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! Health Info-Com Network !

! Medical Newsletter !

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The Health Info-Com Network Newsletter is distributed biweekly. Articles on a medical nature are welcomed. If you have an article, please contact the editor for information on how to submit it. If you are interested in joining the automated distribution system, please contact the editor.

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Comments & News from the Editor

I would like to continue to thank everyone who has sent in a donation for the Mednews OCR/Scanner Fund. We have reached our goal! A Hewlett Packard

Scanjet IIp was purchased this week.

Thank you to the following individuals whose contributions I just received:

John Sorenson

Carol Sigelman

Carla Moore

Barbara Moose

Judith Schrier

Again, thank you to all who gave!

I have been using Wordscan Plus for the past couple of weeks and would like to review the product. Wordscan Plus is a product of Calera Recognition Systems. It runs under Windows 3.1 and supports that Accufont Technology of the Hewlett Packard Scanners.

When initially bringing up the software, it lets you select several options; (1) text / graphics (2) input source ie scanner, fax file, disk file (3) automatic versus manual decomposition of the scanned image.

I like manual decomposition since the software then lets me select which parts of the document I would like scanned, and in what order.

Once an image is scanned, you can bring up the Pop-Up image verification. The software gives you two "errors" at this point. Blue which are words that were converted reliability, but do not match anything in the built-in dictionary.

Yellow shade, which are words that Wordscan Plus doesn't think it converted correctly at all. I have found that the software should give itself more credit. It is usually correct, instead of wrong. If a word is shaded blue, you can add it to your personal dictionary. The only problem is the personal dictionary will only handle about 200 words. I find this to be very limited, considering how many medical terms are not in a normal dictionary.

After a document is converted, you can save it in a multitude of word processor formats. Also any images that were captured can be stored in a seperate TIFF or PCX file format.

I was extremely impressed on the percent accuracy for fax files. I use



an Intel Satisfaxtion card, which stores incoming faxs in a PCX/DCX format. While most of my faxes were received in "standard" mode (200x100 dpi), the accuracy of Wordscan Plus was excellent.

Overall, a very impressive product. The only fault I could find is the limitations of the size of the user dictionary. 200 specialized words is just too small.

If anyone has any specific questions, please do not hesitate to send me email.



Centers for Disease Control and Prevention - MMWR

Emerging Infectious Diseases

Introduction

Despite predictions earlier this century that infectious diseases would soon be eliminated as a public health problem (1), infectious diseases remain the major cause of death worldwide and a leading cause of illness and death in the United States. Since the early 1970s, the U.S. public health system has been challenged by a myriad of newly identified pathogens and syndromes (e.g., Escherichia coli O157:H7, hepatitis C virus, human immunodeficiency virus, Legionnaires disease, Lyme disease, and toxic shock syndrome). The incidences of many diseases widely presumed to be under control, such as cholera,

malaria, and tuberculosis (TB), have increased in many areas. Furthermore, control and prevention of infectious diseases are undermined by drug resistance in conditions such as gonorrhea, malaria, pneumococcal disease, salmonellosis, shigellosis, TB, and staphylococcal infections (2). Emerging infections place a disproportionate burden on immunocompromised persons, those in institutional settings (e.g., hospitals and child day care centers), and minority and underserved populations. The substantial economic burden of emerging infections on the U.S. health-care system could be reduced by more effective surveillance systems and targeted control and prevention programs

This issue of MMWR introduces a new series, "Emerging Infectious Diseases." Future articles will address these diseases, as well as surveillance, control, and prevention efforts by health-care providers and public health officials. This first article updates the ongoing investigation of an outbreak of E. coli O157:H7 in the western United States (4).

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Update: Multistate Outbreak of Escherichia coli O157:H7

Infections from Hamburgers -- Western United States,

From November 15, 1992, through February 28, 1993, more than 500 laboratory-confirmed infections with E. coli O157:H7 and four associated deaths occurred in four states -- Washington, Idaho, California, and Nevada. This report summarizes the findings from an ongoing investigation (1) that identified a multistate outbreak resulting from consumption of hamburgers from one restaurant chain. Washington

On January 13, 1993, a physician reported to the Washington Department of Health a cluster of children with hemolytic uremic syndrome (HUS) and an increase in emergency room visits for bloody diarrhea. During January 16-17, a case-control study comparing 16 of the first cases of bloody diarrhea or postdiarrheal HUS identified with age- and neighborhood-matched controls implicated eating at chain A restaurants during the week before symptom onset (matched odds ratio OR=undefined; lower confidence limit=3.5). On January 18, a multistate recall of unused hamburger patties from chain A restaurants was initiated.

As a result of publicity and case-finding efforts, during January-February 1993, 602 patients with bloody diarrhea or HUS were reported to the state health department. A total of 477 persons had illnesses meeting the case definition of culture-confirmed E. coli O157:H7 infection or postdiarrheal HUS (Figure 1). Of the 477 persons, 52 (11%) had close contact with a person with confirmed E. coli O157:H7 infection during the week preceding onset of symptoms. Of the remaining 425 persons, 372 (88%) reported eating in a chain A

restaurant during the 9 days preceding onset of symptoms. Of the 338 patients who recalled what they ate in a chain A restaurant, 312 (92%) reported eating a regular-sized hamburger patty. Onsets of illness peaked from January 17 through January 20. Of the 477 casepatients, 144 (30%) were hospitalized; 30 developed HUS, and three died. The median age of patients was 7.5 years (range: 0-74 years). Idaho

Following the outbreak report from Washington, the Division of Health, Idaho Department of Health and Welfare, identified 14 persons with culture-confirmed E. coli O157:H7 infection, with illness onset dates from December 11, 1992, through February 16, 1993 (Figure 2A). Four persons were hospitalized; one developed HUS. During the week preceding illness onset, 13 (93%) had eaten at a chain A restaurant. California

In late December, the San Diego County Department of Health Services was notified of a child with E. coli O157:H7 infection who subsequently died. Active surveillance and record review then identified eight other persons with E. coli O157:H7 infections or HUS from mid-November through mid-January 1993. Four of the nine reportedly had recently eaten at a chain A restaurant and



four at a chain B restaurant in San Diego. After the Washington outbreak was reported, reviews of medical records at five hospitals revealed an overall 27% increase in visits or admissions for diarrhea during December 1992 and January 1993 compared with the same period 1 year earlier. A case was defined as postdiarrheal HUS, bloody diarrhea that was culture negative or not cultured, or any diarrheal illness in which stool culture yielded E. coli O157:H7, with onset from November 15, 1992, through January 31, 1993.

Illnesses of 34 patients met the case definition (Figure 2B). The outbreak strain was identified in stool specimens of six patients. Fourteen persons were hospitalized, seven developed HUS, and one child died. The median age of case-patients was 10 years (range: 1-58 years). A case-control study of the first 25 case-patients identified and age- and sex-matched community controls implicated eating at a chain A restaurant in San Diego (matched OR=13; 95% confidence interval CI=1.7-99). A study comparing case-patients who ate at chain A restaurants with well meal companions implicated regular-sized hamburger patties (matched OR=undefined; lower confidence limit=1.3). Chain B was not statistically associated with illness. Nevada

On January 22, after receiving a report of a child with HUS who had eaten at a local chain A restaurant, the Clark County (Las Vegas) Health District issued a press release requesting that persons with recent bloody diarrhea contact the health department. A case was defined as postdiarrheal HUS, bloody diarrhea that was culture negative or not cultured, or any diarrheal illness with a stool culture yielding the Washington strain of E. coli O157:H7, with onset from December 1, 1992, through February 7, 1993. Because local laboratories were not using sorbitol MacConkey (SMAC) medium to screen stools for E. coli O157:H7, this organism was not identified in any patient. After SMAC medium was distributed, the outbreak strain was detected in the stool of one patient 38 days after illness onset.

Of 58 persons whose illnesses met the case definition (Figure 2C), nine were hospitalized; three developed HUS. The median age was 30.5 years (range: 0-83 years). Analysis of the first 21 patients identified and age- and sex-matched community controls implicated eating at a chain A restaurant during the week preceding illness onset (matched OR=undefined; lower confidence

limit=4.9). A case-control study using well meal companions of case-patients also implicated eating hamburgers at chain A (matched OR=6.0; 95% CI=0.7-49.8). Other Investigation Findings

During the outbreak, chain A restaurants in Washington linked with cases primarily were serving regular-sized hamburger patties produced on November 19, 1992; some of the same meat was used in "jumbo" patties produced on November 20, 1992. The outbreak strain of E. coli O157:H7 was isolated from 11 lots of patties produced on those two dates; these lots had been distributed to restaurants in all states where illness occurred. Approximately 272,672 (20%) of the implicated patties were recovered by the recall.

A meat traceback by a CDC team identified five slaughter plants in the United States and one in Canada as the likely sources of carcasses used in the



contaminated lots of meat and identified potential control points for reducing the likelihood of contamination. The animals slaughtered in domestic slaughter plants were traced to farms and auctions in six western states. No one slaughter plant or farm was identified as the source.

Further investigation of cases related to secondary transmission in families and child day care settings is ongoing.

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Editorial Note: E. coli O157:H7 is a pathogenic gram-negative bacterium first identified as a cause of illness in 1982 during an outbreak of severe bloody diarrhea traced to contaminated hamburgers (2). This pathogen has since emerged as an important cause of both bloody diarrhea and HUS, the most common cause of acute renal failure in children. Outbreak investigations have linked most cases with the consumption of undercooked ground beef, although other food vehicles, including roast beef, raw milk, and apple cider, also have been implicated (3). Preliminary data from a CDC 2-year, nationwide, multicenter study revealed that when stools were routinely cultured for E. coli O157:H7

that organism was isolated more frequently than Shigella in four of 10 participating hospitals and was isolated from 7.8% of all bloody stools, a higher rate than for any other pathogen.

Infection with E. coli O157:H7 often is not recognized because most clinical laboratories do not routinely culture stools for this organism on



SMAC medium, and many clinicians are unaware of the spectrum of illnesses associated with infection (4). The usual clinical manifestations are diarrhea (often bloody) and abdominal cramps; fever is infrequent. Younger age groups and the elderly are at highest risk for clinical manifestations and complications. Illness usually resolves after 6-8 days, but 2%-7% of patients develop HUS, which is characterized by hemolytic anemia, thrombocytopenia, renal failure, and a death rate of 3%-5%.

This report illustrates the difficulties in recognizing community outbreaks of E. coli O157:H7 in the absence of routine surveillance. Despite the magnitude of this outbreak, the problem may not have been recognized in three states if the epidemiologic link had not been established in Washington (1). Clinical laboratories should routinely culture stool specimens from persons with bloody diarrhea or HUS for E. coli O157:H7 using SMAC agar (5). When infections with E. coli O157:H7 are identified, they should be reported to local health departments for further evaluation and, if necessary, public health action to prevent further cases.

E. coli O157:H7 lives in the intestines of healthy cattle, and can contaminate meat during slaughter. CDC is collaborating with the U.S. Department of Agriculture's Food Safety Inspection Service to identify

critical control points in processing as a component of a program to reduce the likelihood of pathogens such as E. coli O157:H7 entering the meat supply. Because slaughtering practices can result in contamination of raw meat with pathogens, and because the process of grinding beef may transfer pathogens from the surface of the meat to the interior, ground beef is likely to be internally contaminated. The optimal food protection practice is to cook ground beef thoroughly until the interior is no longer pink, and the juices are clear. In this outbreak, undercooking of hamburger patties likely played an important role. The Food and Drug Administration (FDA) has issued interim recommendations to increase the internal temperature for cooked hamburgers to 155 F (86.1 C) (FDA, personal communication, 1993).

Regulatory actions stimulated by the outbreak described in this report and the recovery of thousands of contaminated patties before they could be consumed emphasize the value of rapid public health investigations of outbreaks. The public health impact and increasing frequency of isolation of this pathogen underscore the need for improved surveillance for infections caused by E. coli O157:H7 and for HUS to better define the epidemiology of E. coli O157:H7.

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## Use of Smokeless Tobacco Among Adults -- United States,

Consumption of moist snuff and other smokeless tobacco products in the United States almost tripled from 1972 through 1991 (1). Long-term use of smokeless tobacco is associated with nicotine addiction and increased risk of oral cancer (2) -- the incidence of which could increase if young persons who currently use smokeless tobacco continue to use these products frequently (1). To monitor trends in the prevalence of use of smokeless tobacco products, CDC's 1991 National Health Interview Survey-Health Promotion and Disease Prevention supplement (NHIS-HPDP) collected information on snuff and chewing tobacco use and smoking from a representative sample of the U.S. civilian, noninstitutionalized population aged greater than or equal to 18 years. This report summarizes findings from this survey.

The 1991 NHIS-HPDP supplement asked "Have you used snuff at least 20 times in your entire life?" and "Do you use snuff now?" Similar questions were asked about chewing tobacco use and cigarette smoking. Current users of smokeless tobacco were defined as those who reported snuff or chewing tobacco use at least 20 times and who reported using snuff or chewing tobacco at the time of the interview; former users were defined as those who reported having used snuff or chewing tobacco at least 20 times and not using either at the

time of the interview. Ever users of smokeless tobacco included current and former users. Current smokers were defined as those who reported smoking at least 100 cigarettes and who were currently smoking and former smokers as those who reported having smoked at least 100 cigarettes and who were not smoking now. Ever smokers included current and former smokers. Data on smokeless tobacco use were available for 43,732 persons aged greater than or equal to 18 years and were adjusted for nonresponse and weighted to provide national estimates. Confidence intervals (CIs) were calculated by using standard errors generated by the Software for Survey Data Analysis (SUDAAN)

In 1991, an estimated 5.3 million (2.9%) U.S. adults were current users of smokeless tobacco, including 4.8 million (5.6%) men and 533,000 (0.6%) women. For all categories of comparison, the prevalence of smokeless tobacco use was substantially higher among men. For men, the prevalence of use was highest among those aged 18-24 years (Table 1); for women, the prevalence was highest among those aged greater than or equal to 75 years. The prevalence of smokeless tobacco use among men was highest among American Indians/Alaskan Natives and whites; the prevalence among women was highest among American Indians/Alaskan Natives and blacks. Among both men and women, prevalence of smokeless tobacco use declined with increasing education. Prevalence was substantially higher among residents of the southern United States and in rural areas. Although the prevalence of smokeless tobacco use was higher among



men and women below the poverty level, * this difference was significant only for women (p less than 0.05) (Table 1).

Among men, the prevalence of current use of snuff was highest among those

aged 18-44 years but varied considerably by age; the prevalence of use of chewing tobacco was more evenly distributed by age group (Table 2). Although women rarely used smokeless tobacco, the prevalence of snuff use was highest among those aged greater than or equal to 75 years.

An estimated 7.9 million (4.4% 95% CI=4.1-4.6) adults reported being former smokeless tobacco users. Among ever users, the proportion who were former smokeless tobacco users was 59.9% (95% CI=57.7-62.1). Among persons aged 18-24 years, the proportion of former users was lower among snuff users (56.2% 95% CI=49.4-63.0) than among chewing tobacco users (70.4% 95% CI=64.2-76.6). Among persons aged 45-64 years, the proportion of former users was similar for snuff (68.9% 95% CI=63.1-74.7) and chewing tobacco (73.5%

Among current users of smokeless tobacco, 22.9% (95% CI=19.9-26.0) currently smoked, 33.3% (95% CI=30.0-36.5) formerly smoked, and 43.8% (95% CI=39.9-47.7) never smoked. In comparison, among current smokers, 2.6% (95% CI=2.3-3.0) were current users of smokeless tobacco.

Daily use of smokeless tobacco was more common among snuff users (67.3% 95% CI=63.2-71.4) than among chewing tobacco users (45.1% 95% CI=40.6-

Reported by: Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion; Div of Health Interview Statistics, National Center for Health Statistics, CDC.

Editorial Note: The findings in this report indicate that the use of smokeless tobacco was highest among young males. Adolescent and young adult males, in particular, are the target of marketing strategies by tobacco companies that link smokeless tobacco with athletic performance and virility. Use of oral snuff has risen markedly among professional baseball players, encouraging this behavior among adolescent and young adult males and increasing their risk for

nicotine addiction, oral cancer, and other mouth disorders (4).

Differences in the prevalence of smokeless tobacco use among racial/ethnic groups may be influenced by differences in educational levels and socioeconomic status as well as social and cultural phenomena that require further explanation. For example, targeted marketing practices may play a role in maintaining or increasing prevalence among some groups, and affecting the differential initiation of smokeless tobacco use by young persons (5,6).

In this report, one concern is that nearly one fourth of current smokeless tobacco users also smoke cigarettes. In the 1991 NHIS-HPDP, the prevalence of cigarette smoking was higher among former smokeless tobacco users than among current and never smokeless tobacco users. In a previous study among college students, 18% of current smokeless tobacco users smoked



occasionally (7). In addition, approximately 7% of adults who formerly smoked reported substituting other tobacco products for cigarettes in an effort to stop smoking (8). Health-care providers should recognize the potential health implications of concurrent smokeless tobacco and cigarette use.

The national health objectives for the year 2000 have established special population target groups for the reduction of the prevalence of smokeless tobacco use, including males aged 12-24 years (to no more than 4% by the year 2000 objective 3.9) and American Indian/Alaskan Native youth (to no more than 10% by the year 2000 objective 3.9a) (9). Strategies to lower the prevalence of smokeless tobacco use include continued monitoring of smokeless tobacco use, integrating smoking and smokeless tobacco-control efforts, enforcing laws that restrict minors' access to tobacco, making excise taxes

commensurate with those on cigarettes, encouraging health-care providers to routinely provide cessation advice and follow-up, providing school-based prevention and cessation interventions, and adopting policies that prohibit tobacco use on school property and at school-sponsored events (5).

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