

# UnderStandingAmericaStudy

COVID EMA BURST FILE DESCRIPTION & CODEBOOK



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## Contents

<b>1. Introduction</b> .....	<b>2</b>
<b>2. Overview of the COVID EMA Burst File</b> .....	<b>4</b>
2.1 UAS Input Files .....	4
2.2 Obtaining the COVID UAS EMA Burst File .....	5
2.3 Merging with other UAS Data Sets.....	6
<b>3. Variables</b> .....	<b>7</b>
3.1 Identifying and Metadata Variables .....	7
3.1.1 UAS Standard Identifying Variables .....	7
3.1.2 UAS Standard Metadata Variables .....	7
3.1.3 EMA Burst & Monthly Events Panel Dataset Metadata Variables .....	7
3.2 Participant Answers to Burst Survey Questions .....	12
3.2.1 EMA Burst Emotion Variables.....	12
3.2.2 EMA Burst Activity Variables .....	12
3.2.3 EOD Emotion Variables.....	12
3.2.4 EOD Activity Variables .....	12
3.3 Monthly Life Events and Issues Questions .....	27
3.3.1 Event Variables .....	27
3.3.1 Life Circumstance Variables.....	27
3.3.1 Derived Circumstance Variables.....	27
<b>4. Appendix</b> .....	<b>63</b>

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## 1. INTRODUCTION

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This document describes the COVID Ecological Momentary Assessment (COVID EMA) Burst File, part of the Understanding America Study (UAS) at the University of Southern California's Center for Economic and Social Research (CESR). Support for the COVID EMA data set is provided by the National Institute on Aging (5U01AG054580), *Toward Next Generation Data on Health and Life Changes at Older Ages* ("UAS EMA Burst project"). Individuals in the COVID EMA Burst File are a separate cohort within the UAS EMA Burst Project, as described below.

The UAS EMA Burst project aimed to collect a variety of data (EMA, End of day surveys, recordings, accelerometer) at varying frequencies (several times daily, once a day, once a week, once a month). This project was reviewed and approved by the USC IRB (UP-14-00148). Participants in the UAS EMA Burst project are members of the UAS internet panel: <https://uasdata.usc.edu>. The UAS is a nationally representative panel of adults in the U.S. households which are randomly selected from United States Postal Service delivery sequence files. UAS members are adults aged 18 or older in these households who have agreed to answer surveys, on average, once or twice monthly via an online interface.

All UAS members who were 50 years of age or older at the time were invited to fill out an EMA Burst project online consent survey<sup>1</sup> where they were further screened for eligibility. Eligibility required access to a working smartphone with an iOS or Android operating system and a service contract (rather than pay as you go or pre-paid systems) to provide a baseline level of compatibility with the UAS's custom "UAS EMA" smartphone app. Participation in the project consisted of filling out one life-events survey each month, and up to three 7-day bursts over a three-year period. Each day during a burst, prompts (phone beeps, texts) are sent to UAS panel members on their smartphone through the UAS EMA app. Upon receiving a prompt, participants answer about 2 minutes of questions. Burst participants received six prompts in each 24-hour period for seven days, filled out an "End of Day" survey each evening, and an "End of Week" survey at the conclusion of the burst week. Out of the 2,914 invited UAS panel members aged 50 or older, 1,317 qualified and consented to join the project. A total of 885 were able to download and use the app and completed at least one burst. Data from these individuals are included in the project's overall UAS EMA Burst File. These data and the project are available and described on the UAS EMA Burst Data Page.<sup>2</sup>

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<sup>1</sup> Consent surveys for the burst project were UAS 224, UAS 225, and UAS 234. Participants also had the ability to consent through the UAS help desk.

<sup>2</sup> Data and documentation available at <https://uasdata.usc.edu/page/Ema+Burst+File>

**The COVID EMA Burst File** is a sub-collection of the UAS EMA Burst data collection consisting of data from 175 UAS EMA Project participants who completed their first “random”<sup>3</sup> burst in March 2020, as the U.S. was responding to the outbreak of SARS-CoV2. These individuals are sometimes referred to as the “COVID Cohort”. This cohort was invited to participate in up to five additional scheduled “COVID” bursts at intervals between March 2, 2020 to May 17, 2021.

COVID Cohort participants were invited to each scheduled COVID burst. Those who were unable to participate in a given scheduled wave were invited to a second administration of the wave, and to subsequent waves. As such, researchers should be aware that the variable “burst” records the type of burst (random or COVID) as well as the numbered sequence *for each individual participant*. As such a participant’s burst = 4 may not temporally coincide with another participant’s burst = 4 even though it is the fourth burst in the sequence for both respondents. Researchers interested in analyzing bursts temporally should use the variable “burstdate,” which records the first day of the burst period for each participant burst.

The structure and questions of random and COVID bursts are identical. In addition to EMA prompts, participants were invited to complete an end of day (EOD) survey in the evening of each day during the weeklong burst period. The EOD comprises questions that are similar to the EMA prompts but pertain to the entire day rather than a specific moment during the day. The final EOD survey includes additional questions asking participants to reflect on their mood, activities, and social interactions for the entire week that the burst took place. Data from the EOD surveys is also included in the COVID EMA Burst File.

The COVID EMA Burst File can be linked with any UAS survey not already included, as well as other data collections from the UAS EMA Burst project such as the Monthly Event surveys or the UAS EMA Burst File. How to perform that linkage is described later in this document. Available data from the UAS EMA project is listed on the UAS EMA Project page. An updated listing of all available UAS data sets is available on the [UAS All Surveys page](#).

Please send all questions about the data set or this data description to [uas-@mymaillists.usc.edu](mailto:uas-@mymaillists.usc.edu).

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<sup>3</sup> There are two types of bursts that participants may have completed as part of the overall UAS EMA project. All participants were scheduled into a first “random” burst. Those in the COVID Cohort were invited to complete up to five additional scheduled bursts. Those in the main UAS EMA study were invited to complete a second “triggered” burst only if they endorsed certain types of life events in the study’s “Monthly Event Survey.”

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## 2. OVERVIEW OF THE COVID EMA BURST FILE

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### 2.1 UAS Input Files

The COVID EMA Burst File is a dataset that consists primarily of survey responses from week-long bursts. The first burst was fielded in March of 2020 and bursts continued to be fielded through May 2021. The dataset is structured based on burst dates and times. The dataset is constructed as a participant – prompt level dataset. Each row corresponds to a single prompt answered by a UAS participant. Therefore, each participant who completes a weekly burst (6 prompts a day for 7 days) will contribute up to 42 rows of data corresponding to the burst period.

Attached to each participant – prompt row is also data from the EOD survey that corresponds to the day that the prompt was answered. As such, all six participant-prompt rows from a single day will contain the same EOD data. Participants had the ability to answer EOD surveys one day after corresponding burst day. Consequently, the date of the prompt and the date the attached EOD survey was started and completed may not always match.<sup>4</sup>

The COVID EMA Burst dataset contains 36,624 observations (participant – prompts), with 175 respondents participating in the first random burst and 174 individuals participating in at least one subsequent COVID burst. Table 1 presents information on total observations and compliance rates by burst. Random bursts have a compliance rate of 79.4%, while later COVID bursts have a significantly lower compliance rate. Compliance is defined as the participant responding to the prompt by opening the EMA app.

Table 1: Burst Statistics

Quantity	Random	COVID 2	COVID 3	COVID 4	COVID 5	COVID 6
Total Observations (Prompts)	7,350	7308	6,888	6,132	5,166	3,780
Total Bursts	175	174	164	146	123	90
Compliance Rate (Prompts)	79.4%	76.0%	72.5%	75.5%	75.2%	73.8%

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<sup>4</sup> Users will be able to ascertain if the date of the EMA and the prompt were completed on the same day by comparing the `alarmdate` variable and `EOD_start_date` within the same row. These variables are described later in the document. Researchers will have to exert their own judgement regarding the validity of EOD survey responses that pertain to the day prior or later.

Table 2: Compliance Rate (Prompts) by Burst Day

Burst Day	Random	COVID 2	COVID 3	COVID 4	COVID5	COVID 6
Day 1	72.1%	64.9%	58.1%	68.4%	72.2%	68.1%
Day 2	82.1%	77.3%	75.6%	78.2%	76.4%	76.8%
Day 3	81.8%	78.3%	77.2%	77.7%	78.1%	77.0%
Day 4	82.2%	77.4%	73.9%	77.0%	78.5%	78.5%
Day 5	79.8%	80.8%	75.5%	75.4%	75.4%	72.2%
Day 6	78.7%	75.4%	76.0%	74.2%	72.3%	73.3%
Day 7	79.3%	78.2%	71.2%	77.4%	73.1%	71.1%

Table 2 contains compliance rates by day of burst in the participant’s week-long burst sequence. Compliance rates are lowest on the first day of the burst for both random and all quantities of COVID bursts. For most burst types compliance typically peaks in the middle of the burst period (day 3 or day 4).

In addition to responses to week-long bursts, each participant – prompt row contains participant information related to the timing and date of the prompt, the burst type, demographic and other variables taken from the UAS Monthly Events Panel Dataset, and data on life experiences from the most recent UAS Monthly Events Survey.<sup>5</sup> Information on demographic variables included in the dataset can be found in the [MyHousehold Codebook](#).<sup>6</sup> Demographic and other variables taken from the UAS Monthly Events Survey are constant within bursts but time-varying across bursts for participants that have completed multiple bursts.

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## 2.2 Obtaining the COVID UAS EMA Burst File

The COVID EMA Burst File is available for download in STATA format from the [UAS website](#). If you would like the data in a different format, such as SAS, please email your request to [uas-l@mymaillists.usc.edu](mailto:uas-l@mymaillists.usc.edu).

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<sup>5</sup> A small number of burst participants had not completed a UAS Monthly Events Survey prior to being selected for a random burst. In those cases, variables are taken from the first UAS Monthly Events Survey they answered after being selected for a random burst.

<sup>6</sup> The My Household survey is administered quarterly to all participants. To provide background information about the participant and household, the survey asks about key demographics, including age, ethnicity, education, marital status, work status, state of residence, and family structure.

Before accessing the COVID EMA Burst File or other UAS data, one must first obtain permission by registering on the UAS site to download the UAS public release files. Registering with UAS is considered agreeing to the “conditions of use” governing access and usage of the data.

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### 2.3 Merging with other UAS Data Sets

Each UAS file is merged with other files using the unique person identifier variable, *uasid*. This variable, assigned to a participant at recruitment into the UAS panel, stays fixed for each survey taken. For more information about default identification variables included in each survey, such as household identifier, *uashhid*, please visit the [UAS standard variables page](#).

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### 3. VARIABLES

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The variables included in the COVID EMA Burst File are distinguished both by source and content. Data originating from participant answers to prompts and the End of Day survey in a week-long burst are directly collected from the participant. Variables from the UAS Monthly Events Panel Dataset are either participant answers to questions from the UAS Monthly Events Survey or derived variables created during the construction of the UAS Monthly Events Panel Dataset. Visit the UAS Monthly Events Panel [page](#) or refer to the [UAS Monthly Events Panel Dataset Description](#) (link downloads pdf) for more information about those data.

For the purposes of this codebook, variables are grouped into four content groups: (1) identifying and metadata variables, (2) participant answers to prompt questions (3) participant answers to the corresponding EOD survey (4) monthly life events and issues variables, and (5) demographic variables (listed in the Appendix, further information on demographic variables can be found in the MyHousehold Codebook).

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#### 3.1 Identifying and Metadata Variables

##### 3.1.1 UAS Standard Identifying Variables

Three identifier variables are included in the COVID EMA Burst File that are UAS Standard Variables. 1) Each participant is uniquely identified with `uasid`. The `uasid` is assigned to a participant at recruitment into the UAS panel, stays fixed across surveys and is the key for linking this dataset to any other UAS file. 2) Households are identified with `uashhid` (original household identifier), which also stays fixed, and 3) `survhhid` (survey-specific identifier), which uniquely identifies the household a panel member belongs to at the time of a given survey, and thus can change for participants if they change households (e.g. after divorce). These variables are included in the appendix.

##### 3.1.2 UAS Standard Metadata Variables

The COVID EMA Burst File contains variables describing when the participant's corresponding Monthly Events survey started and ended (`start_date`, `end_date`, `start_year`, `end_year`, etc.). Versions of these variables with the prefix `EOD` correspond to the participant's end of day survey. These variables are listed in the appendix.

##### 3.1.3 EMA Burst & Monthly Events Panel Dataset Metadata Variables

The COVID EMA Burst File contains variables that describe information about the burst, such as burst type (random or numbered COVID) and describe information about when the burst was started and completed (Table 3). Additionally, the dataset includes similar variables (Table 4) from UAS Monthly Events Panel Dataset related to the Monthly Events Survey the participant took prior to the week-long burst period.

Table 3. Burst Identifying and Metadata Variables

Variable Name	Description
Burst	<p>Type and sequence of burst:</p> <ol style="list-style-type: none"> <li>1. Random</li> <li>2. COVID</li> <li>3. COVID</li> <li>4. COVID</li> <li>5. COVID</li> <li>6. COVID</li> </ol>
inschedule	<p>Yes, indicates that beep answered was part of the beep schedule:</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol> <p>Participants have the option to reset their schedule. When that occurs the previous beeps are no longer part of the active schedule (the new schedule) and are marked as “no.”</p>
alarmtime	<p>Time that the survey beep was received by the participant (local time).</p>
alarmflags	<p>Indicates if the participant opened the prompt. If the first letter of the four letter code code = T then the participant received the prompt and attempted to answer the survey. If the first letter = F they did not.</p>

pingindex	The pingindex is a unique code for the beep.
ema_primkey	Unique identifying number containing the participant's uasid and the number of prompts they have answered (throughout the project), including the current prompt.
begintime	The date and time that the participant started the survey (Pacific time).
endtime	The data and time that the participant finished the survey (Pacific time).
alarmdate	The calendar date the survey prompt took place.
burstdate	The calendar date the weekly burst started (first day of burst).
week_days	Day of the week when the survey prompt took place. 0 = Sunday 1 = Monday 2 = Tuesday 3 = Wednesday

	<p>4 = Thursday  5 = Friday  6 = Saturday</p>
burstrow_(1-6)	The prompt number (1-42) in the overall burst sequence for the corresponding numbered burst for burst participants.
burstday_(1-6)	The day number (1-7) in the overall burst sequence for the corresponding numbered burst for burst participants.

Table 4. Monthly Events Panel Dataset Identifying and Metadata Variables

Variable Name	Description
wave	Wave of the Monthly Event Survey in which non-burst variables were collected.
uas_surv_num	UAS survey number for the Monthly Event Survey in which non-burst variables were collected.
yrmo_covered	The time period (year-month) that the survey questions in the Monthly Event Survey ask about.

yrmo_fielded	The time period (year-month) in which this wave of the Monthly Event Survey was fielded.
sampleinvite_wave	The first wave in which the participant entered the sample of the Monthly Events Survey
sampleinvite_surv	The UAS survey number of the first Monthly Events Survey the participant was invited to participated in.
sampleinvite_yrmo	The time period (year-month) when the participant first entered the Monthly Events Survey sample.
n_co_by_r	The number of Monthly Events Surveys completed by the participant at the time they were recruited for the burst.
cs_001	<p>Interest in the survey:</p> <ol style="list-style-type: none"> <li>1. Very interesting</li> <li>2. Interesting</li> <li>3. Neither interesting nor uninteresting</li> <li>4. Uninteresting</li> <li>5. Very uninteresting</li> </ol>

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## 3.2 Participant Answers to Burst Survey Questions

### 3.2.1 EMA Burst Emotion Variables

When participants answer a burst prompt, a number of questions ask participants about their emotional and physiological state before they received the prompt. The variables created from these responses can be found in Table 5.

### 3.2.2 EMA Burst Activity Variables

After participants complete questions regarding their emotional state they are asked questions related to their activity and thoughts prior to receiving the prompt. These include questions concerning what activity they were engaged in, who they were interacting with, and thoughts about specific issues (like money and stressful events). The variables created from these responses can be found in Table 6.

### 3.2.3 EOD Emotion Variables

At the end of the day, participants are invited to complete a final survey reflecting on the day as a whole. The EOD survey is similar to the burst prompts in that it asks participants about their emotional and physiological state, but the participant is asked to reflect on their entire day rather than the exact moment they are taking the survey. On the last day of the burst, participants are also asked additional questions that pertain to the entire week-long burst period. The variables created from these responses can be found in Table 7.

### 3.2.4 EOD Activity Variables

In the EOD survey, participants are also asked about activities, interactions, and thoughts they had throughout the corresponding burst day. The variables created from these responses can be found in table 8.

Table 5. EMA Burst Emotion Variables

Variable Name	Description
happy	How happy a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
frustrated	How frustrated a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”

cheerful	How cheerful a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
dejected	How dejected/blue/downhearted a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
lonely	How lonely a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
relaxed	How relaxed a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
stressed	How stressed a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”

angry	How angry a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
bodily	How intense a participant’s bodily pain was before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
fatigued	How fatigued a participant felt before the prompt on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”

Table 6. EMA Burst Activity Variables

Variable Name	Description
stressful	Any stressful event occurred before the prompt: <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
economic	Worried about money before the prompt: <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
activity	Activity a participant was engaged in before the prompt: <ol style="list-style-type: none"> <li>1. Work</li> <li>2. Chores</li> <li>3. Leisure</li> </ol>

	<ul style="list-style-type: none"> <li>4. Inactive</li> <li>5. Interact with others</li> <li>6. Eating</li> <li>7. Drinking</li> <li>8. On the telephone</li> <li>9. Other</li> </ul>
location	<p>Participant was at one of the following locations before the prompt:</p> <ul style="list-style-type: none"> <li>1. Home</li> <li>2. Work place</li> <li>3. Others' home</li> <li>4. Bar or restaurant</li> <li>5. Vehicle</li> <li>6. Outside</li> <li>7. Other</li> </ul>
argument	<p>If participant had an argument with someone close to them:</p> <ul style="list-style-type: none"> <li>1. Yes, spouse/ partner / boyfriend / girlfriend</li> <li>2. Yes, close friend or family member</li> <li>3. No</li> </ul>
social	<p>Who participant interacted with before the prompt:</p> <ul style="list-style-type: none"> <li>1. With your spouse or partner, in person</li> <li>2. With your spouse or partner, through</li> </ul>

	<p>email, online, or phone</p> <p>3. With your children, in person</p> <p>4. With your children, through email, online, or phone</p> <p>5. With other family, in person</p> <p>6. With other family, through email, online, or phone</p> <p>7. With close friends, in person</p> <p>8. With close friends, through email, online, or phone</p> <p>9. With other people, in person</p> <p>10. With other people, through email, online, or phone</p> <p>11. With coworkers/colleagues, in person</p> <p>12. With coworkers/colleagues, through email, online, or phone</p> <p>13. No interactions</p>
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Table 7. EOD Emotion Variables

Variable Name	Description
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ed001	How happy a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed002	How frustrated a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed003	How cheerful a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed004	How dejected/blue/downhearted a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed005	How lonely a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed006	How relaxed a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”

ed007	How stressed a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed008	How angry a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed009	How intense a participant’s average bodily pain was that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
ed010	How fatigued a participant felt that day on a 0-100 scale from 0 being “not at all” and 100 being “extremely.”
fi001	How happy a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi002	How sad a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi003	How lonely a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”

fi004	How relaxed a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi005	How cheerful a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi006	How frustrated a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi007	How much bodily pain a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi008	Average level of bodily pain a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi009	Usual level of fatigue a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
fi010	How energetic a participant felt over the past week on a 0-100 scale with 0 being “not at all” and 100 being “extremely”

fi011	How often a participant experienced stress over the past week on a 1-6 scale.
fi012	<p>Participant response to “Over the past week, I had trouble sleeping”:</p> <ul style="list-style-type: none"> <li>0. Strongly disagree</li> <li>1. Disagree</li> <li>2. Neither agree or disagree</li> <li>3. Agree</li> <li>4. Strongly agree</li> </ul>
fi013	<p>Participant response to “Over the past week, I got drowsy during times when sleeping was not allowed:”</p> <ul style="list-style-type: none"> <li>0. Strongly disagree</li> <li>1. Disagree</li> <li>2. Neither agree or disagree</li> <li>3. Agree</li> <li>4. Strongly agree</li> </ul>

Table 8. EOD EMA Burst Activity Variables

Variable Name	Description
ed013_2	<p>Did participant do 30 minutes or more of physical activity that day:</p> <ul style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ul>

ed013a	How much fun or enjoyment one got from physical activity on 0-100 scale with 0 being “not at all” and 100 being “extremely”
ed013b	How much fun or enjoyment one wanted to get from physical activity on 0-100 scale with 0 being “not at all” and 100 being “extremely”
ed015	Any stressful event occurred that day: <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
ed016	Who participant interacted with that day: <ol style="list-style-type: none"> <li>1. With your spouse or partner, in person</li> <li>2. With your spouse or partner, through email, online, or phone</li> <li>3. With your children, in person</li> <li>4. With your children, through email, online, or phone</li> <li>5. With other family, in person</li> <li>6. With other family, through email, online, or phone</li> <li>7. With close friends, in person</li> </ol>

	<p>8. With close friends, through email, online, or phone</p> <p>9. With other people, in person</p> <p>10. With other people, through email, online, or phone</p> <p>11. With coworkers/colleagues, in person</p> <p>12. With coworkers/colleagues, through email, online, or phone</p> <p>13. No interactions</p>
ed017	<p><b>If participant had an argument with someone close to them that day:</b></p> <ol style="list-style-type: none"> <li>1. Yes, spouse/ partner / boyfriend / girlfriend</li> <li>2. Yes, close friend or family member</li> <li>3. No</li> </ol>
ed018	<p><b>Did participant worry about money that day:</b></p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
ed019	<p><b>Did participant have enough money to do everything they wanted to that day</b></p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>

ed020	<p>Did participant feel useful or productive that day?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
ed022	<p>Did participant eat well that day?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
ed023	<p>Did participant skip meals that day?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
ed024	<p>How was participant health that day?</p> <ol style="list-style-type: none"> <li>1. Excellent</li> <li>2. Very good</li> <li>3. Good</li> <li>4. Fair</li> <li>5. Poor</li> </ol>
ed025	<p>Did participant feel well rested that day?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
ed026	<p>Did participant agree or disagree with the statement "I had trouble sleeping" that day:</p> <ol style="list-style-type: none"> <li>1. Strongly disagree</li> <li>2. Somewhat disagree</li> </ol>

	<ul style="list-style-type: none"> <li>3. Neither agree nor disagree</li> <li>4. Somewhat agree</li> <li>5. Strongly agree</li> </ul>
ed027	<p><b>Did participant agree or disagree with the statement “I got drowsy during times when sleeping was not allowed” that day:</b></p> <ul style="list-style-type: none"> <li>1. Strongly disagree</li> <li>2. Somewhat disagree</li> <li>3. Neither agree nor disagree</li> <li>4. Somewhat agree</li> <li>5. Strongly agree</li> </ul>
ed029	<p><b>Eat breakfast with family members that day?:</b></p> <ul style="list-style-type: none"> <li>1. I ate breakfast alone</li> <li>2. I ate breakfast with family members</li> <li>3. I ate breakfast with people I am close to</li> <li>4. I ate breakfast with non-family or people I am not close to</li> <li>5. I did not eat breakfast</li> </ul>
ed029b	<p><b>Eat dinner with family members that day?:</b></p> <ul style="list-style-type: none"> <li>1. I ate dinner alone</li> <li>2. I ate dinner with family members</li> </ul>

	<p>3. I hate dinner with people I am close to</p> <p>4. I ate dinner with non-family or people I am not close to</p> <p>5. I did not eat dinner</p>
ed030	How pleased participant is in the way the functioned with family or close relationships that day on 0-100 scale with 0 being “not at all” and 100 being “extremely”
ed031	How satisfied participant is with their social interactions that day on 0-100 scale with 0 being “not at all” and 100 being “extremely”
ed032	How satisfied participant is with social support that day on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
ed032_rev	<p>Did participant feel like there was enough time to do what they wanted to do that day:</p> <p>1. Yes</p> <p>2. No</p>
ed033	How connected participant felt connected to family/social network that day on a 0-100 scale with 0 being “not at all” and 100 being “extremely”

ed034	How pleased participant is with job function that day on a 0-100 scale with 0 being “not at all” and 100 being “extremely”
ed035	Asks participant if they received exactly six prompts that day. <ol style="list-style-type: none"><li>1. Yes</li><li>2. No</li><li>3. Not sure</li></ol>
ed036	Asks participant how many prompts they received that day (if they did not receive six). <ol style="list-style-type: none"><li>0. None</li><li>1. One</li><li>2. Two</li><li>3. Three</li><li>4. Four</li><li>5. Five</li><li>6. Six</li><li>7. More than six</li></ol>
ed037	Asks participant if they were able to use the app to answer every prompt that day. <ol style="list-style-type: none"><li>1. Yes</li><li>2. No</li></ol>

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### 3.3 Monthly Life Events and Issues Questions

#### 3.3.1 Event Variables

Event variables are indications of significant positive or negative life events that are derived from participant answers to the UAS Monthly Events Survey. There are two basic variable types. The first type (event\_health, event\_death etc.) pertains the month in which the burst occurred. The second type (event\_health\_m1, event\_death\_m1 etc.) applies to the month immediately preceding the month of the burst. These variables can be found in Table 9.

#### 3.3.1 Life Circumstance Variables

The UAS Monthly Events Survey includes questions asking about health, finance, family matters, and retirement. These participant answers are later used to derive event and other derived variables in the UAS Monthly Events Panel Dataset. These Variables are included in the COVID EMA Burst File. Variables based on participant answers to the UAS Monthly Events Survey prior to their burst are listed in Table 10.

#### 3.3.1 Derived Circumstance Variables

Variables related to finance, health, and other events are coded in different ways or derived in the construction of the UAS Monthly Events Panel Dataset. These variables are included in the COVID EMA Burst File and are listed in Table 11.

Table 9. Derived Event Variables

Variable Name	Description
event_health	Dummy variable = 1 if participant had a serious illness/injury in the month in which the burst occurred.
event_unempfinshock	Dummy variable = 1 if participant had a negative financial shock in the month in which the burst occurred.

event_death	Dummy variable = 1 if participant had a death of a close friend or relative in the month in which the burst occurred.
event_retire	Dummy variable = 1 if participant retired in the month in which the burst occurred.
event_positivefin	Dummy variable = 1 if participant had a positive financial shock in the month in which the burst occurred.
any_event	Dummy variable = 1 if any "trig_" variable = 1 in the month in which the burst occurred.
event_health_m1	Dummy variable = 1 if participant had a serious illness/injury in the month that preceded the month in which the burst occurred.
event_unempfinshock_m1	Dummy variable = 1 if participant had a negative financial shock in the month that preceded month in which the burst occurred.
event_death_m1	Dummy variable = 1 if participant had a death of a close friend or relative in the month that preceded the month in which the burst occurred.

event_retire_m1	Dummy variable = 1 if participant retired in the month that preceded the month in which the burst occurred.
event_positivefin_m1	Dummy variable = 1 if participant had a positive financial shock in the month that preceded the month in which the burst occurred.
any_event_m1	Dummy variable = 1 if any “trig_” variable = 1 in the month that preceded the month in which the burst occurred.
missing_middleware	Dummy variable = 1 if individual did not complete the UAS Monthly Events Survey in the month that they completed the burst.
extempburst	Dummy variable = 1 if individual completed the burst after their last UAS Monthly Events Survey.

Table 10. Life Circumstance Variables

Variable Name	Description
le_hrs_s1	Please think about your life-as-a-whole. How satisfied are you with it? Are you completely satisfied, very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?

	<ol style="list-style-type: none"> <li>1. Completely satisfied</li> <li>2. Very satisfied</li> <li>3. Somewhat satisfied</li> <li>4. Not very satisfied</li> <li>5. Not at all satisfied</li> </ol>
le_hrs_srh1	<p>Would you say your health is excellent, very good, good, fair, or poor?</p> <ol style="list-style-type: none"> <li>1. Excellent</li> <li>2. Very good</li> <li>3. Good</li> <li>4. Fair</li> <li>5. Poor</li> </ol>
le001	<p>Did you experience any NEW illnesses or injuries last month?</p> <ol style="list-style-type: none"> <li>1. Yes, I experienced the onset of a new illness or injury last month</li> <li>2. No, I did not have any new illnesses or injuries last month, or had only ongoing illnesses or injuries last month</li> </ol>
le_hrs001a	<p>Serious illness suffered</p> <ol style="list-style-type: none"> <li>1. I fell down</li> <li>2. I was injured in an accident at home</li> </ol>

	<ol style="list-style-type: none"><li>3. I was injured in an accident at work</li><li>4. I was injured due to an accident elsewhere (not at home or work).</li><li>5. I was assaulted</li><li>6. I suffered a heart attack, or was diagnosed with coronary heart disease, angina, congestive heart failure, or other heart problems</li><li>7. I was diagnosed with heart disease</li><li>8. I was diagnosed with cancer or a malignant tumor</li><li>9. I was diagnosed with dementia senility or any other serious memory impairment</li><li>10. I was diagnosed with diabetes</li><li>11. I contracted influenza</li><li>12. I contracted pneumonia</li><li>13. I was diagnosed with kidney disease</li><li>14. I was diagnosed with a chronic lung disease such as chronic</li></ol>
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	<p>bronchitis or emphysema</p> <p>15. I was diagnosed with arthritis or rheumatism</p> <p>16. A doctor told me I have osteoporosis</p> <p>17. I had surgery or any joint replacement because of arthritis</p> <p>18. A doctor told me that I have high blood pressure or hypertension</p> <p>19. I contracted shingles</p> <p>20. A doctor told me that I have an emotional, nervous, or psychiatric problem</p> <p>21. A doctor or other health professional told me that I have a sleep disorder</p> <p>22. I was diagnosed with an illness not listed above</p> <p>23. A doctor or another healthcare professional diagnosed me with the Coronavirus (COVID-19)</p> <p>24. I was told by a doctor or another healthcare professional that I may</p>
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	have contracted the Coronavirus (COVID-19)
le011_1_	Date (year-month-day) on which most serious new illness or injury occurred
le002	<p>Did a close relative suffer the ONSET of a serious illness, or was a close relative injured, or assaulted?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le_hrs001a_rel	<p>Serious illness suffered by relative</p> <ol style="list-style-type: none"> <li>1. He/she fell down</li> <li>2. He/she was injured in an accident at home</li> <li>3. He/she was injured in an accident at work</li> <li>4. He/she was injured due to an accident elsewhere (not at home or work)</li> <li>5. He/she was assaulted</li> <li>6. He/she suffered a heart attack, or was diagnosed with coronary heart disease, angina,</li> </ol>

	<p>congestive heart failure, or other heart problems</p> <ol style="list-style-type: none"><li>7. He/she was diagnosed with heart disease</li><li>8. He/she was diagnosed with cancer or a malignant tumor</li><li>9. He/she was diagnosed with dementia senility or any other serious memory impairment</li><li>10. He/she was diagnosed with diabetes</li><li>11. He/she contracted influenza</li><li>12. He/she contracted pneumonia</li><li>13. He/she was diagnosed with kidney disease</li><li>14. He/she was diagnosed with a chronic lung disease such as chronic bronchitis or emphysema</li><li>15. He/she was diagnosed with arthritis or rheumatism</li><li>16. A doctor told him/her he/she has osteoporosis</li><li>17. He/she had surgery or any joint replacement because of arthritis</li></ol>
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	<p>18. A doctor told him/her that he/she has high blood pressure or hypertension</p> <p>19. He/she contracted shingles</p> <p>20. A doctor told him/her that he/she has an emotional, nervous, or psychiatric problem</p> <p>21. A doctor or other health professional told him/her that he/she has a sleep disorder</p> <p>22. He/she was diagnosed with an illness not listed above</p> <p>23. A doctor or another healthcare professional diagnosed him/her with the Coronavirus (COVID-19)</p> <p>24. He/she was told by a doctor or another healthcare professional that he/she may have contracted the Coronavirus (COVID-19)</p>
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le011_2_	Date (year-month-day) on which the relative's most serious new illness or injury occurred.
le012	Did you get married last month? 1. Yes 2. No
le011_12_	Date (year-month-day) on which the participant indicates they got married last month.
le003	Was there a death of someone close to you last month? 1. Yes 2. No
le011_3_	Date (year-month-day) on which there was a death of someone close to the participant.
le013	Did you have a positive change in your financial situation last month? 1. Yes 2. No
le013_2	Nature of positive financial change

	<ol style="list-style-type: none"><li>1. I got financial assistance from friends or family</li><li>2. I was repaid a loan I had made</li><li>3. I sold property</li><li>4. I changed residence to somewhere with lower rent</li><li>5. I started receiving payments from pension and/or Social Security benefits</li><li>6. I started receiving payments from government/welfare program</li><li>7. I got a raise at my job</li><li>8. I had higher than usual earnings from business or self-employment</li><li>9. I started a new job</li><li>10. I finished paying mortgage</li><li>11. I finished paying off a car loan</li><li>12. I finished paying off a student loan</li><li>13. I completed medical treatment /finished paying medical-related debt</li></ol>
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	<p>14. I finished paying off some other debt</p> <p>15. I obtained a high return to a financial investment</p> <p>16. My spouse got a job/raise</p> <p>17. A child became financially independent, reduction in school/college expenses</p> <p>18. Something else, please specify:</p> <p>19. The benefits I receive from a government or welfare program increased or were higher than expected</p> <p>20. I received financial help from a someone outside my household (other than the government)</p>
le011_13_	Date (year-month-day) on which there was a positive financial change.
le004	<p>Did you have the ONSET of serious marital difficulties (for example, a separation with your spouse or partner)?</p> <p>1. Yes</p>

	2. No
le011_4_	Date (year-month-day) on which participant had onset of marital difficulties.
le014	Did you go on a special vacation last month? 1. Yes 2. No
le011_14_	Date (year-month-day) on which participant went on a special vacation.
le005	Did you have the ONSET of a serious problem with a close friend or relative (including children)? 1. Yes 2. No
le011_5_	Date (year-month-day) on which there was a serious problem with a close friend or relative.

le015	<p>Did you find a new partner last month?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le011_15_	<p>Date (year-month-day) on which there was a new partner found.</p>
le006	<p>Did you become unemployed last month, yet you wanted to be employed?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le011_6_	<p>Date (year-month-day) on which participant became unemployed.</p>
le007	<p>Did you retire from your job last month?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le011_7_	<p>Date (year-month-day) on which participant retired from job.</p>
le008	<p>Did you make a decision last month to retire in the next 6 months?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>

le011_8_	Date (year-month-day) on which participant made decision to retire last month
le_hrs_ia	<p>Last month, did you become employed, change jobs, change from full-time to part-time work, get promoted, become self-employed, start a business, or did your employment status change in some other important way?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le_hrs_h0	<p>Last month, did you work for at least an hour, either in a job, business or through self-employment?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le_hrs_ib	<p>How did your employment status change in last month?</p> <ol style="list-style-type: none"> <li>1. I became employed (I was not working before)</li> <li>2. I changed jobs</li> <li>3. I started working full time (I was working part-time before)</li> <li>4. I started working part time (I was working full time before)</li> <li>5. I got promoted</li> </ol>

	<ul style="list-style-type: none"> <li>6. I became self-employed</li> <li>7. I started a business</li> <li>8. Other</li> <li>9. I got a raise</li> <li>10. I started an additional job</li> <li>11. I stopped working</li> <li>12. I am on leave from work</li> </ul>
le011_11_	Date (year-month-day) on which participant employment change occurred.
flweeklist(1 – 7)	Dates asked about for questions regarding hours worked (le_hrs series).
le_hrs_ic_(day1 – day7)	Hours worked (0-24) for corresponding days (flweeklist).
le_hrs_ic_(da1 – day7)_na	Indicates if participant did not work on corresponding day (flweeklist).

le_hrs_ic_total	Total hours worked last week.
le_hrs_hb	<p>You reported that you worked about (total hours()) hours last week. Is that the typical number of hours you work in a week?</p> <ol style="list-style-type: none"> <li>1. Yes, I usually work about (total hours()) hours</li> <li>2. No, I typically work about ()hours per week</li> <li>3. The number of hours worked varies greatly from week to week</li> </ol>
le_hrs_hb_hours	Typical hours worked in a week (if different from last week).
le_hrs_hc	Best guess for typical hours worked in a week (if it varies greatly from week to week).
uasXXX_le_hrs_hb	le_hrs_hb for corresponding UAS Monthly Events Survey.

le_hrs_ea	<p>In the last 12 months, which of the following statements best describes how your earnings from your job (self-employment or businesses) varied from month to month, if at all? My earnings</p> <ol style="list-style-type: none"> <li>1. Were roughly the same each month</li> <li>2. Occasionally varied from month to month</li> <li>3. Varied quite often from month to month</li> </ol>
le_hrs_eb	<p>Some people get paid at regular times: (i.e. weekly, bi-weekly, or monthly), while some other get paid when they finish a job or complete certain projects. Likewise, some businesses calculate their revenues daily whereas others do so less often. When are payments made to you from your job (or business)?(If you have multiple jobs, answer for the one that pays you more often)</p> <ol style="list-style-type: none"> <li>1. Daily</li> <li>2. Weekly</li> <li>3. Bi-weekly</li> <li>4. Monthly</li> <li>5. Less often than monthly</li> </ol>

	<p>6. Every-time I complete a job, which is often several times in a week</p> <p>7. Only once I complete a project, which is usually once every few weeks or months</p> <p>8. Other, please specify:</p>
uasXXX_le_hrs_eb	le_hrs_hb for corresponding UAS Monthly Events Survey.
le_hrs_id_weekly	Overall, taking into account all sources of income related to your job(s) and/or business, what was your income after taxes or “take home pay” last week?
weekly_income_range_unf	Participant confirmed minimum and maximum if did not answer le_hrs_id_weekly.
flweeklist_8_	First date (day of the week, month, day, year) of the last two weeks asked about le_hrs_id_biweekly.

le_hrs_id_biweekly	Overall, taking into account all sources of income related to your job(s) and/or business, what was your income after taxes or “take home pay” in the last two-week period (i.e. income received between ((8)) and ((7))?
biweekly_income_range_unf	Participant confirmed minimum and maximum if did not answer le_hrs_id_biweekly.
le_hrs_id	Overall, taking into account all sources of income related to your job(s) and/or business, what was your income after taxes or “take home pay” last month?
monthly_income_range_unf	Participant confirmed minimum and maximum if did not answer le_hrs_id_.
le009	Did you have the ONSET of a major financial setback or crisis last month? <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le009_2	What was the nature of the financial setback or crisis you experienced last month? <ol style="list-style-type: none"> <li>1. I, or a spouse or partner lost a job or had work hours</li> </ol>

	<p>and/or income reduced</p> <ol style="list-style-type: none"><li>2. I, or a family member, had significant medical expenses</li><li>3. Got separated or divorced</li><li>4. Lost a spouse or partner</li><li>5. A need arose for long term care for self or family member</li><li>6. I learned that I have unpaid taxes or had a problem with the IRS</li><li>7. I was victim of financial fraud, or I entered into a major financial transaction that I did not completely understand</li><li>8. I incurred losses in my business</li><li>9. I incurred losses in my financial investment(s)</li><li>10. I incurred in penalties and/or higher-than-expected interest from a loan I took</li><li>11. I had losses from gambling</li></ol>
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	<p>12. Had mortgage payment higher than expected</p> <p>13. My rent was increased</p> <p>14. Automobile accident or repair</p> <p>15. I had to provide assistance to family members or friends outside your household</p> <p>16. Something else, please specify:</p>
le011_9_	Date (year-month-day) on which participant financial setback occurred.
le016	<p>Did you move to a new, better neighborhood last month?</p> <p>1. Yes</p> <p>2. No</p>
le011_16_	Date (year-month-day) on which participant moved to a better neighborhood.
le010	<p>Did you have the ONSET of a major legal problem last month?</p> <p>1. Yes</p> <p>2. No</p>

le011_10_	Date (year-month-day) on which participant had major legal problem.
le017	Did you experience the birth of a child or grandchild last month? 1. Yes 2. No
le011_17_	Date (year-month-day) on which participant had birth of grandchild or child.
le_hrs_oopa1	Last month did you incur any expenses related to hospital stays and/or outpatient procedures? 1. Yes 2. No
le_hrs_oopa2	Amount expenses related to hospital bills.
le_hrs_oopb	Amount expenses related to doctor or clinic visits.

le_hrs_oopb_na	No expenses related to doctor or clinic visits.
le_hrs_oopc	Amount expenses related to dental bills.
le_hrs_oopc_na	No expenses related to dental bills.
le_hrs_oopd	Amount expenses related to other medical bills.
le_hrs_oopd_na	No expenses related to other medical bills.
le_hrs_p1	<p>Last month were you often troubled with pain?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le_hrs_p2_option1	<p>How bad was the pain most of the time?</p> <ol style="list-style-type: none"> <li>1. Mild</li> <li>2. Moderate</li> <li>3. Severe</li> </ol>

le_hrs_p3	<p>Have you taken any over-the-counter pain medications last month?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le_hrs_p4	<p>Have you taken any opioid pain medications last month?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
le001_previous	le001 response from two months ago.
le_hrs001a_previous	le_hrs001a response from two months ago.
le001_followup	<p>Check for participants who indicate injury 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. I experienced the onset of a new illness or injury in [2 months ago] and then again in [this month]</li> <li>2. There was only one injury or illness. It</li> </ol>

	<p>started in [2 months ago]</p> <p>3. There was only one injury or illness. It started in [last month]</p> <p>4. There was only one injury or illness. I can't remember whether it started in [2 months ago] or [last month].</p> <p>5. Other. Please explain:</p>
le002_previous	le003 response from two months ago.
le_hrs001a_rel_previous	le_hrs001a_rel_previous response from two months ago.
le002_followup	<p>Check for participants who indicate relative injury 2 months ago and last month.</p> <p>1. There were two separate events for two different close relatives</p> <p>2. There were two separate events for the same relative</p>

	<ol style="list-style-type: none"> <li>3. There was only one event and it started in [2 months ago]</li> <li>4. There was only one event and it started in [last month]</li> <li>5. There was only one event. I can't remember whether it started in [2 months ago] or [last month]</li> <li>6. Other. Please explain:</li> </ol>
le003_previous	le003 response from two months ago.
le003_followup	<p><b>Check for participants who indicate death 2 months ago and last month.</b></p> <ol style="list-style-type: none"> <li>1. A person closed to me passed away [2 months ago], and another one passed away [last month].</li> <li>2. Only one person close to me passed away [2 months ago]</li> <li>3. Only one person close to me passed away [last month]</li> <li>4. Only one person close to me passed away (I can't remember</li> </ol>

	<p>whether it was in [two months ago] or [last month]</p> <p>5. Other. Please explain:</p>
le005_previous	le005 response from two months ago.
le005_followup	<p>Check for participants who indicate problems with close friend or relative 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. There were two separate problems for two different friends or relatives</li> <li>2. There were two separate events for the same friend or relative</li> <li>3. There was only one problem and it started [2 months ago]</li> <li>4. There was only one problem and it started in [last month]</li> <li>5. There was only one problem. I can't remember whether it started in [2 months ago] or [last month]</li> <li>6. Other. Please explain:</li> </ol>

le006_previous	le006 response from two months ago.
le006_followup	<p>Check for participants who indicate they became unemployed 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. I became unemployed [2 months ago]. I stopped being unemployed but became unemployed again [last month].</li> <li>2. I became unemployed only once [2 months ago]</li> <li>3. I became unemployed only once [last month]</li> <li>4. I became unemployed only once. I can't remember whether it happened [2 months ago] or [last month]</li> <li>5. Other. Please explain:</li> </ol>
le007_previous	le007 response from two months ago.

le007_followup	<p>Check for participants who indicate they retired 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. I retired from two jobs</li> <li>2. I retired only once [2 months ago]</li> <li>3. I retired only once [last month]</li> <li>4. I retired only once. I can't remember whether I retired [two months ago] or [last month]</li> <li>5. Other. Please explain:</li> </ol>
le009_previous	le009 response from two months ago.
le009_2_previous	le009_2_ response from two months ago.
le009_followup	<p>Check for participants who indicate they had a major financial setback 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. I had a major setback in [2 months ago], and another one in [last month]</li> </ol>

	<ol style="list-style-type: none"> <li>2. I had a setback in [2 months ago] only</li> <li>3. I had a setback in [last month] only</li> <li>4. There was only one setback. I can't remember whether it happened in [2 months ago] or [last month]</li> <li>5. Other. Please explain:</li> </ol>
le013_previous	le013 response from two months ago.
le013_2_previous	le013_2_ response from two months ago.
le013_followup	<p>Check for participants who indicate they had a positive financial change 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. There were two separate positive changes</li> <li>2. There was only one positive change and it happened [2 months ago]</li> <li>3. There was only one positive change and it</li> </ol>

	<p>happened [last month]</p> <p>4. There was only one positive change. I can't remember whether it happened in [2 months ago] or [last month]</p> <p>5. Other. Please explain:</p>
le014_previous	le014 response from two months ago.
le014_followup	<p>Check for participants who indicate they had a special vacation 2 months ago and last month.</p> <p>1. I went on vacation both [2 months ago] and [last month]</p> <p>2. I only went on vacation once. It started [2 months ago]</p> <p>3. I only went on vacation once. It started [last month]</p> <p>4. I only went on vacation once. I can't remember whether the vacation started [2 months ago] or [last month]</p> <p>5. Other. Please explain:</p>

le016_previous	le016 response from two months ago.
le016_followup	<p>Check for participants who indicate they had moved 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. I moved twice (one [2 months ago] and one [last month])</li> <li>2. I moved only once ([2 months ago])</li> <li>3. I moved only once ([last month])</li> <li>4. I moved only once. I can't remember whether it was in [2 months ago] or [last month]</li> <li>5. Other. Please explain:</li> </ol>
le017_previous	le017 response from two months ago.

le017_followup	<p>Check for participants who indicate they had the birth of a child/grandchild 2 months ago and last month.</p> <ol style="list-style-type: none"> <li>1. Two grandchildren were born (one [2 months ago] and one in ([last month]))</li> <li>2. I experienced the birth of a grandchild only once ([2 months ago])</li> <li>3. I experienced the birth of a grandchild only once ([last month])</li> <li>4. I experienced the birth of a grandchild only once. I can't remember whether he/she was born in [2 months ago] or [last month]</li> <li>5. Other. Please explain:</li> </ol>
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Table 11. Derived Circumstance Variables

Variable Name	Description
le_tothours	le_hrs_hb_hours

le_earn_m_full	<p>Monthly earnings derived from le_hrs_id, le_hrs_id_biweekly (multiplied by 2.1), or le_hrs_id_weekly (multiplied by 4.2). If the participant only provided a range, , if the monthly amount was greater than or equal to \$50,000 and less than \$999,999, it was imputed to \$50,000. Monthly amounts greater than or equal to \$999,999 are extremely unlikely, so any values this high were assumed to be erroneous and were imputed to missing.</p>
totevents	<p>Sum of affirmative responses of le001- le017.</p>
anyevent	<p>Dummy variable that equals "1" if one of the life events variables (le001- le017) equals "1" or more.</p>
oop_hosp	le_hrs_oopa

oop_doc	le_hrs_oopb
oop_dent	le_hrs_oopc
oop_othmed	le_hrs_oopd

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## 4. APPENDIX

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Table 1A. Identifying and Metadata Variables Included in the COVID UAS EMA Burst File

Variable Name	Description
uasid	The identifier of the participant. This identifier is assigned to a participant at recruitment into the UAS and stays with the participant throughout each and every survey he/she participates in. When analyzing data from multiple surveys, the 'uasid' can be used to merge data sets.
survhhid	Uniquely identifies the household a UAS panel member belongs to in a given survey. For instance, if the primary participant and his/her spouse are both UAS members at the time of a given survey, they both receive the same 'survhhid' identifier for that survey. If they subsequently split, they receive two different 'survhhid' in subsequent surveys. They, however, always share the same 'uashhid'. The identifier 'survhhid' is set to missing (.) if no other household members are UAS panel members at the time of the survey. Since individuals can answer the same survey at different points in time

	<p>(which can be relatively far apart if the survey is kept in the field for a prolonged time), it may be possible that, within the same data set, household members have different 'survhhid' reflecting different household compositions at the time they answered the survey. For instance, suppose that the primary participant and his/her spouse are both UAS members. If the primary participant answers the survey when he/she is living with the spouse, but the spouse answers the survey when the couple has split, they receive different 'survhhid'. Hence, the variable 'survhhid' identifies household membership of UAS panel members, at the time the participant answers the survey. Note: in the My Household survey 'survhhid' is set to unknown (.u) for participants who last participated in the My Household survey prior to January 21, 2015.</p>
uashhid	<p>The household identifier of the participant. Every member is assigned a household identifier, stored in the variable 'uashhid'. For the primary participant this identifier equals his or her</p>

	<p>'uasid'. All other eligible members of the primary participant's household (everyone who is 18 or older in the household) who become UAS participants receive the 'uasid' of the primary participant as their household identifier. The identifier 'uashhid' remains constant over time for all participants. Thus it is always possible to find the original UAS household of an UAS panel member (even after they, for example, have moved out to form another household).</p>
<p>uas members</p>	<p>The number of other household members who are also UAS panel members at the time of the survey. Since individuals can answer the same survey at different points in time (which can be relatively far apart is the survey is kept in the field for a prolonged time), it may be possible that, within the same data set, the primary participant of a household has a value of '0', whereas the second UAS household participant has a value of '1'. Therefore 'uasmembers' should be interpreted as the number of household and UAS panel members at the time the participant answers</p>

	<p>the survey. Note: in the My Household survey 'uasmembers' is set to unknown (.u) for participants who last participated in the My Household survey prior to January 21, 2015.</p>
<p>sampletype</p>	<p>Indicates the sampling frame from which the household of the participant was recruited. All UAS recruitment is done through address based sampling (ABS) in which samples are acquired based on postal records. Currently, the variable 'sampletype' takes on three values reflecting three distinct recruitment categories (in future data sets the number of categories may increase due to the incorporation of new recruitment categories):</p> <ol style="list-style-type: none"> <li>1. Nationally Representative Sample</li> <li>2. Native Americans: recruited through ABS, where the probability of drawing a zip-code is a function of the percentage of Native Americans in the zip-code. Primary participants in these zip-codes who are not Native Americans are not invited to join the UAS.</li> <li>3. LA County: recruited through ABS drawing from zip-codes in Los Angeles County.</li> </ol>

batch	<p>Indicates the batch from which the participant was recruited. There are currently the following values this variable takes (in future data sets the number of categories may increase due to the usage of new recruitment samples):</p> <ol style="list-style-type: none"> <li>1. ASDE 2014/01 Nat.Rep.</li> <li>2. ASDE 2014/01 Native Am.</li> <li>3. ASDE 2014/11 Native Am.</li> <li>4. LA County 2015/05 List Sample</li> <li>5. MSG 2015/07 Nat.Rep.</li> <li>6. MSG 2016/01 Nat.Rep. Batch 2</li> <li>7. MSG 2016/01 Nat.Rep. Batch 3</li> <li>8. MSG 2016/01 Nat.Rep. Batch 4</li> <li>9. MSG 2016/02 Nat.Rep. Batch 5</li> <li>10. MSG 2016/03 Nat.Rep. Batch 6</li> <li>11. MSG 2016/04 Nat.Rep. Batch 7</li> <li>12. MSG 2016/05 Nat.Rep. Batch 8</li> <li>13. MSG 2016/08 LA County Batch 2</li> <li>14. MSG 2017/03 LA County Batch 3</li> <li>15. MSG 2017/11 California Batch 1</li> <li>16. MSG 2018/02 California Batch 2</li> <li>17. MSG 2018/08 Nat.Rep. Batch 9 7</li> </ol>
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	<p>18. MSG 2019/04 LA County Batch 4</p> <p>19. MSG 2019/05 LA County Batch 5</p> <p>20. MSG 2019/11 Nat. Rep. Batch 10</p> <p>21. MSG 2020/08 Nat. Rep. Batch 11</p> <p>22. MSG 2020/10 Nat. Rep. Batch 12</p> <p>23. MSG 2021/02 Nat. Rep. Batch 13</p> <p>24. MSG 2021/08 Nat. Rep. Batch 15</p> <p>25. MSG 2021/08 Nat. Rep. Batch 16</p> <p>26. MSG 2022/02 Nat. Rep. Batch 17</p> <p>27. MSG 2022/02 Nat. Rep. Batch 18</p>
<p>primary_participant</p>	<p>Indicates if the participant was the first person within the household to become a member or whether s/he was added as a subsequent member. A household is broadly defined as anyone living together with the primary participant. That is, a household comprises individuals who live together, e.g. as part of a family relationship (like a spouse/child/parent) or in context of some other relationship (like a roommate or tenant).</p>

hardware	Indicates whether the participant ever received hardware or not. Note: this variable should not be used to determine whether a participant received hardware at a given point in time and/or whether s/he used the hardware to participate in a survey. Rather, it indicates whether hardware was ever provided: 1. None 2. Tablet (includes Internet)
start date (start year, start month, start day, start hour, start min, start sec)	Indicates the time at which the participant started the monthly events survey.
EOD_start_date (EOD_start_year, EOD_start_month, EOD_start_day, EOD_start_hour, EOD_start_min, EOD_start_sec)	Indicates the time at which the participant started the end of day survey.
end date (end year, end month, end day, end hour, end min, end sec)	Indicates the time at which the participant completed the monthly events survey.
EOD_end_date (EOD_end_year, EOD_end_month, EOD_end_day, EOD_end_hour, EOD_end_min, EOD_end_sec)	Indicates the time at which the participant completed the end of day survey.

lastmyhh_date	Date on which the participant took their last My Household survey prior to the Monthly Events Survey
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Table 2A. Demographic Variables Included in the COVID UAS EMA Burst File

Variable Name	Label
gender	gender-male
dateofbirth_year	year of birth
age	age
agerange	age range for missing age
citizenus	us citizen

bornus	born in the us
stateborn	state born – fips coding
countryborn	country born
immigrant_status	immigrant status
statereside	state residence – fips coding
maritalstatus	marital status
livewithpartner	living with partner

education	highest level of education
hisplatino	spanish/hispanic/latino
hisplatino_group	spanish/hispanic/latino group
white	white
black	black
nativeamer	american indian or alaska native
asian	asian

pacific	hawaiian/pacific islander
race	race
working	currently working
sick_leave	on sick or other leave
unemp_layoff	unemployed – on layoff
unemp_look	unemployed - looking
retired	retired

disabled	disabled
lf_other	other labor force status
laborstatus	laborstatus
employmenttype	employment type
workfullpart	work full-time or part-time
hourswork	hours of work per week
hhincome	household income

anyhhmember	whether any other hh member
hhmembernumber	number of household members besides r
hhmemberage_1 – hhmemberage_22	hh member 1 age – hh member 22 age
hhmembergen_1 – hhmembergen_22	hh member 1 gender – male – hh member 22 gender - male
hhmemberin_1 – hhmemberin_22	whether hh member 1 is in the hh – whether hh member 22 is in the hh
hhmemberrel_1 – hhmemberrel_22	hh member 1 relationship – hh member 22 relationship
hhmemberuasid_1 – hhmemberuasid_22	hh member 1 uasid – hh member 22 uasid