Developing a Community Assessment for Public Health Emergency Response Protocol for Riley County

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Presentation Outline

Introduction

• Public health problem

Applied Practice Experience

- APE site
- Learning objectives

Project Description

- CASPER overview
- Activities performed
- Products developed

Lessons Learned & Recommendations

MPH Foundational Competencies



INTRODUCTION



Public Health Problem

- Disasters are a major public heath concern in USA
- No state is exempt from disaster devastation
- Responding appropriately and effectively to disasters' public health consequences requires timely access to accurate public health information
- CASPER is designed to provide public health information about communities



Cost of Disasters in USA

1980-2019 Year-to-Date United States Billion-Dollar Disaster Event Cost (CPI-Adjusted)

Event statistics are added according to the date on which they ended.





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APPLIED PRACTICAL EXPERIENCE



APE Site



(RCHD, 2020)



Riley County Health Department

Started in June 2020

Initially remote

Team project

- Master of Public Health Students
- Preceptor Mr. Edward Kalas

Learning Objectives

- 1. Creating the local process for CASPERs for use in Riley County
- 2. Assessing how CASPER data must be entered and cleaned to prepare for proper analysis
- 3. Utilizing statistical software to enter and analyze data provided
- 4. Applying data analysis product to develop an overall evaluation of the CASPER tool



PROJECT DESCRIPTION



CASPER Project

What is CASPER?

- A specific set of epidemiologic tools and methods
- It provides rapid, inexpensive, accurate, and reliable populationbased public health information about communities affected by disasters

CASPER can be used in both disaster and non-disaster settings

Developing the RCHD CASPER Process

- Developing a simplified CASPER toolkit for Riley County
- Providing guidelines to assist local CASPERs

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CASPER Phases





CASPER Methods

2 stage cluster sampling used to pick households to interview

- 30 clusters
- 7 interviews in each cluster

Goal – 210 interviews

- Completed in 1-2 Days
- ~10 interview teams
- (2-3 people per team)

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CASPER Uses





CASPER Interactive Map



Centers for Disease Control and Prevention [CDC], 2020)



ACTIVITIES PERFORMED & PRODUCTS



Activities at the Beginning of APE



Ξ

- Studied the CDC CASPER toolkit
- Brainstormed ideas that could work for Riley County
- Research and literature review
- Developed objectives for CASPER project
- Met with team to discuss project ideas

Activities During the APE





Developed Data Entry Guide Tools

- Created Epi Info data entry training PowerPoint for the Riley CASPER process
 - Epi Info
 - How to enter data from multiple sources in Epi Info
 - Provided steps for using the "enter data" module in Epi Info
 - Updated progress in team meetings













Developed Data Entry Guide Tools

- Created data entry flowcharts
 - Guide on data entry methods
 - How to handle data entry if a CASPER uses a paper form
 - How to handle data if a CASPER uses electronic devices





Participated in Conducting the CASPER Trial





Assist volunteers with installing mobile Epi Info



Collect data

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Entered and **Cleaned** Data

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- Created data sheets after collecting data from the CASPER pilot
- Entered data from CASPER pilot surveys into Epi Info
- Reviewed data to check for inconsistencies
- Worked with part of data analysis with another MPH student



EXAMPLES OF DATA THAT CAN BE OBTAINED FROM THE RCHD CASPER PROCESS

CASPER Pilot test



Tracking Dataset

	А	В	С	D	E	F	G
1		county	Riley county	Riley county	Riley county	Riley county	
2		cluster	1	6	4	8	
3		houses in the cluster	91	110	95	43	
4		interviewer	purple 1	no name	Celeste + Hether	Harding/McCall	
5		Date of interview	1/9/21	1/9/21	1/9/21	1/9/21	
6							
7		house accessible	9	8	17	9	
8	no access	house inaccessible	0	0	2	0	
9							
10							
11	type of dwelling	single family home	1	7	10	9	
12		apartment/condo	7	0	6	0	
13		other(duplex)	1	0	3	0	
14							
15		none or minimal	8	7	15	9	
16	damage	damaged	1	0	4	0	
17		destroyed					
18							
19	answer	door was answered	5	5	5	8	
20		Apperas vacant	0	0	2		
21		nobody home after 1st vist	6	2	9	4	
22		2nd visit	5		7	2	
23		3rd visit			7	2	
24							
25	interview	language barrier	0	0	0	0	
26		refused	1	0	2	1	
27		come back later	0	0	0	0	
28		interview not finished	0	0	0	0	
29		interview completed	4	7	4	7	
30							
31	total number of houses attempted		15	8	19	9	



Summary of Tracking Form Analysis

Response Rates	Clusters (n=4)
Completion Rate	78.6%
Cooperation Rate	95.7%
Contact Rate	43.1%



Demographic Data

	Observations	Weighted Observations	Age M(SD)
Male	8	280	35.0(15.9)
Female	12	571	47.6(17.8)



Example of Tables of CASPER Results (*n*=19 (23678))

Covid tests #	Frequency	Weighted Frequencies	% Percent	95% CI
None	10	11587	48.9	17.6-80.9
Once	3	3778	15.9	-16.8-48.7
Twice	2	2771	11.7	-13.3-36.7
Three times	3	4534	19.1	-24.7-63.0
Refused to answer	1	1008	4.3	-8.5-17.0



Lessons Learned & Recommendations



Challenges

 Cluster analysis is almost impossible with small samples

Required technical expertise

Requires skills in data manipulation

oGenerates very long IDs

 \circ Missing entries

KANSAS STATE



Points to consider

✓ Analysis team should be familiar with software

✓ Epi Info is currently compatible with Windows only

✓ Excel, SPSS etc. can be used for analysis

Observations from the RCHD CASPER

	٨d	vantages	Dis	advantages
Paper Forms	0	Low cost	0	Forms not protected from getting lost, or form rain
	0	Requires little training	0	Requires additional materials such as clipboard, pen or
	0	Does not require power source		pencil.
	0	Easy to fill out in field	0	Could introduce errors from the manual transfer of the
				data from the paper form to the database
			0	Labor intensive
			0	Additional data entry required
Electronic Forms	0	Electronic data transfer	0	Technical training required
	0	No additional data entry required	0	Surveys need to be pre-loaded into mobile devices
	_	after data collection		prior data collection
	0	Less time consuming	0	Units not protected from elements
			0	Requires more time to fill out
			0	May limit number of field teams to availability of
				equipment



Conclusion

CASPER is a promising tool for assessing health needs in various settings including non-disaster settings

The Riley County CASPER trial suggested that essential data about the demographics and the impact of the COVID-19 pandemic on Riley households may be collected using this methodology



COMPETENCIES



MPH Foundational Competencies

	Competency description	Activities	Products
21 9	Perform effectively on interprofessional teams Design a population-based policy, program, program, project, or intervention	 Worked with the CASPER team Attended the RCHD Coalition meeting 	 ✓ RCHD CASPER protocol (data collection, entry, and analysis section)
2	Select quantitative and qualitative data collection methods appropriate for a given public health context	 Created data entry flowcharts for paper and electronic data collection Compared paper and electronic data collection methods 	 ✓ Data entry flowcharts



MPH Foundational Competencies

	Competency description	Activities	Products
3	Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software as appropriate	 Created data sheets Entered data into the Epi Info Cleaned data to prepare for analysis 	 ✓ Epi Info data output ✓ Epi Info data entry analysis report ✓ Tracking sheet data set
19	Communicate audience-appropriate public health content, both in writing and through oral presentation	 Created the Epi Info training tools Created flyers 	 ✓ Epi Info data entry training PowerPoint ✓ Flyers



Thank You

- Graduate Committee:
 - Dr. Richard Rosenkranz
 - Dr. Sandra Procter
 - Dr. Sara Rosenkranz
- APE & ILE Preceptor
 - Mr. Ed Kalas
- MPH Program
 - Dr. Ellyn Mulcahy
 - Barta Stevenson
- Family and friends
- CASPER team (Ganesh Kumar, Jason Defisher, Sofia Scavone, Amanda Todavchick) & Volunteers



References

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QUESTIONS?

