

2019 Kauai CASPER

FINAL REPORT



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INTRODUCTION

Background

Hawaii is one of the most isolated island chains in the world. It will take longer for assistance to arrive and to re-establish infrastructure after a disaster, particularly if the state's primary port, Honolulu Harbor, is impacted. Due to these unique vulnerabilities, Hawaii State's preparedness recommendations differ from those of the mainland United States: all Hawaii residents are advised to maintain a 14-day supply of food and water in their emergency kit compared to three days on the mainland. Residents often face significant barriers as they attempt to meet these recommendations. Knowledge, awareness, and perception of Hawaii high-risk hazards, in addition to community needs, continue to change. Preparedness officials must maintain situational awareness of such changes in order to inform planning efforts at the local and state level.

To assess current island preparedness levels and needs, a community assessment for public health emergency response (CASPER) was conducted on Kauai in July 2019 by the Hawaii State Department of Health's Kauai District Health Office. CASPER is a validated rapid health needs assessment methodology developed by the Centers for Disease Control and Prevention (CDC) to rapidly obtain information about the health and resource needs of a community. Information obtained is generalizable to the entire sampling frame, providing population-based estimates.¹ This methodology is designed to be inexpensive, quick, and scalable, making it ideal for use in disasters. CASPERs can also be used to establish baseline preparedness levels and build capacity to conduct CASPERs after a disaster. The information gathered through a CASPER helps public health practitioners and emergency managers revise and strengthen emergency preparedness efforts.

Objectives

The objectives of the 2019 Kauai CASPER included assessing 1) emergency preparedness levels and evacuation plans, 2) community health status and needs, 3) emergency communication methods, and 4) awareness and perceptions surrounding the ongoing measles outbreak on the mainland. This is the third CASPER to be conducted on Kauai, providing important data on changes in community needs and preparedness levels. Through this effort, over sixty Department of Health (DOH) staff, partners, and vetted community volunteers have been trained to conduct rapid health needs assessments. Each Kauai CASPER has been conducted towards the beginning of hurricane season in the central Pacific basin (June 1 – November 30), which is a natural time to reassess community resources and gaps.

METHODS

CASPER Sampling Methodology

CASPER is a two-stage cluster sampling methodology. The first stage, cluster selection, begins with the determination of a sampling frame, or the area from which the sample is selected and to which the data is generalized. Once the sampling frame is determined, thirty census blocks (termed "clusters"), are randomly selected. The probability of a census block being selected is proportional to the number of housing units located within it.

The second stage of sampling, household selection, is usually completed by survey teams in the field. This stage involves systematic selection of seven households per cluster. Homes are selected by dividing the total number of housing units (occupied or total, depending on the sampling frame) in the cluster by seven (the target number of surveys per cluster) to determine each cluster's sequence number ("n"). Survey teams then attempt to interview every "nth" house, with an ultimate target of 210 surveys (30 clusters x 7 surveys per cluster).¹

2019 Kauai CASPER Methodology

Cluster and Household Selection

For the purposes of this assessment, the sampling frame was occupied housing units on the island of Kauai. 2010 census block data was used to select thirty clusters via random number generation. Kauai island has a total of 2,949 census blocks, 29,758 total housing units, 23,213 occupied housing units, and an estimated population of 72,000.²

As a major tourist destination, many housing units are not occupied by Kauai residents and are classified as "vacant" in census data. In an effort to

understand the preparedness levels and knowledge among island residents, cluster selection was completed using occupied housing unit data rather than total housing unit data. This reduced the likelihood of selecting clusters with primarily short-term vacation rentals and is similar to processes used in the 2018 Kauai CASPER.³

Census data, including census block GIS shape files, total population, total housing units, and occupied housing units (all per census block) were downloaded via the United States Census webpage. Using a random number generator between 1 and 23,213 (the total occupied households on the island), thirty households were selected and the corresponding census blocks were chosen as survey clusters. Selected cluster GIS shapefiles were added as a layer over Google Maps satellite images, as displayed in Figure 1.

Survey planners utilized satellite imagery and Kauai County tax data to pre-select households for participation. Within QGIS, random starting points were generated within each selected cluster. Researchers used these points, along with Kauai County tax parcel shapefiles, to enumerate housing units within each cluster. Counting sequences were calculated by dividing the number of census-block specific occupied housing units by seven (referred to as "n"). Researchers continued through each census block in a serpentine manner until seven participant households and five replacement households were selected. Survey teams were supplied with a detailed map of their cluster and their selected household addresses upon deployment.

This methodology saved time in the field and improved efforts to include additional dwelling units (known as ohana units) that are typically hidden from street view, and therefore not counted during field enumeration processes.

Questionnaire

The 2019 Kauai CASPER questionnaire was developed by the Public Health Preparedness program of the Department of Health's Kauai District Health office, with input from the Kauai District Health Officer, the Kauai Emergency Management Agency, and prior-year CASPER survey team feedback. CASPERs related to hurricanes, floods, and post-disaster needs assessments were also reviewed for content.

All questions were worded in order to collect household-level data due to CASPER being a household-level surveying technique. Forms were not translated to other languages, but survey teams were informed of available translation services as well as how to request those services from the operations team. In an effort to streamline data collection, surveys were collected in the field on tablets using the EpiCollect 5 application.



Figure 1. Satellite imagery of census blocks randomly selected for survey participation.

Training and Survey Teams

Survey teams were comprised of Department of Health staff (both within the Kauai District Health Office and from neighbor islands) with support from the Kauai Medical Reserve Corps and American Red Cross. All team members were required to attend an in-person training or just-in-time training prior to survey deployment. Training included time to practice the questionnaire and use the tablet-based application. Participants were briefed on common safety and security issues and were provided with an interview tip sheet developed by survey planners (Appendix C). Survey teams were paired so that each team had one member with prior CASPER experience and familiarity with the assigned cluster area. While surveying, teams drove state vehicles, wore green vests identifying them as members of the "Department of Health Survey Team," and wore state-issued ID badges.

Community Notification

Numerous methods were utilized to notify the public of CASPER activities, including a Kauai County press release, radio advertisements on two stations, an article in the local newspaper, and social media postings. Notifications began two weeks prior to deployment to provide ample community notice.

Survey Distribution

Between July 11-13, a total of twenty-six survey teams were deployed to conduct door-to-door surveys in the thirty randomly selected clusters. Within each cluster, seven households were systematically selected for participation with an ultimate target of 210 completed surveys (30 clusters x 7 surveys per cluster). Teams were given a detailed map and list of the systematically selected households, a verbal consent script, a cluster-specific tracking sheet, referral forms, extra paper-based questionnaire forms, a copy of the press release describing the survey's objectives, and a tablet to collect electronic data. Copies of all documents were available for household distribution upon request and are provided in Appendices A-F.

To be eligible to participate, respondents had to provide verbal consent, reside on the island at least four months per year, and be over the age of 18.

Survey participants were given drawstring backpacks, solar-powered emergency radios, waterproof bags for storage of important documents, and educational materials on emergency preparedness, tsunamis, hurricanes, flood insurance, hurricane insurance, rat lungworm disease, leptospirosis, mosquito-borne diseases, and Kauai-specific shelter locations. Households that declined to participate in the survey still received the waterproof bags for important document storage and all educational materials.

Data Entry and Analysis

Upon return to the operations center each day, survey teams uploaded completed questionnaires to the project's EpiCollect database. Data was then cleaned, entered and analyzed using Epi Info 7 software.

During analyses, each completed interview was assigned a weight based on the likelihood that household would have been selected for participation. Weighting each interview ensures the data is representative of the entire sampling frame, and results can be generalized to the island of Kauai.

RESULTS

In the thirty clusters, survey teams attempted to contact 333 households, spoke with a resident at 237 households, and ultimately completed a total of 186 interviews. Response rates are shown in Table 1.

Table 1. Calculated response rates for the 2019 Kauai Preparedness CASPER (n=186).

	Response Rates	Percent
Completion Rate	Represents percent of target number of surveys collected <i>(completed surveys/ target surveys)</i>	88.6
Cooperation Rate	Represents the willingness of the community to participate <i>(completed surveys/ total contacted households)</i>	78.5
Contact Rate	Represents the proportion of households where contact was attempted and interview completed <i>(completed surveys/ total attempted households)</i>	55.9

Translation services were available via telephone but not requested by selected households. Two referrals were completed by survey teams and forwarded to appropriate agencies by the Kauai District Health Office's Public Health Preparedness Planner.

Survey results are grouped by subject matter (basic household information, emergency supplies and evacuation plans, disaster communication methods, and measles and vaccine preventable diseases) and summarized in data figures and tables below. Weighted and unweighted data with 95% confidence intervals are provided for responses with frequencies greater than or equal to 5. Data points discussed throughout this report refer to weighted data, which ensure representativeness of the entire sampling frame. Comparison data from the 2018 Kauai CASPER is also included within tables, where questions were repeated across years.

Basic Household Information

Household Composition

The majority of Kauai households were owner-occupied (70%), with a mean and median household size of 3 and 2, respectively. Just over 1% of households had a member who was pregnant and 2% of households had a member who did not speak English. Languages reported other than English included Filipino and Ilocano. Over half (51%) of households had a family member trained in first aid, CPR, or community emergency response team (CERT) in the past five years.

Given the vulnerability of certain age groups during disaster events, surveyors asked about the ages of household members. 5% of Kauai households had at least one child under two years old and 41% of households had at least one adult over sixty-five years old (Figure 2).

To assess the percentage of Kauai residents who may be financially vulnerable during a disaster event, surveyors asked households to select a range for their 2018 combined household income. 23% of Kauai households indicated they made less than \$40,000 in 2018, with over half of those households making less than \$25,000 (Figure 3).

Health Status

In order to determine the percentage of households with a family member who might need additional assistance during an emergency, information was collected on common health or disability related accommodations and household-level preparedness to care for such members.

15% of Kauai households had members requiring one or more type of special assistance, including ADA accessible accommodations (6%), refrigeration for essential medication (6%), electricity for a medical device (6%), caregiving assistance for a disability or illness (5%), or paratransit service (3%). Approximately 53% of households felt very prepared to care for members who require such assistance.

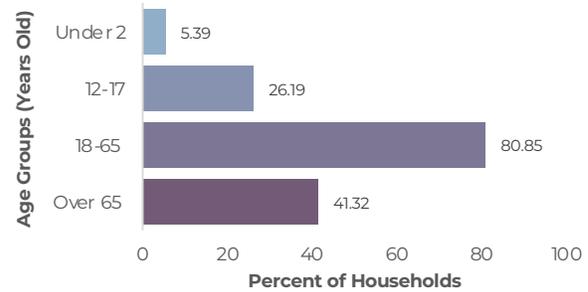


Figure 2. Percent of Kauai households with household member(s) in each age group (n=23,213).

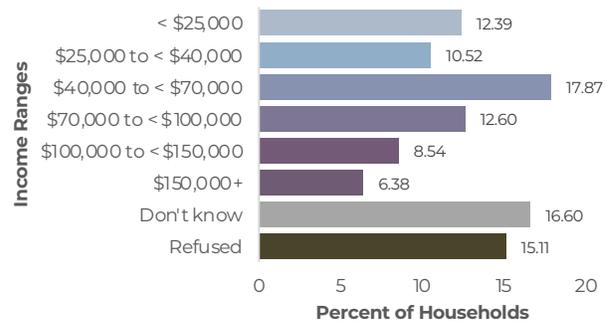


Figure 3. Percent of Kauai households within each 2018 combined household income range (n=23,213).

Table 2. Kauai 2019 CASPER basic household information survey questions with unweighted (n= 186) and weighted (n=23,213) results and comparable 2018 CASPER survey results (weighted n=23,084).

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent*	2019 95% CI	2018 Weighted Percent	2018 95% CI
Basic Household Information							
Does your household own or rent this residence?							
Own	130	69.89	16319	70.44*	(69.84, 71.02)	66.53	(65.92, 67.14)
Rent	51	27.42	6196	26.74*	(26.18, 27.32)	31.54	(30.95, 32.15)
Other	3	1.61	433	-	-	-	-
Don't know	2	1.08	221	-	-	-	-
Is anyone in your household pregnant?							
Yes	3	1.61	332	-	-	-	-
No	181	97.31	22572	97.42*	(97.21, 97.62)	97.89	(97.79, 98.07)
Don't know	1	0.54	111	-	-	-	-
Refused	1	0.54	155	-	-	-	-
Is there an adult in your household that does not speak English?							
Yes	4	2.15	461	-	-	-	-
No	182	97.85	22708	98.01*	(97.82, 98.18)	98.56	(98.40, 98.71)
In the past 5 years, has anyone in your household taken training in first aid, CPR, or community emergency response team?							
Yes	95	51.08	11909	51.40*	(50.76, 52.04)	49.27	(48.62, 49.91)
No	82	44.09	10164	43.87*	(43.23, 44.51)	50.25	(49.61, 50.90)
Don't know	9	4.84	1096	4.73*	(4.47, 5.01)	0.48	(0.40, 0.58)

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent*	2019 95% CI	2018 Weighted Percent	2018 95% CI
Basic Household Information							
Does anyone in your household require the following assistance during an emergency?							
ADA accessible accommodations	11	5.91	1463	6.31	(6.01, 6.63)		
Refrigeration for essential medication	11	5.91	1343	5.80	(5.50, 6.11)		
Electricity for a medical device	11	5.91	1279	5.52	(5.23, 5.82)		
Caregiving assistance for a disability or illness	9	4.84	1268	5.47	(5.19, 5.77)		
Paratransit service	5	2.69	636	2.74	(2.54, 2.96)		
Hospital/home care bed	4	2.15	588	-	-		
How prepared is your household to care for such member(s) during an emergency?							
Very prepared	16	55.17	1896	52.88	(51.24, 54.51)		
Somewhat prepared	10	34.48	1275	35.56	(34.01, 37.14)		
Not prepared	1	3.45	193	-	-		
Don't know	2	6.90	221	-	-		

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Emergency Supplies

The majority of Kauai households (79%) had some level of emergency supply kit, including water, food, flashlights, extra batteries, and other preparedness materials. Further, 87% of households had a first aid kit, 34% had an emergency generator, 89% had smoke detectors in their home, 70% had a fire extinguisher, and 57% had an emergency radio.

When asked about the importance of having emergency supplies on hand for disaster preparation, 81% of Kauai households believed it was very important and 18% believed it was somewhat important.

Prescription medication (if applicable), non-perishable food, and water supplies were assessed to determine the current readiness of Kauai households. 61% of Kauai households had at least one household member requiring daily prescription medication; 94% of those households had a seven-day supply and 80% had a fourteen-day supply. 90% of households had enough non-perishable food for the next three days, 74% for the next seven days, and 44% for the next fourteen days.

Water storage and capacity were separately assessed to take into account households who may not have sufficient water stored, but have the ability to fill empty containers should enough notice be given. Assuming one gallon per person per day, 76% of Kauai households had enough water stored for three days, 48% for seven days, and 28% for fourteen days. However, 97% of Kauai households had the capacity to store enough water for three days, 88% for seven days, and 74% for fourteen days.

On Kauai, only 18% of households have the recommended fourteen day supply of both food and water.

When asked about the main barrier to assembling an emergency kit, 66% of Kauai households indicated they face no barriers. However, for the remaining 34% of households, barriers included cost (8%), lack of storage space (7%), lack of knowledge regarding what is included in a kit (6%), and lack of time to shop for and assemble a kit (5%). 8% of Kauai households did not know their main barrier.

Table 3. Kauai 2019 CASPER emergency supplies survey questions with unweighted (n=186) and weighted (n=23,213) results and comparable 2018 CASPER survey results (weighted n=23,084).

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI	
Emergency Supplies								
Does your household have the following emergency supplies:								
An emergency supply kit (water, food, flashlights, extra batteries, etc.)	Yes	147	79.03	18405	79.44	(78.91, 79.95)	79.26	(78.73, 79.78)
	No	35	18.82	4304	18.58*	(18.08, 19.08)	20.26	(19.75, 20.78)
	Don't know	4	2.15	461	-	-	-	-

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Question		Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Emergency Supplies								
A first aid kit	Yes	161	86.56	20135	86.90*	(86.46, 87.33)	85.92	(85.47, 86.36)
	No	21	11.29	2529	10.92*	(10.52, 11.33)	13.52	(13.08, 13.97)
	Don't know	4	2.15	505	-	-	-	-
An emergency generator	Yes	62	33.33	7944	34.29*	(33.68, 34.90)	29.29	(28.70, 29.88)
	No	116	62.37	14001	60.43*	(59.80, 61.06)	66.92	(66.31, 67.52)
	Don't know	8	4.3	1223	5.28*	(5.00, 5.58)	3.80	(3.56, 4.05)
Smoke detector(s)	Yes	165	88.71	20588	88.86*	(88.45, 89.26)	87.07	(86.86, 87.50)
	No	19	10.22	2316	10.00*	(9.62, 10.39)	11.89	(11.48, 12.31)
	Don't know	2	1.08	265	-	-	-	-
A fire extinguisher	Yes	131	70.43	16229	70.05	(69.45, 70.63)	70.38	(69.79, 70.97)
	No	50	26.88	6280	27.11*	(26.54, 27.68)	28.53	(27.95, 29.12)
	Don't know	5	2.69	660	2.85	(2.64, 3.07)	-	-
An emergency radio	Yes	107	57.53	13261	57.24	(56.60, 57.87)		
	No	75	40.32	9333	40.28	(39.65, 40.92)		
	Don't know	4	2.15	575	-	-		
How important does your household think it is to have emergency supplies on hand for disaster preparation?								
	Very important	150	80.65	18698	80.70*	(80.19, 81.20)	83.44	(82.95, 83.91)
	Somewhat important	33	17.74	4140	17.87*	(17.38, 18.37)	15.60	(15.14, 16.08)
	Not important	3	1.61	332	-	-	-	-
What main barrier does your household face in assembling an emergency kit?								
	No barrier (has kit assembled)	79	42.47	9595	41.41	(40.78, 42.05)		
	No barrier (household hasn't gotten around to it)	43	23.12	5752	24.83	(24.27, 25.39)	43.94	(43.51, 44.79)
	Cost of assembling kit	15	8.06	1783	7.70*	(7.36, 8.05)	10.83	(10.49, 11.30)
	Lack of storage space for kit	13	6.99	1662	7.17*	(6.85, 7.51)	14.35	(13.97, 14.88)
	Lack of knowledge regarding what is needed in a kit	11	5.91	1317	5.69	(5.39, 5.99)	5.94	(5.67, 6.29)
	Lack of time to shop for/ assemble	9	4.84	1146	4.95*	(4.67, 5.23)	17.05	(16.65, 17.63)
	Other	1	0.54	111	-	-		
	Don't know	15	8.06	1804	7.78*	(7.45, 8.14)	6.57	(6.28, 6.93)
Do you or any of your household members require daily prescription medication?								
	Yes	112	60.22	14084	60.79*	(60.16, 61.42)	64.09	(63.47, 64.70)
	No	71	38.17	8690	37.51*	(36.89, 38.13)	35.35	(34.74, 35.97)
	Don't know	3	1.61	394	-	-	-	-
If yes, does your household have enough supply for the next:								
7 days	Yes	107	95.54	13172	93.53	(93.11, 93.92)		
	No	2	1.79	304	-	-		
	Don't know	3	2.68	608	-	-		
14 days	Yes	94	83.93	11295	80.20	(79.53, 80.85)		
	No	14	12.5	2052	14.57	(14.00, 15.16)		
	Don't know	4	3.57	737	-	-		
Does your household currently have enough non-perishable food for the next:								
3 days	Yes	168	90.32	20932	90.35*	(89.96, 90.72)	91.56	(91.20, 91.91)
	No	17	9.14	2126	9.18*	(8.81, 9.55)	8.44	(8.09, 8.80)
	Don't know	1	0.54	111	-	-	-	-

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Question		Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Emergency Supplies								
7 days	Yes	138	74.19	17063	73.65*	(73.08, 74.21)	72.39	(71.81, 72.96)
	No	45	24.19	5755	24.84	(24.29, 25.40)	24.74	(24.18, 25.30)
	Don't know	3	1.61	350	-	-	2.88	(2.67, 3.10)
14 days	Yes	82	44.09	10271	44.33*	(43.69, 44.97)	40.95	(40.32, 41.59)
	No	97	52.15	12062	52.06*	(51.42, 52.70)	54.75	(54.11, 55.40)
	Don't know	7	3.76	836	3.61*	(3.38, 3.86)	4.30	(4.04, 4.57)
Does your household currently have enough water stored for:								
3 days	Yes	146	78.49	17603	75.98*	(75.42, 76.52)	73.97	(73.40, 74.53)
	No	39	20.97	5411	23.35*	(22.81, 23.90)	25.07	(24.52, 25.64)
	Don't know	1	0.54	155	-	-	-	-
7 days	Yes	94	50.54	11196	48.32*	(47.68, 48.97)	41.51	(40.88, 42.15)
	No	90	48.39	11689	50.45*	(49.81, 51.10)	57.04	(56.40, 57.68)
	Don't know	2	1.08	284	-	-	-	-
14 days	Yes	54	29.03	6461	27.89*	(27.31, 28.47)	20.22	(19.71, 20.75)
	No	128	68.82	16229	70.05*	(69.45, 70.63)	76.65	(76.10, 77.19)
	Don't know	4	2.15	479	-	-	3.13	(2.91, 3.36)
Does your household have the capacity to store water for:								
3 days	Yes	180	96.77	22487	97.06	(96.83, 97.27)		
	No	5	2.69	571	2.47	(2.27, 2.67)		
	Don't know	1	0.54	111	-	-		
7 days	Yes	164	88.17	20497	88.47	(88.05, 88.87)		
	No	19	10.22	2251	9.72	(9.34, 10.11)		
	Don't know	3	1.61	420	-	-		
14 days	Yes	138	74.19	17032	73.51	(72.94, 74.08)		
	No	41	22.04	4998	21.57	(21.05, 22.11)		
	Don't know	7	3.76	1139	4.91	(4.64, 5.20)		

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Evacuation Plans

While the majority of Kauai households had disaster communication plans (62%) and important documents in a safe location (69%), less than half (48%) of Kauai households had a designated meeting place immediately outside or close by their home in the event of an emergency.

When asked about the main barrier to emergency evacuation (when advised to do so), over half of Kauai households indicated no barriers existed. Common barriers mentioned included concern about leaving pets (14%), concern about leaving property vacant (8%), uncertainty about where to go (7%), and health or mobility issues (3%).

To better understand resident plans for hurricane sheltering, surveyors asked households where they would seek shelter for each category of hurricane. Shelter locations and household distributions are provided in Table 4 and further detailed in Table 5.

Common "other" shelter locations included a household member's workplace, adjacent building, concrete structure (not specified), military base, and local hospital.

Table 4. Household-level shelter locations for each category of hurricane (n=23,213).

Hurricane Category	Percent of Kauai Households Seeking Shelter at Each Location				
	Shelter in place	Friend/family home	Public shelter	Other	Don't know
1	75%	10%	10%	4%	2%
2	64%	13%	15%	5%	3%
3	48%	18%	22%	5%	7%
4	40%	17%	31%	5%	7%
5	32%	16%	37%	6%	8%

Households were asked whether they lived in a tsunami evacuation zone and, if yes, an open-ended question of to where their household would evacuate. 21% of Kauai households reported living in a tsunami evacuation zone and over 6% were unsure of their status. Of households who reported being located in a tsunami hazard zone, 58% said they would evacuate to higher ground (e.g., Hanapepe

Heights and Kokee for west side residents) and 15% to a public shelter. Although low reported frequencies, almost 10% of households would stay home and 2% did not know to where they would evacuate to if a tsunami warning were issued.

Nearly 65% and 31% of Kauai households had hurricane and flood insurance, respectively. 62% of households stored cash specifically for emergencies, when ATMs and credit card systems may not be

operational, and 95% of Kauai households had access to a reliable vehicle to transport themselves, pet(s), and supplies up to 20 miles away.

Just over 64% of Kauai households had pets, of which 79% had supplies for their pet(s) in their emergency supply kit. In the event of an emergency evacuation, 80% of households with pet(s) indicated they would take their pet(s) with them and 10% would leave them behind.

Table 5. Kauai 2019 CASPER evacuation plans survey questions with unweighted (n=186) and weighted (n=23,213) results and comparable 2018 CASPER survey results (weighted n=23,084).

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Evacuation Plans							
Does your household have the following emergency plans:							
Communication plan (i.e. a list of numbers and designated out-of-town contact)	Yes	113	60.75	14390	62.11*	(61.49, 62.73)	59.50 (58.87, 60.13)
	No	68	36.56	8207	35.42*	(34.81, 36.04)	39.40 (38.91, 40.17)
	Don't know	5	2.69	571	2.47	(2.27, 2.67)	-
Designated meeting place immediately outside or close by your home	Yes	87	46.77	11118	47.99*	(47.35, 48.63)	50.85 (50.20, 51.49)
	No	96	51.61	11719	50.58*	(49.94, 51.22)	48.19 (47.55, 48.84)
	Don't know	3	1.61	332	-	-	-
Copies of important documents in a safe location (e.g. water proof container)	Yes	127	68.28	15899	68.62	(68.02, 69.22)	68.66 (68.06, 69.26)
	No	50	26.88	6111	26.38*	(25.81, 26.95)	29.90 (29.31, 30.49)
	Don't know	9	4.84	1159	5.00	(4.73, 5.29)	-
What main barrier might prevent your household from evacuating when asked to do so?							
No barrier (would evacuate)	88	47.31	11209	48.38	(47.73, 49.02)	38.23 (37.60, 38.86)	
No barrier (would not evacuate)	19	10.22	2308	9.96	(13.41, 14.29)	9.68 (9.31, 10.07)	
Concern about leaving pets	26	13.98	3207	13.84*	(7.94, 8.65)	15.44 (14.98, 15.91)	
Concern about leaving property	16	8.6	1920	8.29*	(7.10, 7.77)	10.51 (10.13, 10.92)	
Uncertainty about where to go	15	8.06	1721	7.43*	(2.38, 2.79)	3.93 (3.69, 4.19)	
Health or mobility issues	5	2.69	597	2.58*	-	3.74 (3.50, 3.99)	
Inconvenient or expensive	3	1.61	376	-	-	5.08 (4.81, 5.37)	
Lack of transportation	2	1.08	265	-	-	4.97 (4.70, 5.26)	
Other	4	2.15	575	-	-	4.28* (4.02, 4.55)	
Don't know	8	4.3	991	4.28*	3.07 (2.85, 3.30)		
If Kauai was threatened by a hurricane, where would your household seek shelter for each category of storm?							
Category 1	Shelter in place	137	73.66	17296	74.65	(74.09, 75.21)	
	Friend/ family home	19	10.22	2244	9.69	(9.31, 10.07)	
	Public shelter	19	10.22	2244	9.69	(9.31, 10.07)	
	Other	7	3.76	855	3.69	(3.45, 3.49)	
	Don't know	4	2.15	531	-	-	
Category 2	Shelter in place	115	61.83	14783	63.80	(63.18, 64.42)	
	Friend/ family home	26	13.98	2999	12.95	(12.52, 13.38)	
	Public shelter	30	16.13	3497	15.09	(14.64, 15.56)	
	Other	9	4.84	1139	4.91	(4.64, 5.20)	
	Don't know	6	3.23	752	3.24	(3.02, 3.48)	

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Evacuation Plans							
Category 3	Shelter in place	85	45.7	11109	47.95	(47.31, 48.59)	
	Friend/ family home	35	18.82	4114	17.76	(17.27, 18.25)	
	Public shelter	43	23.12	5134	22.16	(21.63, 22.70)	
	Other	9	4.84	1094	4.72	(4.46, 5.00)	
	Don't know	14	7.53	1717	7.41	(7.08, 7.76)	
Category 4	Shelter in place	71	38.17	9328	40.26	(39.63, 40.89)	
	Friend/ family home	33	17.74	3893	16.80	(16.33, 17.29)	
	Public shelter	59	31.72	7137	30.80	(30.21, 31.40)	
	Other	10	5.38	1223	5.28	(5.00, 5.58)	
	Don't know	13	6.99	1588	6.85	(6.54, 7.19)	
Category 5	Shelter in place	58	31.18	7463	32.21	(31.61, 32.82)	
	Friend/ family home	30	16.13	3793	16.37	(15.90, 16.85)	
	Public shelter	71	38.17	8615	37.18	(36.56, 37.81)	
	Other	11	5.91	1334	5.76	(5.46, 6.06)	
	Don't know	16	8.6	1964	8.48	(8.12, 8.84)	
Is your household located in a tsunami evacuation zone?							
	Yes	39	20.97	4873	21.03	(20.51, 21.56)	
	No	135	72.58	16805	72.53	(71.96, 73.11)	
	Don't know	12	6.45	1490	6.43	(6.12, 6.76)	
If yes, where would you evacuate to during a tsunami?							
	Higher ground	22	56.41	2843	58.34	(56.95, 59.71)	
	Public shelter	6	15.38	752	15.43	(14.44, 16.47)	
	Stay home	4	10.26	486	-	-	
	Friend/ family home	4	10.26	442	-	-	
	Workplace	1	2.56	129	-	-	
	Local hospital	1	2.56	111	-	-	
	Don't know	1	2.56	111	-	-	
Does your household have flood insurance?							
	Yes	59	31.72	7130	30.77*	(30.18, 31.37)	25.64 (25.08, 26.20)
	No	81	43.55	9993	43.13*	(42.49, 43.77)	53.38 (52.74, 54.02)
	Don't know	46	24.73	6046	26.10*	(25.54, 26.67)	20.98 (20.46, 21.51)
Does your household have hurricane/ high wind insurance?							
	Yes	123	66.13	15136	65.33	(64.72, 65.94)	65.02 (64.60, 65.63)
	No	25	13.44	2933	12.66*	(12.24, 13.09)	17.07 (16.59, 17.56)
	Don't know	38	20.43	5099	22.01*	(21.48, 22.55)	17.91 (17.42, 18.41)
Does your household store cash for emergencies, when ATMs and credit card systems may not be operational?							
	Yes	118	63.44	14363	61.99	(61.36, 62.61)	
	No	60	32.26	7513	32.43	(31.83, 33.03)	
	Don't know	7	3.76	906	3.91	(3.67, 4.17)	
	Refused	1	0.54	387	-	-	
Does your household have access to a reliable vehicle that can transport your household, pet(s) and supplies up to 20 miles away?							
	Yes	176	94.62	22001	94.96	(94.67, 95.23)	
	No	10	5.38	1168	5.04	(4.77, 5.33)	

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Evacuation Plans							
Does your household have pet(s)?							
Yes	117	62.9	14901	64.31*	(63.69, 64.93)	55.06	(54.54, 55.70)
No	69	37.1	8268	35.69*	(35.07, 36.31)	44.94	(44.30, 45.58)
If yes, does your household have supplies for your pet(s) in your emergency kit?							
Yes	94	80.34	11817	79.30*	(78.64, 79.95)	69.21	(68.40, 70.00)
No	22	18.8	2929	19.66*	(19.03, 20.30)	30.79	(30.00, 31.60)
Don't know	1	0.85	155	-	-	-	-
In the event of an emergency evacuation, what would you do with your pet(s)?							
Take pet(s) with you	94	80.34	11982	80.42	(79.77, 81.04)		
Find a safe place for pet(s)	3	2.56	332	-	-		
Leave pet(s) behind	11	9.4	1448	9.72	(9.25, 10.20)		
Would not evacuate due to pet(s)	1	0.85	155	-	-		
Would not evacuate for other reason(s)	2	1.71	221	-	-		
Other	4	3.42	479	-	-		
Don't know	2	1.71	284	-	-		

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Disaster Communication Methods

The largest source of disaster information for Kauai households was television (34%), followed by the internet (13%), local radio (11%), mobile applications (11%), automated calls (10%), social media (9%), word of mouth (coconut wireless, 8%), and other sources (3%). The majority of households got their health-related information from a doctor, nurse, or clinic (64%), followed by the internet (19%), family/ friends (6%), local hospitals (3%), and other sources (4%).

Given Hawaii's isolated geographic location, infrastructure would likely take an extended period

of time to rebuild post-disaster, delaying emergency relief supplies.⁴ To address this concern, in 2017 the Hawaii Emergency Management Agency changed its emergency supply recommendation for all Hawaii residents from 7 to 14-days' worth. At the time of the survey, only 48% of households were aware of that recommendation.

Further, while over 70% of households were signed up to receive weather and other disaster-related alerts, only 49% were familiar with the Kauai Emergency Management Agency's website.

Table 6. Kauai 2019 CASPER disaster communication methods survey questions with unweighted (n=186) and weighted (n=23,213) results and comparable 2018 CASPER survey results (weighted n=23,084).

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Disaster Communication Methods							
What is your household's main source of information regarding disasters and emergency events?							
Television	64	34.41	7811	33.72*	(33.11, 34.33)	28.93	(28.35, 29.52)
Internet	25	13.44	3025	13.06*	(12.63, 13.50)	7.90	(7.56, 8.26)
Local radio	21	11.29	2605	11.24	(10.84, 11.66)		
Mobile application	21	11.29	2528	10.91*	(10.51, 11.32)	6.98	(6.65, 7.31)
Automated call (reverse 911)	19	10.22	2378	10.27*	(9.88, 10.66)	29.63	(29.04, 30.22)
Social media	15	8.06	2015	8.70*	(8.34, 9.07)	11.34	(10.94, 11.76)
Word of mouth (coconut radio)	14	7.53	1944	8.39	(8.04, 8.75)		
Other	6	3.23	752	3.24*	(3.02, 3.48)	14.74	(14.29, 15.20)
Don't know	1	0.54	111	-	-	-	-

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Disaster Communication Methods							
What is your household's main source of health-related information?							
Doctor, nurse, or clinic	118	63.44	14766	63.73*	(63.11, 64.35)	72.48	(71.90, 73.05)
Internet	34	18.28	4311	18.61*	(18.11, 19.11)	12.57	(12.15, 13.00)
Family/ friends	13	6.99	1481	6.39	(6.09, 6.72)	6.86	(6.54, 7.19)
Local hospital	5	2.69	698	3.01*	(2.80, 3.24)	0.96	(0.84, 1.09)
Health department	4	2.15	442	-	-	-	-
Church/ community group	0	0.00	0	-	-	-	-
Other	9	6.99	1032	4.45*	(4.19, 4.73)	3.74	(3.50, 3.99)
Don't know	3	1.61	438	-	-	-	-
In 2017, Hawaii Emergency Management Agency increased the recommended amount of emergency supplies for Hawaii residents from 7 to 14 days' worth. Is your household aware of this recommendation?							
Yes	86	46.24	11021	47.57*	(46.92, 48.21)	30.97	(30.38, 31.57)
No	93	50.00	11249	48.55*	(47.91, 49.20)	67.11	(66.50, 67.71)
Don't know	6	3.23	789	3.40*	(3.18, 3.64)	1.92	(1.75, 2.10)
Refused	1	0.54	111	-	-	-	-
Has anyone in your household signed up to receive weather and other disaster-related alerts?							
Yes	130	69.89	16255	70.16*	(69.56, 70.74)	61.72	(61.09, 62.35)
No	46	24.73	5608	24.20*	(23.66, 24.76)	35.88	(35.27, 36.50)
Don't know	10	5.38	1306	5.64*	(5.35, 5.94)	2.40	(2.21, 2.60)
Is your household familiar with Kauai Emergency Management Agency's website where you can access materials to better prepare for emergencies?							
Yes	89	47.85	11422	49.30*	(48.66, 49.94)	30.97	(30.38, 31.57)
No	90	48.39	10822	46.71*	(46.07, 47.35)	67.11	(66.50, 67.71)
Don't know	7	3.76	925	3.99	(3.75, 4.25)	-	-

*Bolted values with asterisks indicate statistically significant differences between 2019 and 2018 Kauai CASPER data.

Measles Outbreak and Immunizations

Due to the high volume of mainland and international tourists traveling to Hawaii, the islands are vulnerable to frequent introductions of disease. The mainland United States has been experiencing the largest measles outbreak since the disease was eliminated in 2000, and although no cases have yet been reported in Hawaii, the threat remains.

In a July 2019 study published in *The Lancet Infectious Diseases*, researchers indicated Honolulu County was the tenth most likely U.S. county at risk for a resurgence of measles cases.⁵ At the time of survey collection, 81% of Kauai households were aware of the ongoing mainland measles outbreak, with 25% of households very concerned and 34% somewhat concerned the outbreak may impact Kauai.

One of the main factors that puts a community at risk of a vaccine preventable disease outbreak is high rates of immunization exemptions among school children.^{5,6} In Hawaii, parents can opt out of school immunization requirements through submission of a medical or religious exemption. The island of Kauai has the largest percentage of school-age exemptions in the state, with 5.6% of students un- or under immunized and six schools with exemption rates over 15%.^{6,7}

Despite these statistics, survey results indicated vaccination remains important to Kauai households: 73% of Kauai households believed it was very important to stay up to date on recommended vaccines and only 5% believed it was not important.

Table 7. Kauai 2019 CASPER measles outbreak and immunization survey questions with unweighted (n=186) and weighted (n=23,213) results and comparable 2018 CASPER survey results (weighted n=23,084).

Question	Frequency	Percent Households	Projected Households	2019 Weighted Percent	2019 95% CI	2018 Weighted Percent	2018 95% CI
Measles Outbreak and Vaccine Preventable Diseases							
Has your household heard about the ongoing measles outbreak on the mainland?							
Yes	149	80.11	18747	80.92	(80.40, 81.42)		
No	35	18.82	4156	17.94	(17.45, 18.44)		
Don't know	2	1.08	265	-	-		
How concerned is your household that the measles outbreak may impact Kauai?							
Very concerned	49	26.34	5831	25.17	(24.61, 25.73)		
Somewhat concerned	61	32.80	7791	33.63	(33.02, 34.24)		
Not concerned	63	33.87	8047	34.73	(34.12, 35.35)		
Don't know	13	6.99	1500	6.47	(6.16, 6.80)		
How important does your household think it is to stay up to date on recommended vaccines?							
Very important	140	75.27	17008	73.41	(72.84, 73.97)		
Somewhat important	32	17.20	4425	19.10	(18.60, 19.61)		
Not important	10	5.38	1212	5.23	(4.95, 5.53)		
Don't know	4	2.15	523	-	-		

DISCUSSION

The 2019 Kauai CASPER collected valuable data about the island’s residents, including health status and preparedness levels. This information will help to inform state and county emergency response plans, as well as enable the Department of Health to better meet the community’s health needs post-disaster.

Over the past three years, CASPERs have been an enormous capacity building exercise for the Department of Health and partner agencies, allowing collaboration across programmatic silos while increasing community awareness of agencies and the services they provide to the community. CASPERs have also served as valuable outreach and education opportunities, with survey teams providing participating and non-participating households with emergency preparedness and communicable disease resources.

On Kauai, DOH is now capable of rapidly deploying survey teams to assess health needs on the ground post-disaster, which can be used to inform emergency response priorities. Thanks to neighbor island participation in Kauai’s 2019 CASPER, this capability has the potential to be expanded statewide.

Changes and Trends

Where possible, this report analyzes changes over time for questions that were assessed in the same way year-over-year. Tracking community progress on indicators such as emergency supplies, evacuation plans, and communication sources allows

emergency management partners to assess gaps, prioritize limited resources, and evaluate the impact of county, state, and non-profit efforts to achieve an informed and prepared community for all hazards.

Statistically significant increases were observed across several household emergency preparedness indicators. From 2018 to 2019, the percentage of Kauai households with a 14-day supply of non-perishable food increased from 41% to 44%. Over the same time period, the percentage of households with a 14-day supply of water increased from 20% to 28%. Combined, the percentage of households with a 14-day supply of both food and water increased from 14% to 18%, representing a 29% increase over a one year period (Table 4). Improvements in household supply levels are likely related to increased awareness of the state’s recommendations, familiarity with resources available at the local level, and the impact of the flood event in April 2018 and Hurricane Lane in August 2018.

From 2018 to 2019, household-level awareness of the Hawaii Emergency Management Agency’s 14-day food and water recommendation increased 54% (from 31% to 48%).

The percentage of households receiving weather and other disaster-related alerts increased from 62% to 70%, and the percentage of households familiar with the Kauai Emergency Management Agency website increased from 31% to 49%. Though significant improvements have been achieved, we have a long way to go to reach the state’s goal of 14 days’ worth of emergency supplies for all households.

In addition to emergency supplies, Kauai CASPERs have gathered important information on the emergency plans of Kauai residents. Year-over-year, the percentage of households who have emergency communication plans, designated emergency meeting points for their household, and copies of important documents in a safe location has remained static.

In 2019, significant changes were made to the questionnaire to account for the complexity of household evacuation plans, which prior Kauai CASPERs found to vary significantly depending upon hazard severity and type. Household evacuation plans were assessed for each category of hurricane. Responses indicated most households plan to shelter in place for a category 1 hurricane, with only 10% evacuating to a public shelter; for a category 5 hurricane, however, most households plan to evacuate, with 37% evacuating to a public shelter. This data will allow emergency managers to make informed decisions regarding establishing shelter facilities, as well as provide insight to prioritizing limited local resources to augment shelter capacity.

CASPER is a valuable tool to assess knowledge, attitudes, and practices regarding current public health threats. In 2017, at the height of the Zika outbreak in the Americas, DOH gathered baseline data on mitigation measures taken by households to eliminate mosquito breeding sites. The following year, DOH modified the CASPER to assess mental health needs related to a federally-declared flood disaster. In 2019, DOH included a section to assess knowledge of the measles outbreak on the mainland and attitudes regarding the importance of staying up-to-date on recommended vaccines. Adapting the survey tool to include current public health issues ensures the collection of timely information, while also informing DOH's outreach and education efforts.

Recommendations

Based on results from the 2019 Kauai Preparedness CASPER, recommendations are listed below.

1. Two years after its release, 49% of households remain unfamiliar with the state recommendation to maintain a 14-day supply of food and water in an emergency kit, with 35% reporting one of the following barriers: cost (8%), lack of storage space (7%), lack of knowledge regarding what is needed (6%), or lack of time to assemble a kit (5%).

As of July 2019, only 18% of Kauai households have a 14-day supply of food and water in their emergency kit.

Conduct a statewide campaign to increase awareness of the 14-day recommendation, including practical solutions to barriers identified by residents. For some households, however, the barriers to putting together this level of supplies are too significant to overcome. To close the gap, counties should consider

developing public/private partnerships to establish community emergency supply caches.

2. 16% of Kauai households have at least one family member who requires additional assistance during an emergency, such as ADA accommodations, electricity for a medical device, refrigeration for essential medication, caregiving assistance for a disability/illness, hospital/home care bed, or paratransit services. These residents are enormously vulnerable during a disaster, especially if utilities, transportation, and/or health care services are impacted by the event.

Further planning is necessary statewide to ensure that the needs of these residents can be supported during an emergency. Specific preparedness guidance should be developed for this population, which provides clear information on what resources and services are available in Hawaii's designated evacuation shelters.

3. The percentage of Kauai households indicating they would evacuate to a public shelter increases with each category of hurricane, with 37% planning to evacuate to a public shelter for a category 5 storm. This far exceeds the county's shelter capacity. Hurricane evacuation shelters in Hawaii are considered shelters of last resort to be used at one's own risk, providing some protection for residents and visitors without a safer alternative. Most evacuation shelters across the state have not been hardened to withstand anything greater than a severe tropical storm.⁸

Additional planning is needed with ESF-6 mass care partners to determine how to accommodate the number of residents who plan to evacuate to a public shelter during a major hurricane event. While household perception of the safety of hurricane shelters was not assessed, the data suggests that there is a misconception regarding the safety of these facilities for shelter purposes. Further education is needed statewide on sheltering-in-place versus evacuating to public shelters. In order to reduce demand for sheltering, especially during major hurricane events, the state should consider pursuing tax incentives for households and businesses who choose to harden their homes/facilities.

4. Of households located in a tsunami evacuation zone, nearly 10% indicated they would shelter in place if a tsunami warning were issued, while 15% indicated that they would evacuate to a public shelter. This is problematic since all residents located in a tsunami hazard zone are advised to evacuate when a tsunami warning is issued and Kauai County does not open evacuation shelters during tsunami warnings.

An educational campaign should be implemented to raise awareness surrounding tsunami evacuation zones and appropriate evacuation plans.

Limitations

CASPER methodology is based on the systematic selection of households within randomly selected census blocks. For the purposes of the 2019 Kauai CASPER, 2010 U.S. Census Bureau data was used as the most recent data available. The island of Kauai has experienced significant growth since the 2010 census was conducted, and the total number of occupied households used for the weighting and data analyses is, therefore, out of date. Changes to the overall number, composition, and geographic location of occupied housing units is not reflected in the data used for census block and household selection processes.

Survey teams had to replace some systematically selected households after three attempts with no answer, household refusal, household inaccessibility, or household ineligibility (not a full-time resident). Replacement of selected households could affect the representativeness of the data.

Certain high-risk groups, particularly homeless or transient residents, are excluded by CASPER's census block and household selection method. These residents are likely to have significantly higher needs and fewer available resources during and after a disaster. Emergency planners should take this into account when using this data to inform preparedness and response plans.

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Images were accessed through the Kauai District Health Office's Canva subscription service.



APPENDIX A

To be completed by team BEFORE the interview										
Date (MM/DD/YY):	Cluster Number:	Survey Number:								
Interview Team Members:										
First, we would like to ask about basic household information.										
<p>Q1. Including yourself, how many people live in your household? _____</p> <p>Of those, how many are:</p> <table border="1"> <tr> <td>Less than 2 years old</td> <td></td> </tr> <tr> <td>2-17 years old</td> <td></td> </tr> <tr> <td>18-65 years old</td> <td></td> </tr> <tr> <td>More than 65 years old</td> <td></td> </tr> </table> <p><input type="checkbox"/> DK <input type="checkbox"/> Refused</p>	Less than 2 years old		2-17 years old		18-65 years old		More than 65 years old		<p>Q5. Do you or any of your household members require the following assistance during an emergency? (check all that apply)</p> <p><input type="checkbox"/> ADA accessible accommodations (wheelchair, assistance for blindness, deafness, etc.)</p> <p><input type="checkbox"/> Electricity for a medical device</p> <p><input type="checkbox"/> Refrigeration for essential medication</p> <p><input type="checkbox"/> Caregiving assistance due to a disability/ illness</p> <p><input type="checkbox"/> Hospital/ home care bed</p> <p><input type="checkbox"/> Paratransit service</p> <p><input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> None of the above</p> <p><input type="checkbox"/> DK</p> <p><input type="checkbox"/> Refused</p>	<p>Q6. Is there an adult in your household who does not speak English?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q6.a If yes, what language(s) do they speak? _____</p>
Less than 2 years old										
2-17 years old										
18-65 years old										
More than 65 years old										
<p>Q2. Does your household own or rent this residence?</p> <p><input type="checkbox"/> Own <input type="checkbox"/> Rent <input type="checkbox"/> Other <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>	<p>Q5.a If yes, how prepared are you to care for your household member(s) that require assistance during an emergency?</p> <p><input type="checkbox"/> Very prepared</p> <p><input type="checkbox"/> Somewhat prepared</p> <p><input type="checkbox"/> Not prepared</p> <p><input type="checkbox"/> DK</p> <p><input type="checkbox"/> Refused</p>	<p>Q7. Which range best describes your annual household income from all sources (before taxes) in 2018?</p> <p><input type="checkbox"/> Less than \$25,000</p> <p><input type="checkbox"/> \$25,000 to less than \$40,000</p> <p><input type="checkbox"/> \$40,000 to less than \$70,000</p> <p><input type="checkbox"/> \$70,000 to less than \$100,000</p> <p><input type="checkbox"/> \$100,000 to less than \$150,000</p> <p><input type="checkbox"/> \$150,000 or more</p> <p><input type="checkbox"/> DK</p> <p><input type="checkbox"/> Refused</p>								
<p>Q3. Is anyone in your household pregnant?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>										
<p>Q4. In the past 5 years, has anyone in your household taken training in first aid, CPR, or community emergency response team (CERT)?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>										
Next, we would like to ask you about your household's emergency and evacuation plans.										
<p>Q8. Does your household have the following emergency plans?</p> <p>a. Communication plan (such as a list of numbers and a designated out-of-town contact)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>b. Designated meeting place immediately outside your home or close by in your neighborhood</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>c. Copies of important documents in a safe location (e.g. water proof container)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>	<p>Q10. Does your household currently have enough water stored for 3 days? (assuming 1 gal/person/day)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q10.a If yes, enough water stored for 7 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q10.b If yes, enough water stored for 14 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q10.c Does your household have the capacity to store water for 3 days? (still assuming 1 gal/person/day)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q10.d If yes, capacity to store water for 7 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q10.e If yes, capacity to store water for 14 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>	<p>Q13. How important does your household think it is to have emergency supplies on hand for disaster preparation?</p> <p><input type="checkbox"/> Very important</p> <p><input type="checkbox"/> Somewhat important</p> <p><input type="checkbox"/> Not important</p> <p><input type="checkbox"/> DK</p> <p><input type="checkbox"/> Refused</p>								
<p>Q9. Does your household have the following emergency supplies?</p> <p>a. Emergency supply kit (including water, food, flashlights, extra batteries, etc.)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>b. A first aid kit</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>c. An emergency generator</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>d. Smoke detector(s)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>e. A fire extinguisher</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>f. An emergency radio</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>	<p>Q11. Does your household have enough non-perishable food (canned goods, dried fruit, protein bars) for 3 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q11.a If yes, enough non-perishable food for 7 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q11.b If yes, enough non-perishable food for 14 days?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q12. Does anyone in your household require daily prescription medications?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q12.a If yes, does your household have a 7-day supply of medication for all who need it?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p> <p>Q12.b If yes, a 14-day supply?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> Refused</p>	<p>Q14. What main barrier does your household face in assembling an emergency kit? (select one best answer)</p> <p><input type="checkbox"/> Cost of assembling kit</p> <p><input type="checkbox"/> Lack of storage space for kit</p> <p><input type="checkbox"/> Lack of knowledge regarding what is needed in a kit</p> <p><input type="checkbox"/> Lack of time to shop for and assemble kit</p> <p><input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> No barrier (household has kit assembled)</p> <p><input type="checkbox"/> No barrier (household hasn't gotten around to it)</p> <p><input type="checkbox"/> DK</p> <p><input type="checkbox"/> Refused</p>								

Q15. If Kauai was threatened by a hurricane, where would your household seek shelter for each category of storm?

Hurricane Category (wind speeds)	Shelter in place (at home)	Friend/family's home	Public shelter	Other (specify)	DK	Refused
	1 (75-95 mph)					
2 (96-110 mph)						
3 (111-129 mph)						
4 (130-156 mph)						
5 (157+ mph)						

Q20. Does your household store cash for emergencies, when ATMs and credit card systems may not be operational?
 Yes No DK Refused

Q21. Does your household have access to a reliable vehicle that can transport your household, pet(s), and supplies up to 20 miles away?
 Yes No DK Refused

Q22. Does your household have pet(s)?
 Yes No DK Refused

If yes, please answer the following:

Q22.a If your household had to evacuate due to an emergency, what would you do with your pet(s)?

- Take pet(s) with you
- Find a safe place for pet(s)
- Leave pet(s) behind
- Would not evacuate because of pet(s)
- Would not evacuate for other reason(s)
- Other _____
- DK
- Refused

Q22.b Does your household have supplies for your pet(s) in your emergency kit?
 Yes No DK Refused

Q16. Is your household located in a tsunami evacuation zone?
 Yes No DK Refused

Q16.a If yes, where would your household evacuate for a tsunami?

Q17. Does your household have flood insurance?
 Yes No DK Refused

Q18. Does your household have hurricane/ high wind insurance?
 Yes No DK Refused

Q19. What main barrier might prevent your household from evacuating when advised to do so? (select one best answer)

- Concern about leaving property vacant
- Lack of transportation
- Uncertainty about where to go
- Health or mobility issues
- Concern about leaving pet(s)
- Inconvenient or expensive
- Other _____
- No barriers (household will evacuate)
- No barriers (household would choose not to evacuate)
- DK
- Refused

Now we would like to briefly ask you about your household disaster communication methods.

Q23. What is your household's main source of information regarding disasters or emergency events? (select one best answer)

- TV
- Automated call (e.g. reverse 911)
- Internet
- Social media
- Mobile application
- Local radio
- Word of mouth (coconut wireless)
- Other _____
- DK
- Refused

Q24. What is your household's main source of health-related information? (select one best answer)

- Doctor, clinic, or nurse
- Family or friends
- Internet
- Local hospital
- Health department
- Church or other community group
- Local school
- Other _____
- DK
- Refused

Q25. In 2017, Hawaii Emergency Management Agency increased the recommended amount of emergency supplies for Hawaii residents from 7 to 14 days' worth.

Is your household aware of this recommendation?
 Yes No DK Refused

Q26. Have you or anyone in your household signed up to receive weather and other disaster-related alerts?
 Yes No DK Refused

Q27. Is your household familiar with the Kauai Emergency Management Agency's website (www.kauai.gov/kema) where you can access materials to better prepare for emergencies?
 Yes No DK Refused

Finally, we would like to ask you about measles and vaccine preventable diseases.

Q28. Has your household heard about the ongoing measles outbreak on the mainland?
 Yes No DK Refused

Q29. How concerned is your household that the measles outbreak may impact Kauai?

- Very concerned
- Somewhat concerned
- Not concerned
- DK
- Refused

Q30. How important does your household think it is to stay up to date on recommended vaccines?
 Very important
 Somewhat important
 Not important
 DK
 Refused

APPENDIX B



DEPARTMENT OF HEALTH

DAVID Y. IGE
GOVERNOR

BRUCE S. ANDERSON, Ph.D.
DIRECTOR

FOR IMMEDIATE RELEASE
July 1, 2019

19-044

Hawai'i Department of Health to conduct door-to-door emergency preparedness survey of Kaua'i residents July 11-13

LIHUE – The Kaua'i District Health Office of the Hawaii Department of Health will be conducting a door-to-door survey of Kaua'i residents from July 11 to 13 to assess their readiness for emergencies such as hurricanes, floods and other disasters.

They survey teams, which will be comprised of Department of Health staff with support from the Kaua'i Emergency Management Agency, Kaua'i Medical Reserve Corps, and the American Red Cross, will canvass 210 randomly selected households island-wide.

For security purposes, team members will be wearing vests identifying them as part of the Department of Health survey team and have identification cards.

The brief, 10-minute survey will include questions relating to emergency preparedness, communication preferences, health status and evacuation plans following a disaster. The survey teams will not be collecting names or addresses, and all survey responses will be confidential.

"Our island has recently experienced disasters that have caused serious disruption in access to healthcare and other essential services. This survey will help us to better understand the current resources, plans, and potential needs of Kaua'i families during futures disasters," said Lauren Guest, public health preparedness planner with the Kaua'i District Health Office. "We encourage Kaua'i residents to participate in this survey to improve emergency preparedness for our island."

The survey methodology, known as a Community Assessment for Public Health Emergency Response (CASPER), was developed by the Centers for Disease Control and Prevention to efficiently gather representative data about the health and other resource needs of a community pre- and post-disaster. The CASPER survey has been conducted each year on Kaua'i since July 2017.

"The survey results will build upon our prior CASPER efforts to establish a baseline for the percentage of Kaua'i households that have the necessary supplies to support their families

during an emergency,” Guest said. “In three days, we’ll have valuable data to help the Department of Health be better prepared to meet the community’s needs before, during, and after a disaster.”

Kaua’i residents who have questions about the CASPER survey may contact: Lauren Guest public health preparedness planner, Kaua’i District Health Office, Hawai’i Department of Health, at (808) 241-3496.

#

APPENDIX C



Hawaii CASPER Interview Tips



BEFORE THE INTERVIEW

- Practice with your partner
- Dress appropriately: comfortable clothing; closed-toed shoes; vest & ID
- Assign roles (e.g. driving, navigating, interviewing, etc.)

DURING THE INTERVIEW

- Introduce yourself
- Show empathy and respect
- Remind respondents that their responses are confidential and participation voluntary

ENDING THE INTERVIEW

- Look over the entire questionnaire for completeness
- Thank the respondent and provide pre-filled blue backpack
- Complete referral form when necessary

DOS AND DON'TS OF STANDARDIZATION

- **DO** ask the questions in the **same order** with the **exact wording**
- **DO** read the entire question
- **DO** record answers verbatim
- If respondent needs clarification, **repeat the question first**. If he/she still needs clarification, make sure that you are not changing the nature of the question.
- **DON'T** rephrase questions
- **DON'T** pre-fill answers
- **DON'T** try to finish the respondent's sentences

SYSTEMATIC SAMPLING OF HOUSEHOLDS

- Begin surveying at random starting point in cluster
- If specific interview addresses are not provided, select the nearest house and begin counting
- When you reach your first nth house (calculated by dividing households in cluster by 7), attempt an interview
- Complete tracking form **at every nth house** to indicate if interview was successful or if another attempt/replacement is needed
- Continue in serpentine manner, stopping at every nth house
- **Apartments/Condos/High Rises:** Count each apartment and condo units as individual houses
- **Commercial Buildings/Hotels:** Do not count commercial buildings or hotels when counting every nth house - these are not eligible for CASPER participation
- **Replacement:** Households can only be replaced if they meet one or more of the following categories:
 - 1) inaccessible,
 - 2) vacant,
 - 3) household refuses, or
 - 4) three attempts have been made with no answer

Call OPS with questions related to sampling or replacement.

TRACKING FORM

- Used for tracking **every** household sampled (this means every house you attempt an interview at)
- Each cluster collected on a separate tracking form
- Allows for calculation of response rates - it is **very important** that it is correct and complete
- If necessary, write information to identify households to return to or any notes that you may need to take (e.g., why the household is inaccessible) on the back of the form

SURVEY TIPS

Paper Survey Forms

- Ensure before departing after every interview that questionnaire form is complete (including administrative information at top of each form)

SURVEY TIPS

All Forms

- Begin survey following verbal consent
 - If household not accessible or refuses, note on tracking sheet (if refusal, provide important document bag to household)
- Note which survey number corresponds to which household on tracking sheet
- If helpful, present survey (on tablet or paper) to households to read along with survey team
- Indicate any issues on tracking form for review

SURVEY TIPS

Electronic Survey Forms

- Ensure tablets are charged before departure
 - Tablet passcode: 101010
 - Electronic application: EpiCollect 5
- Save each survey entry following completion
- Upload data upon return to command center each day

Questions or concerns? Contact OPS: 808-241-3555.

APPENDIX D

DAVID Y. IGE
GOVERNOR OF HAWAII



BRUCE S. ANDERSON, Ph.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
KAUAI DISTRICT HEALTH OFFICE
3040 UMI STREET
LIHUE, HAWAII 96766

JANET M. BERREMAN, M.D., M.P.H., F.A.A.P.
DISTRICT HEALTH OFFICER

Community Assessment for Public Health Emergency Response

Hello, we are _____ and _____ with the Department of Health. We have some information we would like to leave with you related to emergency preparedness.

We are also doing a survey to help us respond better to emergencies and disaster events. Your house was randomly selected to participate, and the survey will take about 10 minutes. It is completely anonymous — we will not collect your name or address. Do you have a few minutes to complete the survey?

[WAIT FOR RESPONDENT TO CLEARLY ANSWER YES OR NO].

[IF NO, THANK THEM FOR THEIR TIME.] Thank you very much for your time. Here is some information you might find useful.

[IF YES, CONTINUE.] Do you have any questions before we get started? If we ask a question you would rather not answer, just let us know.

If they would like confirmation that you were sent by the Hawaii State Department of Health, please call:

Lauren Guest
Public Health Preparedness Planner
Kauai District Health Office
Hawaii State Department of Health
3040 Umi Street
808-241-3555

APPENDIX E

Community Assessment for Public Health Emergency Response (CASPER) Tracking Form

County: Kauai Cluster # (1-30): _____ Houses in the Cluster: _____ Team: _____ Date of Interview: 07 / / 19

Instructions: Use one tracking form per cluster. Check where appropriate, but try to choose only one best option for each of the three categories.

Household Number	1	2	3	4	5	6	7	8	9	10	11	12
Survey Number (from questionnaire)												
Access												
House inaccessible	<input type="checkbox"/>											
Answer												
Appears vacant	<input type="checkbox"/>											
No answer after (indicate time)	First visit	<input type="checkbox"/>										
	Second Visit	<input type="checkbox"/>										
	Third visit	<input type="checkbox"/>										
Interview												
Interview Completed	<input type="checkbox"/>											
Refused to participate	<input type="checkbox"/>											
Ineligible to participate	<input type="checkbox"/>											
Partial interview completed (indicate return time)	<input type="checkbox"/>											
"Come back later" (indicate return time)	<input type="checkbox"/>											
Translator needed (specify language)	<input type="checkbox"/>											

*REMINDER: You should not pass this line representing 7 selected (and interviewed) houses unless you replaced a household.

Houses are only eligible for replacement if:

- 1) House is inaccessible (due to locked gate, vicious dogs, damage to property, etc.)
- 2) House appears vacant (nobody lives here anymore)
- 3) Household refuses to participate
- 4) No one is home after three attempts made at least one hour apart
- 5) Household is not eligible to participate (e.g. tourist—to be eligible, they should live here at least 4 months of the year)

APPENDIX F

Community Assessment for Public Health Emergency Response

Kauai County Preparedness CASPER 2019

Confidential Referral Form

Date: 07 / ____ / 2019 Time: __: __

Cluster No.: ____

Interviewer's Initials: ____

Name: _____

Address: _____

Contact Information:

Home telephone: ____ - ____ - ____

Cell phone: ____ - ____ - ____

E-mail: _____

summary of Need:

This section to be completed by the CASPER Operations Section

Referral Made: Yes No

Referred to: _____