%). HIV transmission from oral sex, kissing, casual contact and anal sex were other common concerns discussed with callers. The top three concerns related to HIV testing were pre-test counseling, testing options and incubation/seroconversion time frames. Concerns related to HIV/AIDS infection included symptoms, disease progression and treatment. All of these concerns were similarly expressed by males and females and comparable between Toronto and Ottawa.

Safer sex issues identified by callers included condom and spermicide use, other safer sex activities, and behaviour change. Calls in Ottawa focused on condom/spermicide use, whereas calls in Toronto covered a broader range of topics including female condoms, dental dams and behavior changes. Sexually transmitted infections were the most commonly reported sexuality concern by both males and females in both Toronto (44%) and Ottawa (33%). Birth control was the second most commonly reported topic (Toronto 14%, Ottawa 15%). Other topics related to sexuality included: relationships, abortion, pregnancy, assault/incest/rape and sexual orientation.

Other concerns, representing 1% or less of callers to both infolines and not directly related to HIV/AIDS or sexuality included needle issues, legal/human rights and housing/finance issues.

AIDS has been a reportable disease in Ontario since 1983 and the Ministry-funded AIDS & Sexual Health Infoline has been providing information since March 1987. Although we have now experienced this epidemic for over 20 years and have provided education/information to school children and adults in the province for many years,

it appears there remains an ongoing need for anonymous information about HIV/AIDS. This need continues to be filled by the infoline and its professional staff.

The most significant change over the years has been the movement away from general information about the disease to providing information on services needed to address the specific needs of the caller. The anonymous nature of this service is one of its strengths, allowing individuals to discuss personal issues in confidence.



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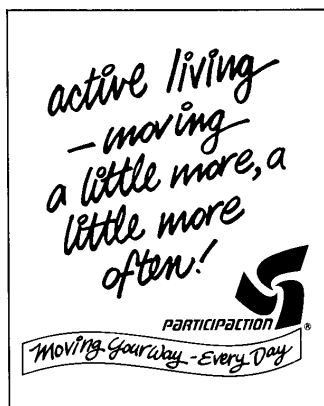
REFERENCES

¹Toronto Public Health (2001) "Toronto AIDS & Sexual Health Information Hotline six-month report: January - June 2000". Prepared for Ontario Ministry of Health and Long-Term Care.

²Toronto Public Health (2001) "Toronto AIDS & Sexual Health Information Hotline six-month report: July - December 2000". Prepared for Ontario Ministry of Health and Long-Term Care.

³Toronto Public Health (2001) "Ottawa AIDS & Sexual Health Information Hotline six-month report: January - June". Prepared for Ontario Ministry of Health and Long-Term Care.

⁴Toronto Public Health (2001) "Ottawa AIDS & Sexual Health Information Hotline six-month report: July B December 2000". Prepared for Ontario Ministry of Health and Long-Term Care.



Epidemiology of Hepatitis A in Ontario, 1992-2000

Introduction

Hepatitis A is a viral infection of the liver. It is usually transmitted via fecal-oral routes directly from one person to another through close contact or sexual contact with an infected person. It can also be transmitted indirectly by consuming contaminated food or water and through intravenous drug use.¹ Travel to countries where hepatitis A is endemic increases the risk of both direct and indirect transmission.²

Several populations have been identified as being at increased risk for hepatitis A. These populations include residents of communities with high rates of infection, children and staff of day-care facilities, residents and staff of long-term care facilities, injection drug users (IDU), men who have sex with other men (MSM), and international travellers.³ Hepatitis A outbreaks have been reported among several of these populations in Ontario. Descriptions of the outbreak investigations have been published elsewhere.^{4,5,6,7}

This report will describe the epidemiology of hepatitis A in Ontario from 1 January 1992 to 31 December 2000.

Methods

Health units in Ontario are required to report every case of hepatitis A to the Ministry of Health and Long-Term Care through the Reportable Disease Information System (RDIS). For this analysis, hepatitis A cases with episode dates between 1 January 1992 and 31 December 2000 were extracted from RDIS. These data were analyzed using SPSS (version 10.1). Additional outbreak data were extracted from the RDIS outbreak module for the same time period. The outbreak module is a separate reporting system within RDIS.

Incidence rates were calculated by health unit and by region using population estimates obtained from Statistics Canada for 1992, 1994, 1996, 1998, 1999, and 2000.⁸ For ease of comparison, prior to 1998, the cities that became the amalgamated City of Toronto were combined and rates were calculated for the amalgamated city.

Age-specific rates were calculated for all years and all health units combined using the nearest population estimate (± 2 years). Age-specific population estimates for Ontario were obtained from Statistics Canada for 1991, 1995, 1996, 1998, and 1999.⁹

Definitions

Health units can identify one of six categories to indicate the source of the hepatitis A infection. These categories are food, water, person-to-person, sexual contact, other and unknown. Several existing RDIS variables were combined to create two new variables, “sexually transmitted” and “travel-associated”. A case was considered sexually transmitted if the RDIS database identified the source of infection as being “sexually transmitted”, or “person-to-person” and “other/unknown” with risk factors “sexual contact likely” or “sex contact of a case”. A case was considered travel-associated if “travel/endemic” or “vacationing” were included as risk factors and if the destination of travel was outside of Ontario. Cases were considered to be part of an outbreak if they were in the RDIS outbreak module or listed in RDIS case-by-case reports as being “outbreak associated”.

Results

The mean number of cases of hepatitis A reported each year in Ontario was 422 (range 152-615). The largest number of cases was reported in 1996. The annual number of cases and incidence of hepatitis A in Ontario during the study period is shown in Figure 1. The 30-39 year age group had the largest number of cases (Figure 2). There was a small increase in the number of cases reported in August, September and October each year (Figure 3).

Overall, males accounted for 60% of the reported cases, ranging from 50% to 70% of cases each year. There were more male cases than female cases each year except in 1994 and 2000 when there were approximately equal numbers of male and female cases. Figure 4 shows the number of cases by year and sex during the study period.

Of the reported hepatitis A cases, 28% (1,061/3,814) had information pertaining to hospitalization. Of these, 30% (320/1,061) required hospitalization, 68% (724/1,061) did not, and 2% (17/1,061) were unknown. Of the 320 cases that were hospitalized, 90% were treated in hospital and 10% were treated as outpatients. Each year there was an average of 32 inpatients (range 16-50) and 4 outpatients (range 1-7) reported.

There were a total of 10 reported deaths from hepatitis A during the study period. On average, there was one death each year (range 0-3). The mean age of the cases who died was 68 years

(median 75 years). Deaths were equally distributed among male and female cases and there were no deaths among persons under 30 years of age. The average case-fatality rate for this period was 0.37% (range 0-1.97%).

There were 16 outbreaks of hepatitis A and 158 cases related to these outbreaks reported in the RDIS outbreak module during the study period. Outbreaks occurred in most regions of the province and in the following settings: daycare centers, isolated communities, and a correctional facility. There were between 0 and 4 outbreaks reported each year with an average of 10 cases in each outbreak (range 2-67 cases). Eighty-eight per cent of case-by-case reports in RDIS had complete information for the “outbreak associated” variable. Two hundred and six of these cases (5%) were related to an outbreak; 121 were male and 85 were female.

Of all the cases reported between 1992-2000, 49% (1,878/3,814) had unknown and 13% (483/3,814) had missing “source of infection” data. Person-to-person contact and food were the most commonly identified “sources of infection”, accounting for 17% (662/3,814) and 12% (466/3,814) of all cases respectively. Water accounted for 4% (147/3,814) of cases with an average of 16 water transmitted cases each year (range 9-29). Five per cent (178/3,814) of cases did not fall into any of the categories and were reported as having “other” sources of infection.

Travel was found to be a risk factor for hepatitis A infection in 21% (787/3,814) of the cases with an average of 87 cases each year (range 68-131). The sources of infection for “travel-associated” cases were as follows: 27% (211/787) food, 10% (82/787) water, 3% (26/787) person-

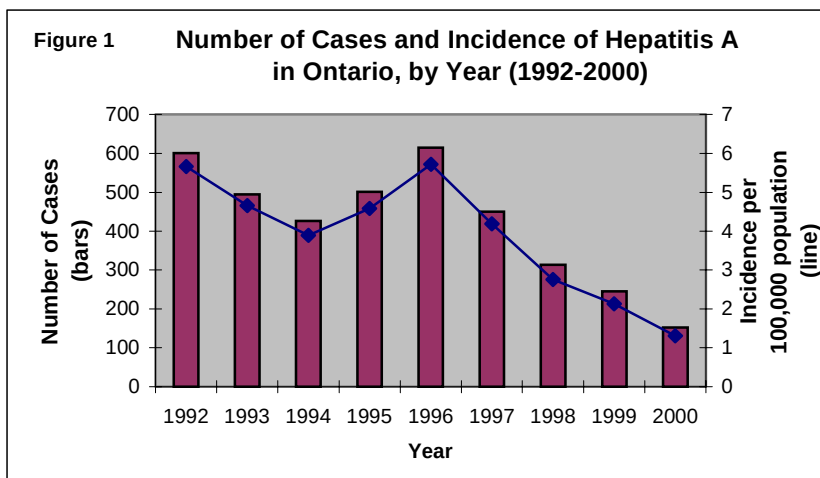


Figure 2

Mean Annual Number of Cases & Incidence of Hepatitis A in Ontario, by Age Group (1992-2000)

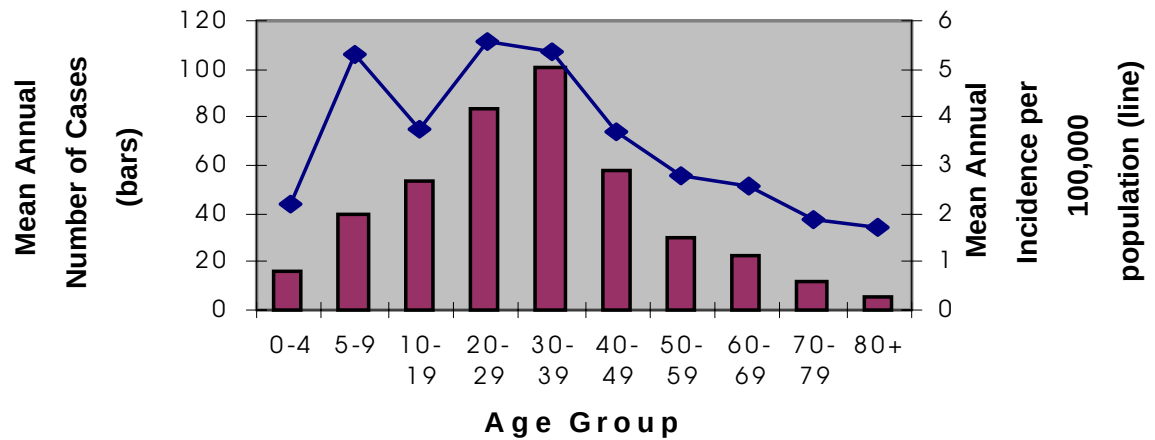


Figure 3

Mean Annual Number of Hepatitis A Cases in Ontario, by Month (1992-2000)

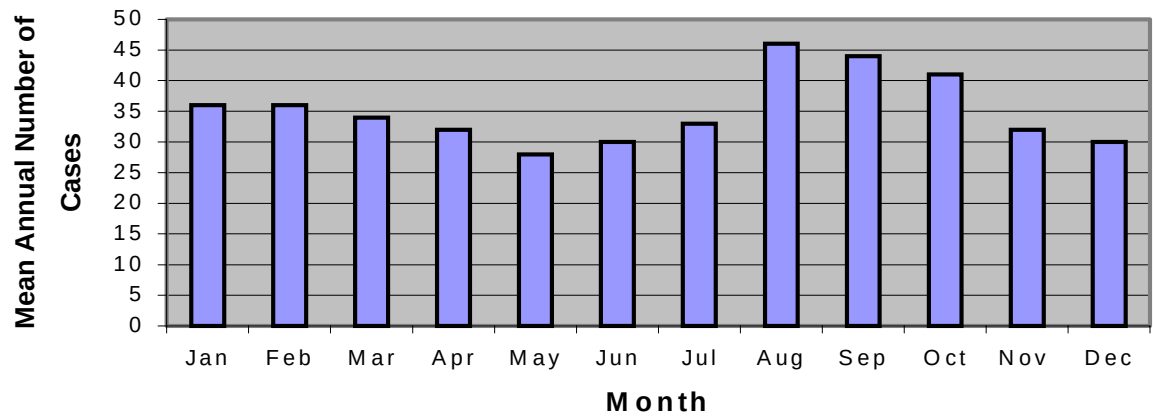
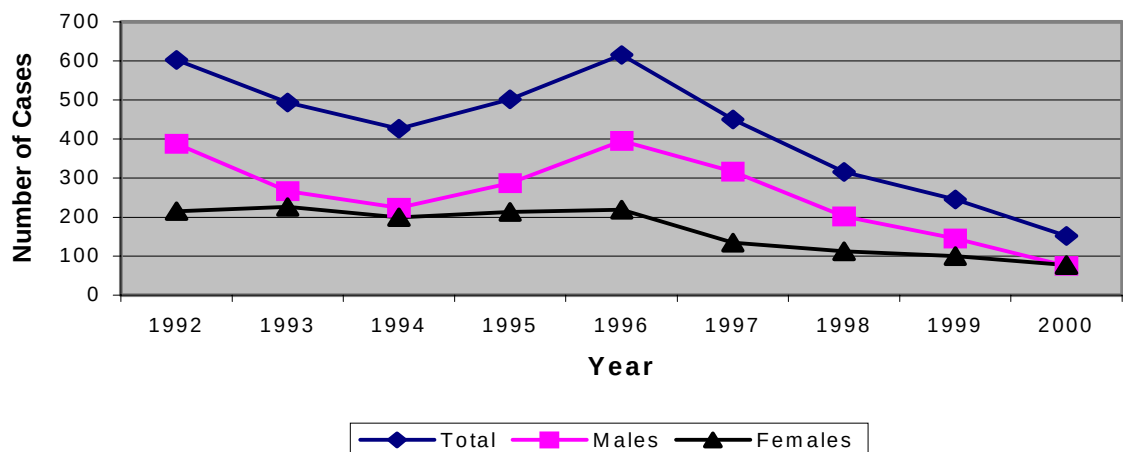


Figure 4

Hepatitis A Cases by Year and Sex (1992-2000)



to-person contact, and 2% (14/787) sexually transmitted. The source of infection was unknown for 33% (262/3,787), missing for 12% (95/787) and 12% (97/787) were indicated as having other sources of infection. There were more male than female “travel-associated” cases each year. Overall, males accounted for 56% of “travel-associated” cases.

Sexual contact was identified as the mode of transmission for 6% (244/3,814) of all reported hepatitis A cases. Ninety-two per cent of sexually transmitted cases were male. The proportion of sexually transmitted cases varied from year to year (between 1% and 13% of cases each year), with the largest number having occurred in 1997.

Ninety-six per cent of sexually transmitted cases that occurred among males were cases between the ages of 20-49 years. Seventy-four per cent of female cases were between the ages of 20-49 years, 16% between 10-19 years and 11% between 50-69 years. There were no sexually transmitted cases among persons under 17 years or over 65 years of age.

Discussion

As with all passive disease surveillance systems, underreporting of cases is possible.¹⁰ There were fewer reported cases among younger age groups (<10 years) and older groups (60+ years) compared with middle age groups. Childhood cases of hepatitis A are often asymptomatic and go unrecognized by parents and are not diagnosed by health care providers.¹¹ As a result, childhood cases are often not reported. Studies have found that immunity to hepatitis A increases with age and that up to 80% of Canadian adults 60 years of age and older are immune.¹² The increased proportion of older adults with immunity may explain the lower incidence in this population.

Overall there has been a decreasing trend in the number of hepatitis A cases in Ontario during the period of study. This decrease in the number of cases has been noted across Canada.¹³ In Ontario, this trend was interrupted by an increase in the number of male cases between 1995 and 1997. The overall trend is strongly affected by the number of male cases. There were a large number of male cases in 1992. The number then decreased to equal the number of female cases in 1994 and subsequently increased markedly in 1996. This increase coincides with outbreaks of hepatitis A among MSM that same year. Over the next four years the number of male cases declined steadily and was equal to the number of female cases in 2000. Although there has

been a decreasing trend in both males and females, analysis of long-term surveillance data from the U.S. A. indicate that hepatitis A incidence peaks cyclically on average every 10 years.¹⁴ It is possible that the decreasing trend seen in Ontario is part of a natural cycle and there may be an increase in the number of cases over the next few years.

Although there are many more male than female cases of hepatitis A in Ontario, there is no evidence to suggest that males are more susceptible to hepatitis than females.¹⁵ It is thought that exposure to different risk factors may explain the increased incidence among males. During the study period males were much more likely to have sexual contact identified as the mode of transmission than females. In 1996, an outbreak occurred among MSM. Of the 68 cases that were identified as being sexually transmitted that year, 94% were male.

The proportion of cases that were hospitalized was at least 7%, however the proportion could be as high as 30%. The large proportion of missing data (72%) in this variable made it difficult to determine the true proportion of hospitalized cases. One might hypothesize that it is more likely that the variable would be completed if hospitalization was required than if it was not. When the denominator of the calculation included only cases where the “hospitalization” variable was completed, it resulted in 30% of cases being hospitalized, which is likely an overestimate. However, including cases with missing information for this variable in the denominator resulted in 7% of cases being hospitalized. The true proportion of hospitalized cases lies somewhere between these two estimates but cannot be accurately determined without improvements in data collection and reporting of the “hospitalization” variable.

It is likely that both RDIS data sources underestimate the true number of outbreak-associated hepatitis A cases in Ontario. Five per cent of case-by-case reports (206 cases) were associated with an outbreak compared to 158 cases reported in the outbreak module. Underestimation of outbreak-associated case-by-case reports is likely due to underreporting and possibly due to cases that are not identified as being outbreak-associated. Previous reports have noted that outbreak module reporting underestimates the number of enteric disease outbreaks that have occurred.^{16,17} The outbreak module is not as frequently completed at the health unit level compared to the case-by-case reports and probably over represents larger outbreaks and under reports smaller outbreaks. It is likely that the case-by-case reports of outbreak-associated cases

are more accurate than the outbreak module as the data source is more accurately completed and has a larger number of reported cases.

Travel outside of Ontario accounted for a substantial proportion (21%, 787 cases) of hepatitis A cases reported in the province. When comparing the source of hepatitis infections among travellers to non-travellers, there were more food (27% vs. 9%) and water (12% vs. 3%) related cases among those who had travelled compared to those who had not. However there were fewer cases of person-to-person (4% vs. 20%) and sexually transmitted cases (2% vs. 9%) among travellers versus non-travellers. The age distribution was similar among both groups with the largest proportion of cases falling in the 20-29 and 30-39 year old age groups.

The public health impact of the large proportion of hepatitis A cases among travellers is difficult to assess in terms of education, health promotion and awareness. Data pertaining to the number of Ontario residents who travel outside of the province each year are not known. It is likely that the 787 cases reported are a small proportion of Ontario residents who have travelled outside the province during the study period.

The number of sexually transmitted cases among men peaked in 1996 at 64 cases and has been decreasing since that time. It is possible that the decrease in the number of male cases may be a result of increasing awareness in the gay community and perhaps an increase in the number of MSM choosing to be vaccinated. However, it is unknown if significant numbers of MSM purchased vaccine when outbreaks were recognized in this population.

Conclusion

During the study period, there has been a decrease in the number of hepatitis A cases in Ontario from 601 cases in 1992 to 152 cases in 2000. The 152 cases reported in 2000 is the smallest number of reported hepatitis A cases since 1989. Recognized outbreaks among MSM were mainly responsible for the periodic increases of hepatitis A cases seen in 1992 and 1996. A substantial proportion (21%) of hepatitis A cases in Ontario appear to have been acquired while travelling outside of Canada and the potential exists to prevent these cases through vaccination.

Despite the decreasing trend, hepatitis A continues to be an important cause of morbidity in Ontario and continued public health action should be taken to reduce the transmission of this vaccine preventable disease. □

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REFERENCES

- ¹ Chin, J. (Ed.) (2000). Control of communicable diseases manual. 17th ed. American Public Health Association: Washington D.C.
- ² Ibid.
- ³ Wu, J., Zou, S. & Giulivi, A. (2001). Viral hepatitis and emerging bloodborne pathogens in Canada: Hepatitis A and its control. *Canada Communicable Diseases Report*. Vol. 27, S3.
- ⁴ Hockin, J., Isaacs, S., Kittle, D., Brimmer, G., Bailey, N., & Tamblyn, S. (1997). Hepatitis A outbreak in a socially-contained religious community in rural southern Ontario. *Canada Communicable Disease Report*. Vol. 23, No. 21.
- ⁵ Bell, B., Snider, N., Bailey, N., & Egan, C. (1992). Hepatitis A outbreak: Waterloo Region. *Public Health & Epidemiology Report Ontario*. Vol. 3, No. 22, pp.380-83.
- ⁶ Levy, I. (1992). Hepatitis A among men in a Canadian correctional facility. *Public Health & Epidemiology Report Ontario*. Vol. 3, No. 22, pp.383-86.
- ⁷ Yuan, L. (1992). Hepatitis A outbreak among men who engage in homosexual behaviour-City of Toronto 1991. *Public Health & Epidemiology Report Ontario*. Vol. 3, No. 4, pp.53-6.
- ⁸ Statistics Canada. Census Population Data, Ontario, 1991& 1996.
- ⁹ Ibid.
- ¹⁰ Lilienfeld, D. & Stolley, P. (1994). Foundation of Epidemiology 3rd ed. "Morbidity Statistics", p.104-5.
- ¹¹ Wu, J., Zou, S. & Giulivi, A. (2001). Current hepatitis A status in Canada. *Canadian Journal of Infectious Diseases*. Vol. 12, No. 6, pp.341-4.
- ¹² Kocupichyk, F., Lightfoot, P., Stout, I., & Devine, R. (1995). Seroprevalence of hepatitis A antibodies in travellers at the Edmonton travellers' health clinic. *Canada Communicable Disease Report*. Vol. 21, No. 8, pp.65-76.
- ¹³ Ibid.
- ¹⁴ Shapiro, C., Coleman, P., McQuillan, G. et.al. (1992). Epidemiology of hepatitis A: seroepidemiology and risk groups in the USA. *Vaccine*. Vol. 10: S59-62.

¹⁵ Barros, H., Oliveiri, F. & Miranda, H. (1999). A survey on hepatitis A in Portuguese children and adolescents. *J Viral Hepat.* Vol.6, No. 3, pp. 249-53.

¹⁶ Middleton, D. (1999). Reported enteric disease outbreaks in Ontario, 1994-1998. *Public Health & Epidemiology Report Ontario.* Vol. 10, No. 8, pp.136-43.

¹⁷ Alexander, P. & Middleton, D. (2001). Reported enteric outbreaks in Ontario, 1999. *Public Health & Epidemiology Report Ontario.* Vol. 12, No. 5, pp.183-8.



Travel-Associated *Salmonella* Enteritidis in Ontario, 2001

Introduction

A significant burden of enteric illness in Ontario has been linked to foreign travel. Ontario residents travelling outside of the province have been associated with acquiring an enteric illness in 1) investigations of increased reports of certain enteric pathogens and 2) during the analysis of routinely reported Reportable Diseases. In 1998, a substantial number of cases of enteric disease reported in Ontario were linked to travel outside of Ontario.¹ In 1999, at least 12% of the burden of selected reportable enteric diseases in Ontario were attributed to travel.² From January to April 2000, travel-associated enteric illness was reported to account for an increase in the number of *Salmonella* Enteritidis (SE) cases in Canada. Other enteric illnesses were also determined to be travel-associated in this study.³ Similarly, a study of cyclosporiasis cases in 2000 and 2001 also identified travel to an endemic country as the main risk factor for disease.^{4,5}

This article describes the findings from an investigation of travel-associated SE cases identified in the winter of 2001.

Background

In December 2000, the Central Public Health Laboratory identified an increase in SE cases above the expected number of cases for that time of year. Forty-eight cases of SE were identified and the expected number of cases was approximately 33. An investigation attributed most of the increase in SE cases to phage type (PT) 30. The outbreak of SE PT30 continued until April 2001 when whole, natural almonds (raw, shell-less almonds) were identified as the contaminated item causing the illnesses. Although, the investigation of SE PT30 cases focused primarily on the identification of the source of the outbreak, the investigation required all SE cases be investigated. As a result, a large number of travel-associated SE cases were identified. These travel-associated SE non-PT30 cases are the focus of this paper.

Methods

Beginning January 1, 2001 and continuing throughout the year 2001, all SE isolates identified at the Central Public Health Laboratory were sent to the National Laboratory for Enteric Pathogens in Winnipeg for phage typing.

The Public Health Branch distributed a questionnaire to health unit staff that was to be administered to all cases of SE to determine the source of the SE PT30 cases. Because there is a time delay between identifying an SE isolate and identifying the phage type of that isolate, questionnaires were administered to all SE cases in order to reduce recall bias even if the phage typing results were not yet available. As a result, an analysis of SE non-PT30 cases could be conducted as well.

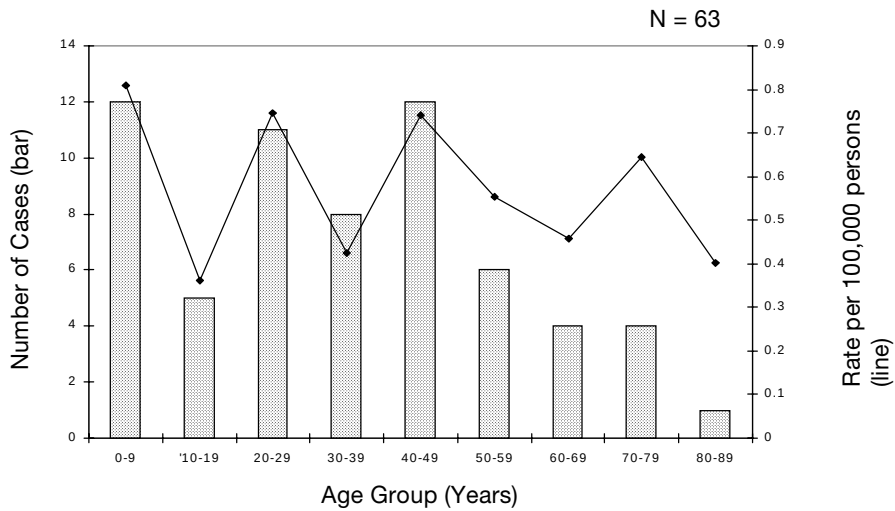
The incubation period for non-typhoidal Salmonella cases is 6 hours to 10 days; usually 6-48 hours. ⁶ Cases were asked if they travelled outside of Canada in the seven days prior to the onset of their illness, the country visited, the destination in the country visited, and the date of departure and return. Cases were considered to be “travel-associated” if travel outside of Canada was identified during the seven-day period prior to illness. The travel destination was categorized as “travel” if travel was indicated on the questionnaire in the absence of the travel destination.

All SE non-PT30 cases identified during the period January 1 to March 31, 2001 were considered for analysis. Statistics Canada 2001 population data were used to calculate age-group specific rates. In addition, SE PT1 cases were considered in a separate analysis for the period January 1 to April 30, 2001.

Figure 1. *S. Enteritidis* Cases by Phage Type, January 1 to March 31, 2001.

Phage Type	Number of Cases
4	85
30	60
1	16
8	11
13	10
13a	6
1b	6
6a	6
4a	5
911	4
1a	3
Other	14
Unknown	2
Total	228

Figure 2. Travel-Associated *S. Enteritidis* Cases, by Age-Group, January to March, 2001



Results

Between January 1, 2001 and March 31, 2001, 228 cases of SE were identified. PT4 was the most common phage type identified during this period (Figure 1).

Of the 228 cases, questionnaires were completed for 144 (63%) cases. Sixty of these completed questionnaires were for PT30 cases. Of the remaining 84 questionnaires, 64 (76%) were travel-associated, 16 (19%) were not travel-associated, and 4 (5%) did not indicate the travel status.

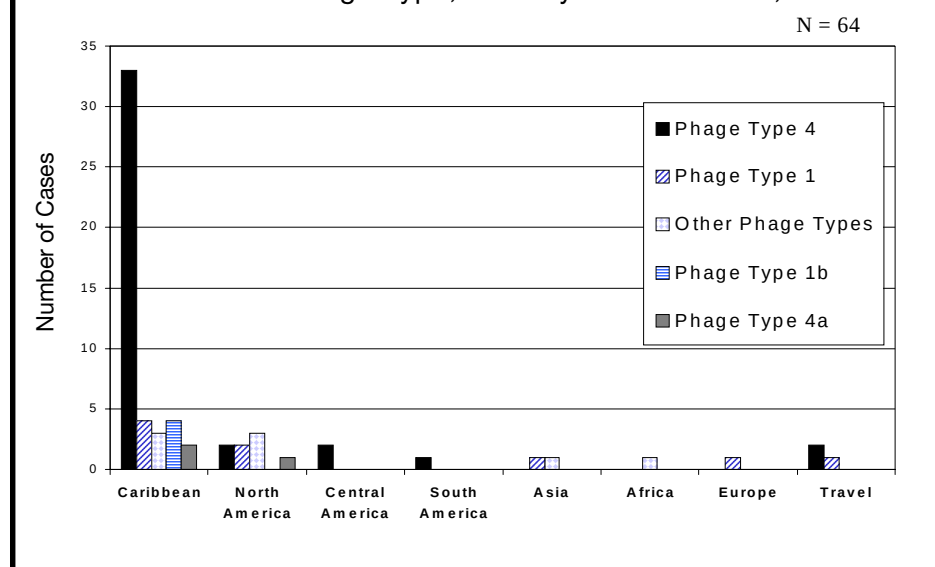
The dates of onset for the 64 travel-associated cases ranged from December 3, 2000 to March 25, 2001. Thirty-six (56%) of the 64 travel-associated cases were female. The distribution of cases by age-group and age-group rates are shown in Figure 2.

The Caribbean was the predominant travel destination comprising 52% of the 64 travel-associated cases. The predominant phage types for the travel-associated cases were PT1, PT1b, PT4, and PT4a (Figure 3). Jamaica was the travel destination for all four PT1b cases. The Dominican Republic was the destination for 28 of the 40 (70%) PT4 cases.

Post Study Period Update

Sixteen SE PT1 cases were identified during the study period (January 1, 2001 to March 31, 2001) for which questionnaires were completed for 10 of these cases. In addition, 28 additional cases of PT1 were identified in April and questionnaires were completed for all of these

Figure 3. Travel-Associated *S. Enteritidis* Cases by Travel Destination and Phage Type, January 1 to March 31, 2001



cases. Thirty-one (82%) of the 38 SE PT1 cases for which questionnaires were completed reported a travel association. Travel within Ontario was reported by one case (3%), and one case (3%) reported no travel. Five of the 38 cases (13%) did not respond to this question.

Of the 31 travel-associated PT1 cases, 22 (71%) reported having travelled to the Dominican Republic prior to their onset of symptoms. Two cases (6%) reported travel to Portugal and one case (3%) travelled to Spain. Travel was reported in one case to each of Mexico, the Philippines, Thailand, and the United States, respectively. One case was a flight attendant who was unsure of which travel destination was the source of illness.

Discussion

The increase in the number of SE cases identified in December 2000 was mainly attributed to a large number of SE PT4 cases. PT4 cases were investigated as by-product of the investigation of the SE PT30 investigation. The second largest attributable fraction of SE cases resulted from PT30. PT30 was a relatively rare phage type linked to whole, natural almonds in April, 2001. While phage typing of all SE isolates is not normally performed, as a result of the increase in SE cases, phage typing was initiated for all SE isolates arriving at the Central Public Health Laboratory beginning January 1, 2001 and continuing throughout 2001. This allowed for the investigation of the source of the non-PT30 SE cases.

Seventy-six per cent of the non-PT30 SE cases identified

between January 1 and March 31 2001, for which there was a questionnaire provided, were travel-associated.

The age distribution shown in Figure 2 was similar to the age distribution for travel-associated cases in 1999.² The smaller number of cases considered in the 2001 study resulted in more variability in the age-group rates, and thus interpretation of the age-group rates was difficult. While Ontario populations were used in the denominators to calculate the rates, it is recognized that the number of Ontario residents who travelled outside of Ontario would be a more meaningful number

to be used in the calculation of the rates.

The Caribbean was the predominant travel destination. This was not unexpected because of the annual migration of many Ontario residents to this area during the winter months.

Conclusion

This study described the findings for travel-associated cases of one enteric pathogen, SE non-PT30, from January 1 to March 31, 2001. The findings are consistent with findings from other studies, which demonstrate that travel-associated illness contributes significantly to the burden of enteric illness in Ontario. While the study concluded March 31, 2001 because the source of the SE PT30 cases was identified, travel-associated cases of SE likely continued to occur, as evidenced by the additional SE PT1s identified in April, 2001.

From a public health perspective, some effort can be made to help prevent the acquisition of an enteric illness through public education. Most travellers recognize the importance of safe food and water, however, certain precautions may be inadvertently overlooked, and travellers may assume that foods and beverages in selected settings are safe. From the Ontario public health perspective, the burden of illness resulting from transmission of these illnesses from returning individuals to other persons is difficult to determine. Nonetheless, this burden of illness is not attributable to poor public health practice in Ontario. As noted in another study, when increases in enteric diseases

are noted, it is important to quickly determine whether the cases are travel-associated, as opposed to a domestic source, which might require a more immediate response from appropriate agencies³

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REFERENCES

1. Middleton D. Descriptive Epidemiology of Enteric Disease due to Microbial Causes in Ontario: 1998. Public Health & Epidemiology Report: Ontario. 2000; 11(5):78-85.
2. Middleton D. Travel Associated Enteric Illness in Ontario. Public Health & Epidemiology Report: Ontario. 2001; 12(2):71-76.
3. The Division of Enteric, Foodborne and Waterborne Diseases, Bureau of Infectious Diseases, CIDPC, and the National Laboratory for Enteric Pathogens, Bureau of Microbiology, PPHB, Health Canada. Risk of Enteric Illness Associated with Travel: A Case Review of Gastroenteritis Among Canadian Travellers: January to April, 2000. Canada Communicable Disease Report. March 2001; 27-06.
4. Middleton D, Naus M. Cyclospora Case Surveillance in Ontario, 2000. Public Health & Epidemiology Report: Ontario. 2000; 11(10):227-229.
5. Middleton D, Naus M. Cyclospora Surveillance in Ontario, 2001. Public Health & Epidemiology Report: Ontario. 2001; 12(10):318-321.
6. Centres for Disease Control and Prevention. http://www.cdc.gov/ncidod/dbmd/outbreak/com_path/com_path.pdf (accessed on January 4, 2002).

Engaging Youth in Smoking Cessation:

A Model for Secondary School-based Tobacco Awareness and Education

Introduction

Although the smoking rate trend among students is beginning to show signs of declining, the current prevalence rate remains high. An estimated 216,200 Ontario students in grades 7 to OAC still smoke regularly and educators across Canada struggle to find the key to unlock the secret of youth smoking cessation. What is the magic formula to control this epidemic in our youth? It is easier to focus on what we do know than to speculate on what we don't. We know teenagers do not follow the stages of change the same as adults. They also do not have the same level of confidence as adults during their quit attempts and a failed quit attempt is not educational as much as dispiriting. We also know that group intervention programs have more success than self-help with youth¹.

According to the 2001 Ontario Student Drug Use Survey, 23.6% of students have smoked cigarettes in the past year compared to 29.2% in 1999 — the first such decline in a decade. Of those students who smoke in high school, over 90% will still be smoking 30 to 40 years from now². This is contrary to the popular student belief that they can quit whenever they want. In order to address these issues in their region, the Haldimand-Norfolk Health Unit formulated a plan for a secondary school-based tobacco awareness and educational program.

Program Components

The program was developed in three components: **Awareness Raising**, an **Educational Session**, and a **Follow-Up Session**, which will be discussed in further detail later in this document. The program was coordinated through a partnership between two health unit programs: Tobacco Use Prevention and Addiction Services. Addiction Services already had an Addiction Counsellor assigned to each of the nine Secondary Schools in the region, who facilitated the implementation of this program with the administration at each school.

Component 1 - Awareness Raising

Recruitment to any type of smoking cessation program is the biggest hurdle to overcome and is the principal indicator

of success¹⁴. The key tool in this program to engaging youth to think about their smoking behaviour was the Carbon Monoxide (CO) Monitor. A few days prior to the CO testing, posters were set up in strategic locations around the school advertising the time and location of the testing and on the day of the testing a morning announcement was made. Timing was found to be important and as such the CO Testing was completed during the students' lunch period(s). It was also discovered that completing the testing in the fall and winter months yielded more participation than in the spring as more students were inside the school during the colder months.

The location within the school to deliver this intervention was also an important factor. Where the program was physically delivered within the school varied from school to school. This program is most effective when you can reach the largest number of students, so completing the CO testing in a location that the students tend to congregate during lunch is important. Locations that have yielded the most success have been: cafeterias, main foyers and on one occasion, the facilitators set up in an annex just inside the doors to where the student smoking area was located.

Carbon monoxide testing is a non-invasive procedure that can be completed within minutes for each participating student. Students exhale into a plastic bag and pass it to the facilitator to connect it to the Carbon Monoxide Monitor to analyze the CO content (in parts per million). Smokers and non-smokers alike were tested to highlight the difference in CO levels between the two groups. Once the CO Level has been established, it is written on a slip of paper for each student describing the possible health effects of their reading. A lollipop is given to each student who participates,

both as a reward and as an alternative to smoking.

Normally, the CO Testing becomes an attraction for many students at one time, as they seem very interested in each other's readings. This interest allows a window of opportunity to encourage youth to think about cessation. Two educational displays were developed. The first display describes carbon monoxide: what produces it, how it affects the human body and a chart depicting the results from the carbon monoxide testing. The second display explains how smoking affects the body, the benefits of quitting and tips to a successful quit attempt.

Once a student has been identified as having an above-normal CO reading due to tobacco use, an educational session on health effects and cessation techniques is offered to the student.

Component 2 - Educational Session

From the number of students who participate in the CO testing, a smaller percentage signed up for the educational session. Having the session approved and set up beforehand by the school administration was helpful. It

has been the facilitators' experience that devoting an entire period to conducting this session was appropriate. The session was divided into the following topics:

- "Why Do You Smoke?" quiz
- Nicotine, what it is and why it keeps you smoking. Harmful substances in cigarette smoke
- Withdrawal symptoms, strategies to help you quit, nutrition concerns
- Handling your stress and anger
- Question period and/or discussion

Figure 1

School	School #1	School # 2	School #3	School #4	School #5	School #6	School #7	School #8	School #9
School Participation	6%	9%	5%	11%	9%	9%	4%	13%	2.8%
Date of CO testing	Oct. 25	Nov. 2	Nov. 14	Feb. 7	Feb. 21	April 26	April 30*	May 17	May 3*
# Through CO testing	84	78	49	72	51	74	28	90	19
# Signed up for workshop	13	22	6	8	3	18	7	16	11

* These days were sunny and warm.

Figure 2

Question	2000-2001	%
1. Since attending the workshop have you:	Quit smoking	0.0
	Cut down	60.0
	Attempted to quit	20.0
	None of the above- no change	14.3
2. Were the handouts you received at the workshop or group helpful?	Yes	65.7
	No	20.0
	Somewhat	20.0
3. What kind of help would you like to receive now?	Group counseling	68.6
	Individual counseling	14.3
	Other	31.4

Since the session runs for approximately 75 minutes, a mix of activities, group discussion and presentations by the facilitators was utilized in order to keep the interest level as high as possible.

Component 3 - Follow-up Session

The facilitators attempted to follow-up with each student either individually or in smaller groups in order to gauge the impact of the educational session on their smoking behaviour. A two-page questionnaire was administered. This feedback was also useful for program planning purposes, as the students were asked which educational resources were useful or helpful to them. The follow-up session was also useful in gauging the interest levels that students have for further smoking cessation counseling (either group or individual format).

Discussion

The results from the questionnaire were positive and pointed to the program being effective. As this was the third year of the program, students knew what to expect and remembered the testing from previous years. This helped attract students who wanted to see if their CO levels were better than their reading from previous years.

Some limitations of these results should be discussed. First, some of the students either checked more than one answer per question or didn't answer at all as illustrated by some results totaling more than or less than 100%. Second, one school did not have a follow-up session and two did not have a workshop. This would affect the percentages as the results are not an accurate reflection of all schools that participated.

As noted in the Educational Session, one of the components discussed in the workshop is various strategies for quitting smoking. One point we stressed in the workshop was choosing an appropriate quit date. We emphasized choosing a date that would not already be stressful or difficult to maintain. For example, we discussed not choosing a date during an exam period or just prior to a long weekend. As an alternative to a quit date we suggested changing the amount smoked or the times. This discussion may have affected the results for question one (Figure 2) as most of the students attended the workshop just before an exam period or a long weekend. Therefore, the results reflect that 60% of the workshop's participants cut down on their smoking and 20% attempted to quit.

Conclusion

The key components to successfully engage youth to consider the harmful effects of their smoking behaviour are as follows: (a) the Carbon Monoxide Monitor- without an interactive tool such as this monitor, there would invariably be less interest in the displays and educational session; (b) an interested individual within the school setting to coordinate and promote the program with the school's administration (i.e., a public health nurse, addictions counsellor, guidance counsellor, student's council representative or a physical education teacher); and (c) educational displays for use during the CO testing.

The program's organizers are very pleased with the results from implementing the secondary school-based tobacco awareness and educational program in the 2000-2001 school year. There are definite plans to offer this program

again over the following school year with some additions. As 68.4 % of the participants from the workshops wanted group counseling sessions to aid with their quit attempt, the plans for the following school year include group counseling sessions and to continue offering individual counseling through Addictions Services.

1. www.commhealth.ihpr.ubc.ca

Institute of Health Promotion Research. Youth Smoking Cessation in the School Setting. Lovato, C.Y & Shoveller, J.A.

2. Drug Use Among Ontario Students 1977-2001, Centre for Addiction and Mental Health, 2001.



SOURCES

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Communiqué Public Health Research, Education and Development Program



Middlesex London
Teaching Health Units

Binge Drinking Media Campaign: *Planning, Implementation and Evaluation*

Introduction

The Substance Abuse Prevention Network (Network) of Southwest and Central West Ontario, comprised of 16 health units, developed and implemented a binge drinking media campaign in 2000, targeting 19-24 year olds. The Network partnered with researchers from the Middlesex-London and the Hamilton Public Health Research, Education & Development (PHRED) Programs to conduct a process evaluation. This article provides an overview of the campaign, the evaluation, and future recommendations. The full evaluation report¹ is available on-line at www.healthunit.com under Reports and Research and at www.city.hamilton.on.ca/sphs.

Media Campaign

Binge Drinking in Young Adults: A Public Health Issue

Binge drinking, defined as having 5 or more drinks on a single occasion, is a significant public health issue, especially among 19-24 year olds. Sixty-seven percent of Canadian drinkers aged 20-24 years have engaged in binge drinking². Binge drinking activity increases among 20-24 year olds and then declines with age³. The Canadian Campus Survey indicates that students living in a university residence are more likely to report binge drinking than those living in non-university housing⁴. This high-risk drinking behaviour leads to alcohol poisoning, impaired judgement, injuries and death⁵. The Addiction Research Foundation reports that in Ontario in 1995, alcohol consumption resulted in

over 1,000 deaths due to alcohol poisoning, crashes, falls, drowning, choking on vomit, assault and suicide. Of these deaths, 5.1% were directly attributable to alcohol poisoning⁶.

Mandatory Programs & Network

Boards of health are mandated to provide at least one community-wide education campaign annually to address Injury Prevention and Substance Abuse Prevention⁷. Representatives of the Network worked together to plan and implement a coordinated regional campaign in part to save staff time and financial resources. A review of the literature indicated that there was a need to educate young adults about the risks of binge drinking including alcohol poisoning. However, no local media campaigns existed to address this health concern. The Network overcame many obstacles to deliver this campaign, such as minimal financial and human resources, and a large geographic area. Recognizing the need for evaluation expertise, the Network collaborated with the Middlesex-London and the Hamilton PHRED Programs.

Media Campaign Goals, Materials and Messages

Two goals were developed for the campaign: 1) to reduce the percentage of alcohol-related injuries and deaths among 19-24 year olds living in Central West and Southwest Ontario, and 2) to reduce the prevalence of binge drinking among young adults in this area.

The campaign and materials were selected to increase knowledge of:

- the risks associated with binge drinking, e.g., alcohol poisoning
- the number of drinks that constitutes binge drinking, and
- alternative behaviours to reduce binge drinking.

The standardized campaign consisted of the mass distribution of a poster, a postcard, and the placement of a paid radio advertisement and media releases. Members of the target audience in rural and urban settings pilot tested the campaign materials. Health unit staff participated in local community events to increase awareness about the dangers of binge drinking and sought opportunities for unpaid advertising, such as radio and television interviews.

The Network decided to use a “Chugging Can Kill” poster that was developed by FACE (<http://FACEproject.org>) a non-profit American organization. It was chosen because the message was clear and serious. However, information

obtained from pilot testing the poster indicated that the youth did not feel susceptible to the threat of death from binge drinking. Furthermore, the poster did not provide alternative actions for avoiding the threat. The norm referencing line, “Throwing up or passing out after drinking is an early sign of alcohol poisoning” was added to make the threat more concrete, personal and relevant. In addition, an efficacy message, “It’s your choice, drink less, slow down or take the night off” was also added. This message provided clear and simple alternatives to binge drinking.

The Network developed a brightly coloured postcard with a customized campaign message. Postcards are used in licensed establishments to advertise new bands, CD launches and special events. The postcards were designed to be a collectible item, so that the target audience would read and possess them longer. The campaign messages were also incorporated into a radio advertisement. Participating radio stations recorded the advertisement so that the DJ voice that was familiar to the target population could be utilized. Minimal changes were made to the postcard and radio advertisement to promote clarity following the pilot testing.

Media Campaign Implementation

The media campaign took place one week prior to and one week following the 2000 Victoria Day and Labour Day weekends. Typically young adults consume increased amounts of alcohol during these holidays. Five radio stations across Southwest and Central West Ontario played the radio advertisement during both purchased and some non-purchased airtime. Radio stations were selected based on demographic reach and were specifically chosen to target young adult males and to maximize geographic coverage. Network members and other health unit staff distributed posters and postcards to community locations such as bars, the beer stores, and campgrounds. Campaign materials were also distributed at community events and university orientation activities. To increase awareness of the campaign and to obtain further unpaid media coverage, the Network developed and provided each health unit with a media kit for local newspapers, radio and television stations.

The 16 health units of the Network contributed \$18,800.00 in total to the media campaign. These health units also dedicated staff time to the development, implementation and evaluation of the campaign. Furthermore, the PHRED Program contributed significant financial and staff resources by conducting a comprehensive process evaluation.

Process Evaluation

The process evaluation was designed to:

- identify the distribution pattern and types of media used by health units within the Network;
- estimate the proportion of the target audience that was exposed to the campaign;
- assess awareness of associated risks and how binge drinking is defined;
- examine knowledge, attitudes and beliefs about binge drinking and the campaign message, and
- determine whether or not any new partnerships emerged as a result of the campaign.

Because of the challenges of accessing the target population in a systematic way, across the large geographic area, a decision was made to obtain feedback from 19-24 year olds in post-secondary institutions using a web-based survey. The web-based survey was also used to recruit focus group participants. This survey was launched with the technical expertise of the Southwest Region Health Information Partnership (SRHIP). The 16 health units used two other data collection tools: 1) a tracking form to document the number and types of media used, and 2) a questionnaire to determine if Network members developed any new partnerships or initiatives that resulted from the campaign. Ethical approval was obtained from McMaster University and the University of Western Ontario.

Of the 15 possible post-secondary institutions invited to participate, four (three universities and one college) agreed to send an email to their students describing the study. Of those who met the age criteria, 3,767 students responded. The survey included demographic data and nine questions, one of which was a question about a fictitious drug. This question was included to control for social desirability bias. Most of the respondents (72%) were between the ages of 19-21 and the majority were female (63%). Of the 1,002 who volunteered on the web-survey to participate in a focus group, 195 responded to a follow-up email invitation, and of these, 66 attended. There were nine focus groups conducted at three of the institutions, five with females and four with males.

Findings

When asked about their general awareness of any binge drinking media campaign, 29.7% of those responding to the web-based survey indicated that they had seen or heard messages about the dangers of binge drinking. When asked

specifically about this campaign, a greater percentage were aware of the radio ad (29.2%) than either the poster (16.6%) or the postcard (11.8%) and significantly more males had heard the radio ads (34%) than females (28%). Only 2% answered “yes” to the control question about a fictitious drug. The three most commonly identified risks of binge drinking were alcohol poisoning (66%), long-term physical health effects (34%), and impaired decision making/embarrassment (31%). Females were more likely than males to identify personal vulnerability as a risk. Furthermore, females were more likely to define binge drinking as more than three or more than five drinks whereas males were more likely to define it as having 10 or more drinks, throwing up and passing out. The results also suggest that where there was more unpaid advertising, such as radio and television interviews and other community events, there was greater awareness of the campaign.

Focus group participants did not relate to the term or definition of binge drinking used for the postcard and radio ad. They preferred to use such terms as “funnelling” and “chugging”. In addition, binge drinking was perceived as a social norm in this population and not viewed as a concern. Participants also recommended that messages be directed to both high school and university/college students.

Respondents from the web-based survey and focus group participants offered similar comments about the campaign materials. Overall, the feedback was positive and provided some indication that the promotional materials offered new knowledge and heightened awareness. Nevertheless, the radio ad was described as “too wordy” and its rapid delivery and upbeat music distracted the listener from the serious message. Although the postcard was judged as colourful and eye-catching, there was concern that the text was difficult to read and since the information was on the back, the health message could be missed. In contrast, the poster was found to be effective because its message was clear, direct and focused on the “here and now”. However, it was suggested that the poster could be improved by using before and after pictures.

Thirteen of the 16 health units indicated that new partnerships had been initiated or current relationships had been strengthened as a result of the media campaign. Most of these partnerships were with academic institutions and restaurant/bar owners. Other examples included the Ontario Provincial Police, campground/recreation personnel and community-wide committees. Almost half of the health units organized local events. Network

members attributed the heightened community interest in binge drinking to the campaign.

Discussion and Implications for Practice

Working with a diverse urban and rural population in a large geographic area was challenging, as was collaborating with 16 health units that covered two planning regions. However, to maximize the potential reach and to avoid duplication of efforts, the Network pooled their collective resources, including money and staff time, and created innovative solutions to conduct the campaign. The Network reached consensus on the campaign, and the project has formed the basis for future collaboration with other partners.

It is recognized that this evaluation used a convenience sample and hence, results need to be interpreted with caution. Nevertheless, the project offered useful data for program planning and incorporated an innovative way of surveying a population that is generally considered difficult to access, especially when resources are limited. The project also identified areas for further research.

Considering that the campaign was limited to a four-week period, it is challenging to determine whether the awareness levels achieved are acceptable. A review of the literature found that levels of awareness and how they are reported are inconsistent^{8,9,10,11}. Recognizing that recruitment was limited to an informal invitation to participate in the evaluation with no reminders, a sample size of 3,767 was encouraging. With limited resources, it would not have been possible to survey this many 19-24 year olds using any other methodology. Two areas worthy of further investigation are:

1) examining awareness levels of media campaigns delivered by public sector organizations who generally deliver such programs with limited funds and 2) the impact of such campaigns on the target audience.

Since these respondents were more aware of the radio ad than the poster or postcard, radio messages may be more effective in exposing 19-24 year olds to health information. This assumption requires further study. It is not surprising that more males than females were aware of the radio ads since radio stations that target males were purposefully chosen. This is an important consideration, given that males binge drink more than females¹². Since only 2% answered “yes” to the control question about a fictitious drug, it was concluded that the overwhelming majority of respondents were truthful in their responses.

It is interesting to note that focus group respondents did

not identify with the term or definition of binge drinking used for the campaign. As well, such behaviour was not seen as a problem by this audience. This sample of 19-24 year olds was more likely to be receptive to messages describing immediate risks rather than messages emphasizing future health consequences. This observation has implications for planning interventions that will be favourably received by this age group. These findings suggest that future radio ads should adopt an even more serious tone and continue to deliver messages that address both the immediate physical and social consequences. Posters that use simple, clear messages and offer a realistic image are more likely to be positively received. The suggestion that the campaign also target high school students is noteworthy and requires further exploration. Overall, campaign materials should be realistic and personally relevant to this target population. Finally, it is encouraging to note that health units reported that they were able to develop partnerships and plan local events. These were identified as “spin-offs” that were attributed to the campaign.

Recommendations

Based on the campaign’s implementation and the process evaluation, the following recommendations are presented:

1. Since the Mandatory Program Guidelines require health units to conduct education campaigns to disseminate health information, and because effective campaigns require a significant investment of resources, an effectiveness evaluation of campaigns needs to be done. Evaluation should be included in the planning stage of the next campaign.
2. Health units need to collaborate in developing media campaigns to:
 - share costs across planning regions
 - create quality campaigns, and
 - obtain better results than any one health unit could achieve.
3. Since the term binge drinking and its definition were not well accepted by the target population, this term and definition should be avoided with 19-24 year olds.
4. It is important to allow sufficient lead-time so that other community partners can participate in planning a comprehensive media campaign.
5. Because unpaid advertising was effective in heightening awareness of campaign messages, health units should allocate sufficient staff time to generate unpaid advertising.

These activities could include developing media releases, participating in media activities, and working with community partners.

6. Media campaigns should target adolescents in order to reach individuals before or as they begin to experiment with binge drinking.

Next Steps

Members of the Network are organizing support in order to launch a three-year campaign to reduce dangerous drinking by underage youth in Ontario. The goal of this provincial campaign is to raise awareness of the risks of dangerous drinking. The target group includes adolescents, parents and their communities. The proposed campaign would integrate local initiatives to build awareness and skills, mobilize communities and support policy development.

Conclusion

Binge drinking in this population of 19-24 year olds is an important public health issue that must be addressed further. It is important to recognize that binge drinking is a term that was not accepted by those who participated in this evaluation. They preferred using the terms “chugging” or “funneling”. Results also indicated that campaign materials need to be clear, direct, have personal relevance, and focus on the “here and now”. Areas for further research have been identified.

The lessons learned from working together from the inception to the delivery of the campaign, as well as the feedback received from 19-24 year olds are being used to influence practice. It is anticipated that the strengthened partnerships and those that emerged as a result of the campaign will enhance future initiatives, including the underage drinking campaign currently being planned.

Evaluation needs to be incorporated at the outset. Collaboration between practitioners and researchers recognizes the special skills and expertise of both partners, and maximizes the possibility of a successful initiative. By working together the 16 health units were able to accomplish more than if they had acted independently. This kind of partnership requires dedicated time and resources. Compromise and consensus are critical elements for an effective media campaign.

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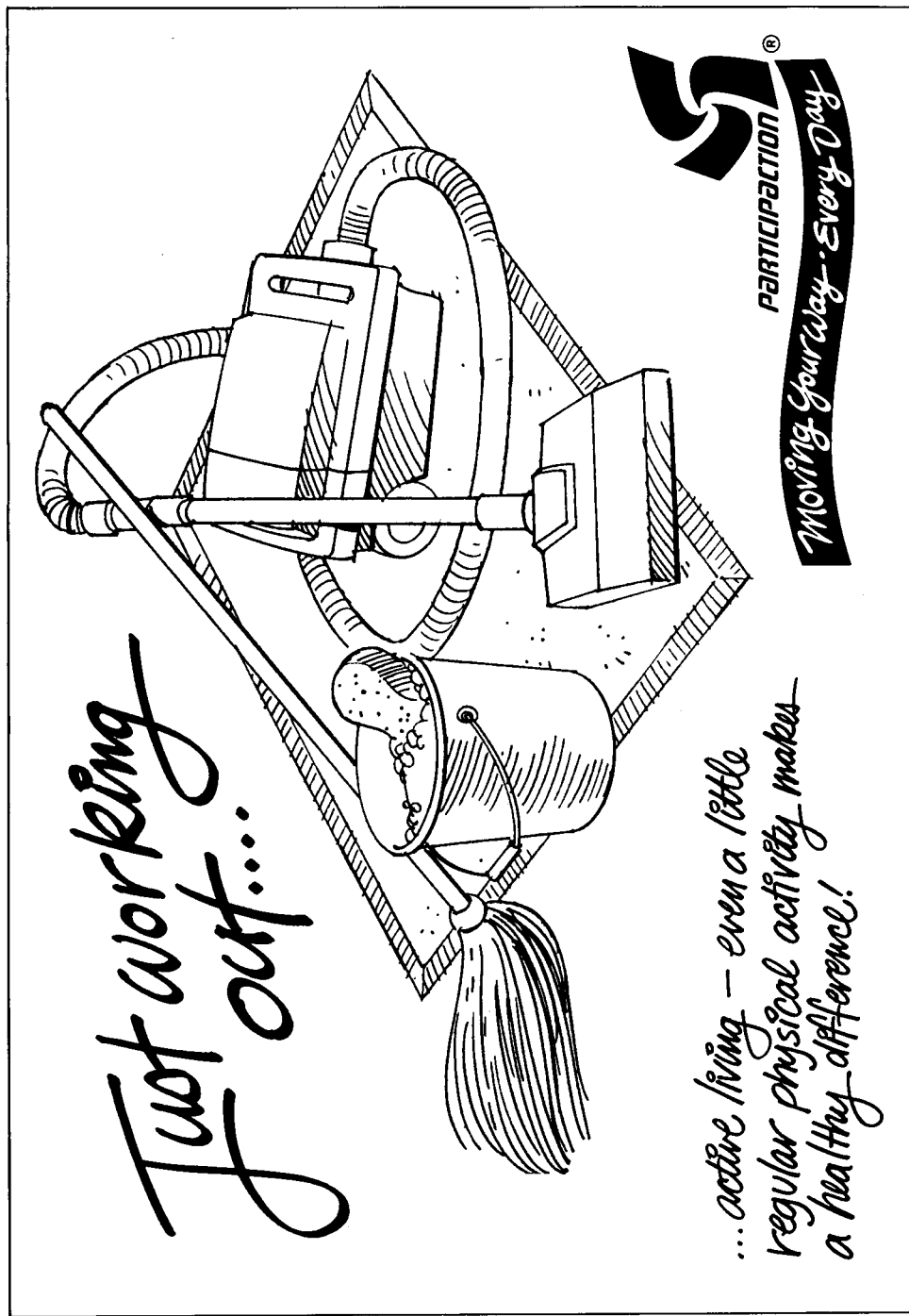
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REFERENCES

1. Process Evaluation of the Central West/Southwest Binge Drinking Media Campaign: Implications for Practice and Lessons Learned. London: Middlesex-London Health Unit, 2001.
2. Canadian Profile: Alcohol, Tobacco and Other Drugs. Toronto: Canadian Centre on Substance Abuse and Centre for Addiction and Mental Health, 1999.
3. Statistics Canada – 96 Census: Beyond 20/20. Ottawa: Statistics Canada, 1997.
4. Gliksman L, Demers A, Adlaf E, Newton-Taylor B, Schmidt K. Canadian Campus Survey 1998. Toronto, ON: Centre for Addiction and Mental Health, 2000, pp. 26-27.
5. Wechsler H, Davenport A, Dowdall G, Moeykens B, Castillo S. Health and Behavioural Consequences of Binge Drinking in College: A National Survey of Students at 140 Campuses. JAMA 1994; 272:1672-1677.
6. Ontario Profile of Alcohol and Other Drugs. Toronto: Addiction Research Foundation, 1998.
7. Mandatory Health Programs and Services Guidelines. Toronto: Ontario Ministry of Health, 1997.
8. Murray DM, Prokhorov AV, Harty KC. Effects of a Statewide Antismoking Campaign on Mass Media Messages and Smoking Beliefs. Preventive Medicine 1994; 23: 54-60.
9. Peetz-Schou M. How to Measure Consumer Awareness of Mass-Media Campaigns for Public Health Purposes. Patient Education and Counseling 1997; 30: 53-59.
10. Popham WJ, Potter LD, Hetrick MA, Muthen LK, Durr JM, Johnson MD. Effectiveness of the California 1990-1991 Tobacco Education Media Campaign. American Journal of Preventive Medicine 1994; 10: 319-326.
11. Ratcliffe WD, Wittman WP. Parenting Education: Test-Market Evaluation of a Media Campaign, In: Hess RE, Hermalin IJ Eds., Innovations in Prevention, Toronto: Haworth, 1983.
12. Ontario Health Survey. Toronto: Ontario Ministry of Health, 1996/97.



*Just working
out...*

*...active living - even a little
regular physical activity makes
a healthy difference!*

