

**Evaluation of an Educational Videotape to Prevent
Botulism in Alaska
Bristol Bay, Alaska, August 2001**

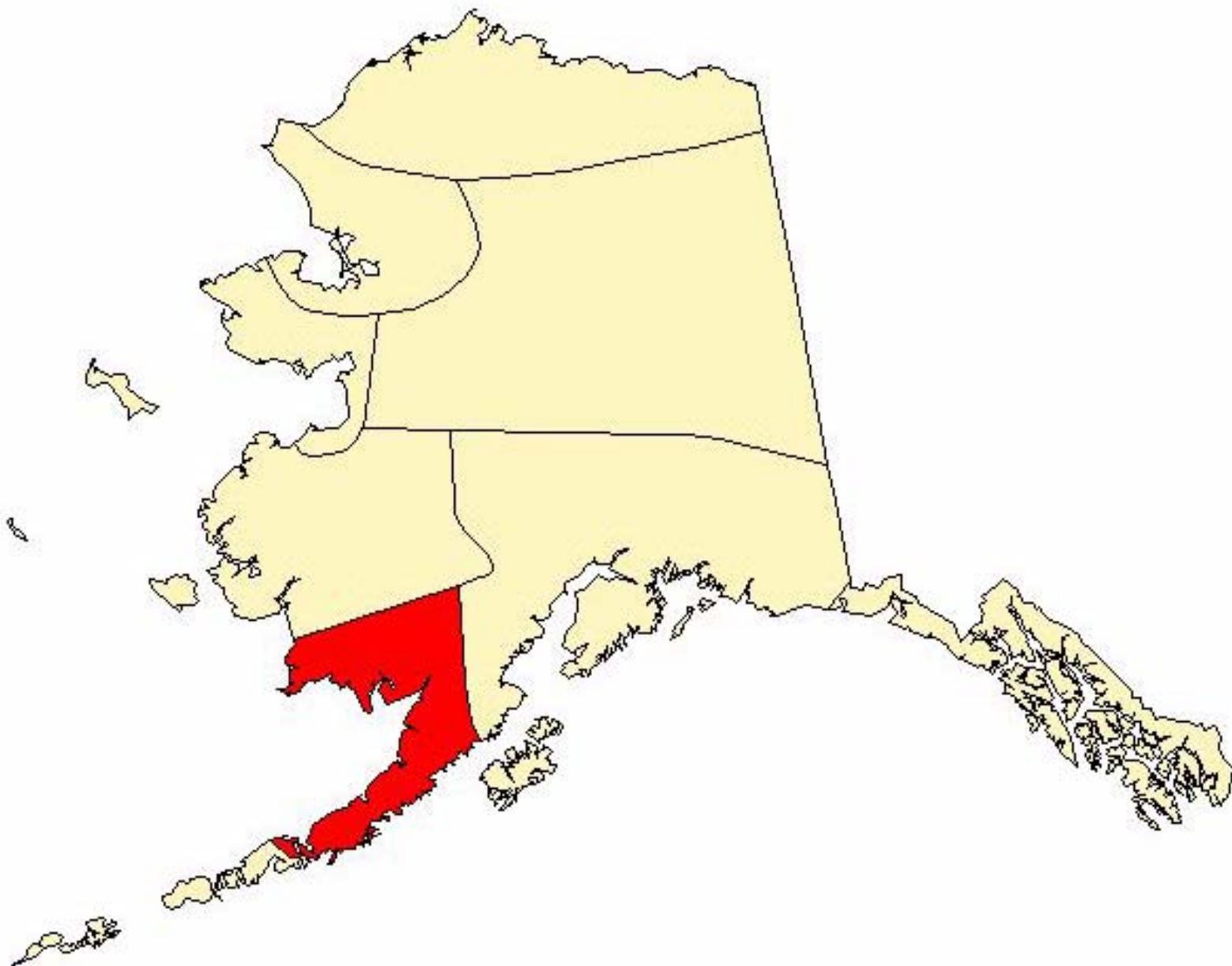


Botulism Prevention Videotape Evaluation

Foodborne Botulism in Alaska

- Incidence > 20 times higher than general U.S
- All cases associated with Alaska Native foods
 - Fermented aquatic mammals and fish heads
- *Clostridium botulinum* spores in Alaska: marine sediments, fish gills
- Increasing rates over last 20 years
 - Improved surveillance
 - Recognition of mild cases
 - ? Role of non-traditional fermentation methods
- Highest rates of disease in Southwestern Alaska villages
 - Bristol Bay Area Health Corporation Botulism Working Group

Bristol Bay, Alaska



Botulism Prevention Videotape Evaluation

Preventing Disease in Rural Alaska

- Acute care services: health aides
 - 15 weeks training
 - Yearly continuing medical education
- Telephone contact with regional hospitals
- Emergency medical evacuations
 - Small airplanes
 - Weather-dependent
 - Expensive
- Disease prevention programs
 - Minimal personnel
 - Videotape players available in most clinics, schools, and homes
 - Public broadcasting airs videotapes in villages

Botulism Prevention Videotape Evaluation
KAP Survey, Bristol Bay, Alaska, September, 1999¹

- High awareness of botulism
- Fermenting foods in plastic containers dangerous
 - 34% of preparers use
- Acceptable prevention messages elicited
- Misconceptions identified

¹Chiou et al., Int J Circumpolar Health, 2002

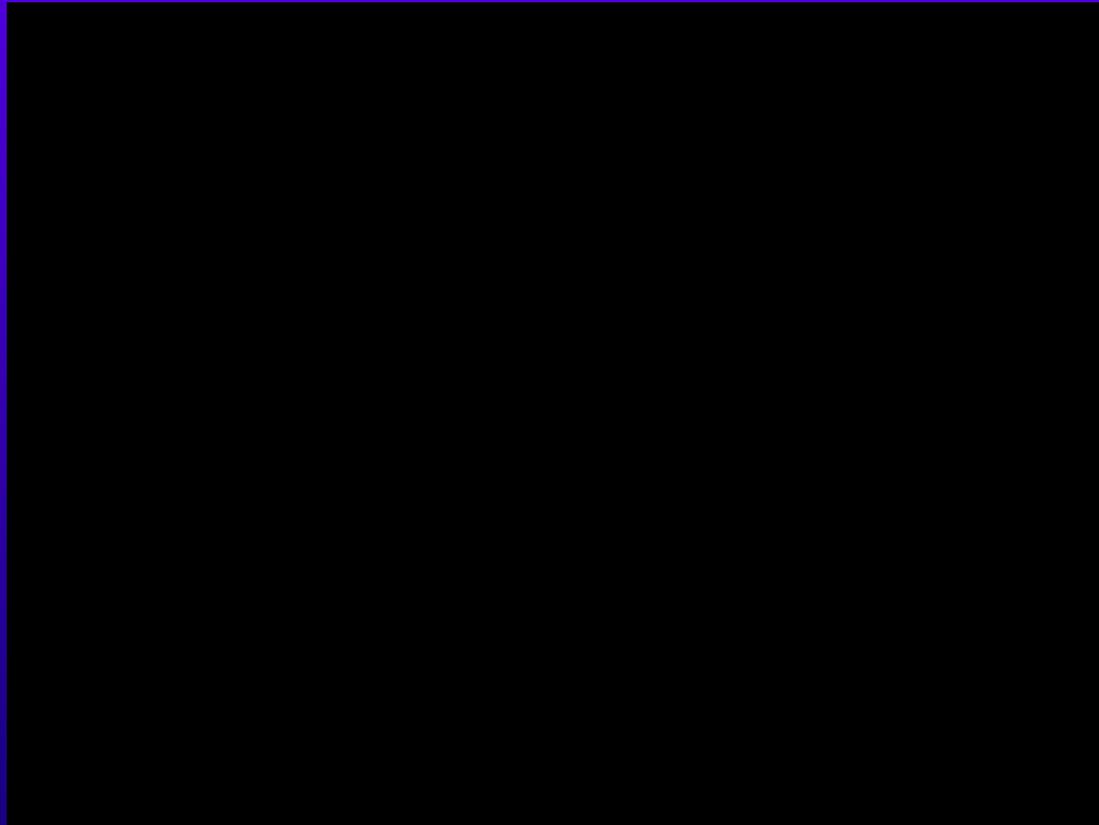
Educational Videotape to Prevent Foodborne Botulism among Alaska Natives

- Videotape produced, > 600 distributed, April 2000
 - Rural clinics and schools
 - Rural radio stations, public television serving rural areas
 - Community centers, libraries, tribal councils
- Interactive website
 - <http://www.cdc.gov/phtn/botulism/default/default.asp>

Botulism Prevention Videotape Evaluation

Message:

Traditional Preparation Methods are Safer



Botulism Prevention Videotape Evaluation

Methods

- Repeat KAP survey, August 2001
 - In-person interviews
 - 16% random sample
 - ≥ 18 years old
 - 9 villages in Bristol Bay, Alaska
- Data collected
 - Videotape viewing
 - Frequency of consuming and preparing fermented foods
 - Knowledge of botulism
 - Willingness to modify behavior
 - Fermented food preparation methods

Botulism Prevention Videotape Evaluation

Results – Videotape Awareness and Usage

- 254 participants
 - 110 (43%) heard of the videotape
 - 97 (38%) saw the videotape
 - 66 (68%) learned of the videotape from public television
 - 76 (78%) saw at home on public television
 - 17 (18%) saw in a medical facility
- Well received
 - Alaska Native Health Boards
 - Award winning

Botulism Prevention Videotape Evaluation

Results - Demographics

	1999 Pre-video N = 140*	2001 All Participants N = 254*	2001 Saw video N = 97*
	N (%)	N (%)	N (%)
Male	84 (60)	97 (38)**	29 (30)**
Age			
18-39	60 (43)	117 (46)	37 (38)
40-59	62 (43)	96 (38)	44 (46)
60+	17 (12)	38 (15)	15 (2)
Ethnicity			
Yup'ik/AN	127 (91)	234 (93)	93 (97)
Other	13 (9)	18 (7)	3 (3)
Food Preparers	38 (27)	52 (21)	25 (25)
Male	16 (42)	12 (23)**	2 (8)**

* Denominators vary slightly, proportions exact

**P < 0.05

Botulism Prevention Videotape Evaluation

Results - Practices*

	1999	2001	2001
	Pre video	All respondents	Saw video
Fermented foods:	N=140	N=254	N=97
	N (%)	N (%)	N (%)
Fish heads	65 (46)	100 (39)	48 (49)
Beaver tail	27 (19)	32 (12)	16 (16)
Seal flipper	28 (2)	39 (15)	22 (23)
Walrus flipper	9 (6)	17 (6)	9 (9)
Fish eggs	11 (7)	16 (6)	7 (7)

*Not mutually exclusive

Botulism Prevention Videotape Evaluation
Believed They Could get Botulism

	1999 Pre video n/N (%)	2001 All respondents n/N (%)	2001 Saw video n/N (%)
Total	94/121 (78)	204/248 (82)	84/96 (87)
Male	58/74 (78)	80/96 (83)	27/29 (93)
Female	36/47 (77)	124/152 (82)	57/67 (85)

Botulism Prevention Videotape Evaluation

Willingness to Change Behavior

	1999 Pre video N=117* N (%)	2001 All respondents N=254* N (%)	2001 Saw video N=97* N (%)
Boil fermented foods	53 (45)	111 (44)	44 (45)
Avoid foods fermented in plastic	75 (64)	128 (50)**	55 (57)
Eat foods fermented in cool places	75 (64)	130 (52)**	60 (62)

* Denominators vary slightly, proportions exact

** P= <0.05

Botulism Prevention Videotape Evaluation

Misconceptions

Misconception:	1999 Pre video	2001 All responders	2001 Saw video
Causes fever	73/124 (59)	143/254 (56)	44/97 (45)
Some people protected	28/124 (23)	41/254 (16)	17/97 (17)
Open-ended questions:			
Vomit after symptom onset	23/54 (42)	51/117 (43)	18/53 (34)
Combining foods	7/37 (19)	29/81 (36)	9/29 (31)

Botulism Prevention Videotape Evaluation

Food Preparer Practices

	1999 Pre video n/N (%)	2001 All respondents n/N (%)	2001 Saw video n/N (%)
Ferment in plastic container	13/37 (34)	11/50 (22)	6/21 (28)
Ferment in cool place	35/37 (94)	45/47 (96)	20/20 (100)
Wash food before fermenting	26/37 (71)	32/49 (65)	14/22 (64)

Botulism Prevention Videotape Evaluation

Conclusions

- Fewer than half of adults had heard of the videotape
- 38% of adults viewed the videotape
- No change in food consumption or preparation practices:
 - Trend among those who watched the video to appreciate risks and have fewer misconceptions
 - Survey underpowered due to low viewing of video

Botulism Prevention Videotape Evaluation

Future Directions

- Videotape marketing
 - Increase awareness of the videotape
 - Increase viewing
- Methods to reinforce prevention messages
 - Yup'ik language courses
 - Public schools
 - Continuing Medical Education
 - Rural health care providers
- Support behavior change

Botulism Prevention Videotape Evaluation

Acknowledgements

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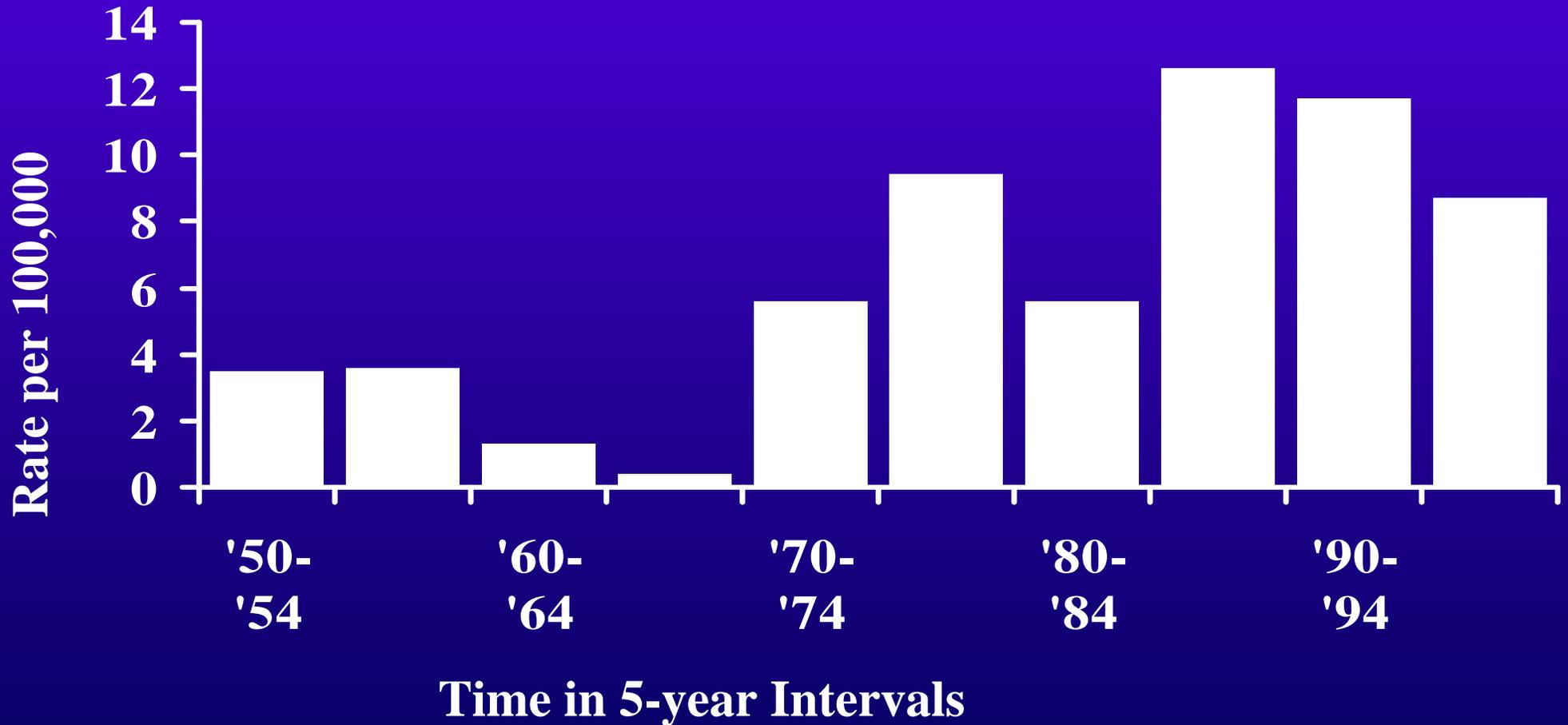
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Annual Rate of Botulism in Alaska, 1950-1999



Beaver Paws Tested for Botulinum Toxin at CDC, Atlanta, GA



Botulism Prevention Videotape Evaluation

Misconceptions among Women

Misconception	1999 Pre video	2001 All responders	2001 Saw video
Causes fever	24/53 (45)	79/152 (52)	28/67 (42)
Vomit to treat	4/22 (18)	3/77 (4)	2/40 (5)
Not everyone is susceptible	11/47 (23)	27/152 (18)	11/67 (16)
Combining foods	1/9 (11)	16/44 (36)	5/19 (26)
Antibiotics treat	2/22 (9)	10/77 (13)	6/40 (15)

Botulism Prevention Videotape Evaluation

Willingness to Change Behavior among Men

	1999 Pre video N=70* N (%)	2001 All male respondents N= 97* N (%)	2001 Males who saw video N= 29* N (%)
Boil fermented foods	28 (40)	46 (48)	17 (59)
Heat seal oil	13 (18)	19 (20)	7 (24)
Avoid foods fermented in plastic	43 (61)	46 (48)	16 (55)
Eat foods fermented in cool places	42 (60)	45 (47)	16 (55)
Eating dried fish only if salted	43 (58)	53 (55)	15 (52)

* Denominator varies slightly, proportions exact