

Publicly available study measures for O'Neill et al. (doi to be inserted here)

This document describes a subset of the full study procedures utilized for the original data collection by [Ruiz et al. \(2017\)](#).

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Demographics questions & Health review

A. Demographics	
Gender:	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <input type="radio"/> Male <input type="radio"/> Female </div> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div style="text-align: center;">1 = Male</div> <div style="text-align: center;">2 = Female</div> </div> </div>
Age: _____	
Marital Status (Mark only one) <ul style="list-style-type: none"> <input type="radio"/> Single, never married (1) <input type="radio"/> Married (2) <input type="radio"/> Living with partner (3) <input type="radio"/> Divorced (4) <input type="radio"/> Widowed (5) 	
Ethnicity <ul style="list-style-type: none"> <input type="radio"/> Non-Hispanic (1) <input type="radio"/> Hispanic (Please mark one of the following) (2) <div style="display: flex;"> <div style="width: 20%; font-size: small;"> <u>Hispanic</u> coded as 1-9 Note: 9 = non-Hispanic </div> <div style="width: 80%;"> <ul style="list-style-type: none"> <input type="radio"/> Central American or Central American descent (1) <input type="radio"/> Cuban or Cuban descent (2) <input type="radio"/> Dominican or Dominican descent (3) <input type="radio"/> Mexican or Mexican descent (4) <input type="radio"/> Puerto Rican or Puerto Rican descent (5) <input type="radio"/> South American or South American descent (6) <input type="radio"/> More than one (7) <input type="radio"/> Other (<i>please specify</i>): _____ (8) </div> </div>	
Race <ul style="list-style-type: none"> <input type="radio"/> American Indian or Alaskan Native (1) <input type="radio"/> Asian (2) <input type="radio"/> Native Hawaiian or Other Pacific Islander (3) <input type="radio"/> White (4) <input type="radio"/> Black/African American (5) <input type="radio"/> More than one race (6) <input type="radio"/> Unknown or Not reported (7) 	

B. Household Information

How many people live in your household? (*Please include all persons including yourself*)

- ☐ 1 (myself only)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ More: _____

**Number is
used in data**

Do any parents or other relatives live with you?

- ☐ No (1)
- ☐ Yes (2)

C. Caregiver Status

Are you currently providing care for an adult?

- ☐ No – **Go to Section D (1)**
- ☐ Yes – occasionally (2)
- ☐ Yes – part time (3)
- ☐ Yes – full time (4)

D. Education

What is the highest school level you completed?

- ☐ No formal schooling (1)
- ☐ Elementary/primary school (includes grades 1 – 5) (2)
- ☐ Junior High/middle school (includes grades 6 – 8) (3)
- ☐ Some High School but did not graduate (4)
- ☐ High school diploma or equivalent (includes GED) (5)
- ☐ Some college (6)
- ☐ Associate degree (i.e., AA, AS) (7)
- ☐ Bachelor's degree (i.e., BA, AB, BS) (8)
- ☐ Master's degree (i.e., MA, MS, MEd, MSW, MBA) (9)
- ☐ Professional degree (i.e., MD, DDS, DVM, LLB, JD) (10)
- ☐ Doctorate degree (i.e., PhD, EdD) (11)
- ☐ Other (*Please specify*): _____ (12)

E. Employment

Which of the following categories best describes your occupation?

- ☐ **Senior professional/ technical worker** (doctor, professor, lawyer, architect, engineer, etc) (1)
- ☐ **Junior professional/technical worker** (midwife, nurse, teacher, editor, photographer, etc) (2)
- ☐ **Administrator/executive/ manager** (working proprietor, government official, section chief, department or bureau director, administrative cadre) (3)
- ☐ **Office staff** (secretary, office worker) (4)
- ☐ **Skilled worker** (foreman, group leader, craftsman) (5)
- ☐ **Non-skilled worker** (laborer, construction, yard worker) (6)
- ☐ **Police** (7)
- ☐ **Military** (8)
- ☐ **Other security** (not police or military) (9)
- ☐ **Service worker** (housekeeper, cook, waiter, hairdresser, retail sales, child care worker) (10)
- ☐ **Athlete, actor, arts** (11)
- ☐ **Other** (12)
- ☐ **Don't know/ refused** (13)

What is your current employment status?

- ☐ Homemaker – **GO To next page (Economic Status)** (1)
- ☐ Retired – **GO To next page (Economic Status)** (2)
- ☐ Employed full time (> 35 hrs/wk combined in all jobs) (3)
- ☐ Employed part time (\leq 35 hrs/wk combined in all jobs) (4)
- ☐ Not currently employed (5)
- ☐ Other (*Please specify*): _____ (6)

What shift do you typically or mostly work?

- ☐ Day shift (1)
- ☐ Afternoon shift (2)
- ☐ Night shift (3)
- ☐ Irregular shift/on-call (4)
- ☐ Rotating shift (5)

6 = NA

Assets		
Is your house, apartment, or mobile home...? Homeowner	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<input type="radio"/> Owned by you or someone in the household free and clear – without a mortgage or loan <input type="radio"/> Owned by you or someone in the household with a mortgage or loan <input type="radio"/> Rented <input type="radio"/> Occupied without payment
Annual Household Income		
Counting the income of all the members of your household, was your household income for last year...		<input type="radio"/> Less than \$10,000 (1) <input type="radio"/> \$10,001 - \$15,000 (2) <input type="radio"/> \$15,001 – \$20,000 (3) <input type="radio"/> \$20,001 - \$25,000 (4) <input type="radio"/> \$25,001 - \$29,999 (5) <input type="radio"/> \$30,000 - \$40,000 (6) <input type="radio"/> \$40,001 - \$50,000 (7) <input type="radio"/> \$50,001 - \$75,000 (8) <input type="radio"/> \$75,001 - \$100,000 (9) <input type="radio"/> \$100,001 - \$150,000 (10) <input type="radio"/> \$150,001 - \$200,000 (11) <input type="radio"/> \$200,001 - \$250,000 (12) <input type="radio"/> More than \$250,000 (13)
How many people, including yourself were supported by this income during the year?	<div>— —</div>	

HISTORY

Chief Complaint: _____

Allergies: _____

Cardiac History: CardiaxT1: 0 = Negative
1 = Positive

Current Medications: _____

Description

Psychiatric History: _____

Alcohol Use: _____

Drug Use: _____

Serious Illness/Prior Hospitalization: _____

Family History of Stroke or Cardiac Disease: _____

Father	Living	Deceased
Age: _____	Age: _____	Cause: _____

Mother Living Deceased
Age: _____ Age: _____
Cause: _____

OFFICE RN/LVN Signature: _____ Credential: _____ Date: _____

REVIEW OF SYSTEMS (Indicate by dash if review of system is negative or write deferred or N/E if Not Examined)

HEENT: _____	Breast: _____	GI: _____
Resp: _____	Psych: _____	Musc/Skel: _____
GU: _____	Hem/Lymph: _____	Neuro: _____
Skin: _____	CV: _____	Endo: _____

Allergic/Immunologic: _____ Developmental

PHYSICAL EXAMINATION

Vital Signs: Temperature: _____ Pulse: _____ Respirations: _____ BP: _____		SBPT1 DBPT1	Wt. _____ Ht: _____	HeightT1 in Inches
General: _____		GYN/Pelvic: _____	WeightT1 in lbs	
HEENT: _____		GU/Rectal: _____		
Heart/Lungs: _____		Neuro: _____		
Chest/Breasts: _____		Extremities: _____		
Abdomen: _____				

ASSESSMENT/IMPRESSION: _____

The below signatures verify review of medical history and completion of physical assessment:

Signature: _____ Date: _____

Daily Medication Use

Please list all medications you take on a regular basis. For each medication or supplement, please list the frequency (e.g., how often) and the dose (e.g., how much you take each time). This information can be found on the prescription label. For additional examples please see the back of this sheet.

ADULT PRESCRIPTION MEDICATIONS ONLY:

MEDICATION NAME			FREQUENCY	DOSE
Example: Advair ® or Fluticasone/Salmeterol Inhaler			2 puffs/day	250/50 mcg/puff
1.	MedBT1 = Blood Pressure Meds at Time 1 MedLipT1 = Lipid Meds at Time 1 MedCT1 = Other Cardiac Meds at Time 1 MedDT1 = Diabetes Meds at Time 1 <u>Coding:</u> 0 = No 1 = Yes			
2.				
3.				
4.				
5.				
6.				
7.				

ADULT OVER-THE-COUNTER MEDICATIONS OR SUPPLEMENTS (obtained without a prescription)

MEDICATION OR SUPPLEMENT NAME		FREQUENCY	DOSE
Example: Multivitamin		1 tablet/day	n/a
1.			
2.			
3.			
4.			
5.			

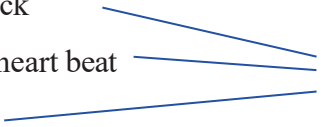
Condition Screening

Please answer each of the following questions as they best apply to you.

1. Do you have or have you had any of the following conditions:

Yes = 1

No = 0

- | | | | | |
|---------------------------|--------------------------|--|---|-------|
| <input type="radio"/> Yes | <input type="radio"/> No | Heart attack |  | CHDT1 |
| <input type="radio"/> Yes | <input type="radio"/> No | Irregular heart beat | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Angina | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Retinopathy | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Neuropathy | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Stroke | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Type I diabetes | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Type II diabetes | | |
| <input type="radio"/> Yes | <input type="radio"/> No | TIA (mini stroke) | | |
| <input type="radio"/> Yes | <input type="radio"/> No | High blood pressure | HTNT1 | |
| <input type="radio"/> Yes | <input type="radio"/> No | High cholesterol | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Renal or kidney disease | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Rheumatoid arthritis | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Fibromyalgia | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Blood clotting disorder | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Liver disease or cirrhosis | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Any condition that requires the use of steroids | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Gout (requiring treatment) | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Anemia | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Lung disease (such as bronchitis, emphysema, asthma) | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Cancer within the last 10 years | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Thyroid disease | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Problems with immune system (hepatitis, AIDS, lupus) | | |
| <input type="radio"/> Yes | <input type="radio"/> No | Any other medical condition(s) not specified in this list: | | |

Questions for Women Only

The following questions are personal. You are not required to answer them and you may choose which ones you would like to answer. This information is being sought because research has shown that the level of estrogen can affect hormone production in women. Because estrogen levels change across a women's menstrual cycle, during pregnancy, while breast-feeding, and after menopause, the information you are willing to provide will help us understand the role of hormones in your hormone data measured through your saliva and blood.

This information is confidential and only will be used to understand your hormone responses.

1. Are you using oral, injected, transdermal or vaginal birth control (estrogen/progesterone, or progesterone only)?

- ☐ Yes
☐ No
☐ Prefer not to answer

0 = No
1 = YES

2. Are you using hormone replacement therapy?

- ☐ Yes
☐ No
☐ Prefer not to answer

0 = No
1 = YES

3. Are you currently pregnant or have you been pregnant within the last year?

- ☐ Yes
☐ No
☐ Prefer not to answer

0 = No
1 = YES

4. Are you currently breast-feeding or have you breast-fed within the last year?

- ☐ Yes
☐ No
☐ Prefer not to answer

0 = No
1 = YES

5. What was the first date of your last menstrual period?

Date: _____ (month)/ _____ (day)/ _____ (year)

- ☐ Prefer not to answer

Typically, how many days are there between your periods (please circle)? 21 28 30 32 Other: _____

6. Have you gone through menopause?

MenopT1

- ☐ Yes – Year: _____
☐ No
☐ Prefer not to answer

0 = No
1 = YES

7. Any additional comments you would like to provide about your reproductive health history (e.g., date of hysterectomy)?

Psychosocial measures

Center of Epidemiologic Studies Depression Scale, 10-item version (CES-D-10)
(Andresen et al., 1994)

Instructions: Below is a list of some of the ways you may have felt or behaved.
Please indicate how often you have felt this way during the past week by using the rating scale provided.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I had trouble keeping my mind on what I was doing.	0	1	2	3
3. I felt depressed.	0	1	2	3
4. I felt that everything I did was an effort.	0	1	2	3
5. I felt hopeful about the future	0	1	2	3
6. I felt fearful.	0	1	2	3
7. My sleep was restless	0	1	2	3
8. I was happy	0	1	2	3
9. I felt lonely	0	1	2	3
10. I could not "get going."	0	1	2	3

Scoring: Items 5 and 8 are reverse coded. The total score is calculated by totaling all items scored after reversing the positive mood items. Possible range for scores is 0-30 with higher scores representing greater degrees of depressed mood.

Citation: Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in well older adults: evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). *American Journal of Preventive Medicine*, 10(2), 77-84.
[https://doi.org/10.1016/S0749-3797\(18\)30622-6](https://doi.org/10.1016/S0749-3797(18)30622-6)

Eysenck Personality Questionnaire (EPQ-N)
(Eysenck & Eysenck, 1975)

The 10-item neuroticism subscale of the EPQ was used to measure trait negative affect. The items were scored in a true/false format and averaged to yield a total neuroticism score. Items were coded such that a higher score equates more of the trait.

We cannot include the EPQ-N items here in these publicly available materials because the EPQ is copyrighted by EdITS LLC (<https://eprovide.mapi-trust.org/instruments/eysenck-personality-questionnaire-revised>).

Citation: Eysenck, H. J., & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire*. London: Hodder & Stoughton.

Ecological momentary assessment survey items

“You have selected the CUFF SURVEY. Complete this survey each time the blood pressure cuff inflates. To begin this survey now, tap the BEGIN button below. To select a different survey, tap the GO BACK button below.”

We would like to ask you some questions about your experiences and interactions since the last cuff inflation.

- Since the previous cuff inflation, have you been around other people at all (example: at a store, in public)?
 - Yes – continue
 - No – move to next section < NO VIGILANCE> Do not wish to respond <NO VIGILANCE>

IF YES ...

Social Vigilance Questionnaire items were administered, but these items cannot yet be made publicly available at the time of this article’s submission for publication.

move to next section <INTERACTIONS>

IF NO ...

- You’ve indicated that you have NOT been around other people since the previous cuff inflation. Is this correct?
 - Yes – continue
 - No – GO TO <YES - VIGILANCE>
 - [Do not wish to respond – continue](#)
- What have you been primarily doing since the last cuff inflation? (pick one)
 - Working by myself
 - Driving Relaxing Exercising Eating
 - Housework/Yard work Sleeping
 - Other
 - [Do not wish to respond](#)

For all below use: (1 – not at all, 7 – extremely; 0 = [Do not wish to respond](#))

- How typical is it for you to be alone during this time of day?
- To what extent have you felt lonely since the last cuff inflation?
- How satisfying was your time alone since the last cuff inflation?
- How interested are you in being around other people right now?
- How happy do you think being around other people would make you feel right now?
- How angry do you think being around other people would make you feel right now?
- How frustrated do you think being around other people would make you feel right now?
- How anxious do you think being around other people would make you feel right now?

move to next section <INTERACTIONS>

- Since the previous cuff inflation, have you had any interactions with another person (interacting with someone in person, by phone, online, text)?
 - Yes – continue
 - No – move to next section <NO INTERACTIONS >
 - [Do not wish to respond <NO INTERACTIONS>](#)

IF YES ...

- Who was your interaction with? (check all that apply)
 - Spouse/Partner
 - Child(ren)
 - Other relative(s)
 - Friend(s)
 - Acquaintance(s)
 - Stranger(s)
 - Coworker(s)
 - Other
 - [Do not wish to respond](#)
- How positive was this interaction? (1 = not at all, 7 = extremely; 0 = [Do not wish to respond](#))
- How negative was this interaction? (1 = not at all, 7 = extremely; 0 = [Do not wish to respond](#))

IF NO ...

- You've indicated that you have NOT had any social interactions since the previous cuff inflation. Is this correct?
 - Yes – continue
 - No – GO TO <YES – INTERACTIONS>
 - [Do not wish to respond - continue](#)
- Why do you think you did not interact with anyone since the last cuff inflation? (select all that apply)
 - No opportunities - was not around other people and received no email, texts, etc.
 - Was around other people but was not approached by anyone
 - Actively avoided interacting with others
 - [Do not wish to respond](#)
- How likely are you to avoid an interaction before the next cuff inflation? (1 – Not at all , 7 - extremely; 0 = [Do not wish to respond](#))
- How likely are you to initiate an interaction before the next cuff inflation? (1 – Not at all, 7 – extremely; 0 = [Do not wish to respond](#))

Carotid artery imaging procedures

B-mode ultrasonography of the left and right carotid arteries was performed. Dicom images were captured for the common (CCA), bifurcation (BIF), and the internal carotid artery (ICA) segments interrogated from 4 standard angles (90°, 150°, 210°, 270°). Consistent with recommendations ([Dogan et al., 2010, 2011](#); [Stein et al., 2008](#)) a Meijer's Carotid Arc (Meijer Medical Ultrasound; Voorschoten, The Netherlands) was used to improve the precision of measurement points and to improve reliability of within-participant measurement over time.

Two readers blinded to the characteristics of the participants interrogated the Dicom images for intima media thickness (IMT) offline using Vascular Research Tools, Version 5.0 (Medical Imaging Applications,

Coralville, IA). IMT was defined as the distance between the intimal-luminal and the medial-adventitial interfaces of the arterial segment.

The software generates average, minimum, and maximum IMT scores for each segment at each angle. The maximum IMT value was chosen as the marker of focus in accordance with prior recommendations ([Allen et al., 1997](#)) and our past work ([Allison et al., 2006](#); [Roepke et al., 2012](#)). Mean of the maximums (mean of the maximum scores for each of the 4 angles for a given segment) were derived for the CCA, BIF, and ICA.

Key cIMT variables

MMFCCA	Mean Max Far Common Carotid Artery
MMBIF	Mean Max Bifurcation
MMICA	Mean Max Internal Carotid Artery
MMBIFICA	Mean Max Combined BIF/ICA

Crime risk score indexing

- Participant residential addresses were collected at study enrollment and imported into Environmental Systems Research Institute's (ESRI) ArcGIS software to be linked with corresponding GPS coordinates.
- Participants' residential GPS coordinates were then linked within the ArcGIS software to geocoded ESRI-derived crime risk data (2014-2020) from Applied Geographic Solutions.
- Total crime risk scores for each participant based on 1-, 5-, and 10-mile radii around their residential address's GPS coordinates were then exported as a CSV file and combined with extant participant data within R software.

See the next page for further details from Applied Geographic Solutions

(<https://appliedgeographic.com/crimerisk/>) regarding methods for creating the Crime Risk Index scores.

CrimeRisk



Version	Release 2021	
Purpose	CrimeRisk is intended to provide an assessment of the relative risk of seven major crime types and their summarization to the block group scale. Relative crime rates are very important in real estate applications, insurance underwriting, shopping center and stand-alone retail facilities.	
Content	CrimeRisk is a block group and higher-level geographic database consisting of a series of standardized indexes for a range of serious crimes against both persons and property. It is derived from an extensive analysis of several years of crime reports from the vast majority of law enforcement jurisdictions nationwide. The crimes included in the database are the "Part 1" crimes and include murder, rape, robbery, assault, burglary, theft, and motor vehicle theft. These categories are the primary reporting categories used by the FBI in its Uniform Crime Report (UCR), with the exception of Arson, for which data is very inconsistently reported at the jurisdictional level. In accordance with the reporting procedures using in the UCR reports, aggregate indexes have been prepared for personal and property crimes separately, as well as a total index. While this provides a useful measure of the relative "overall" crime rate in an area, it must be recognized that these are unweighted indexes, in that a murder is weighted no more heavily than a purse snatching in the computation. For this reason, caution is advised when using any of the aggregate index values. In 2020, 5-Year Projections were added to the database.	
Variables	CRMCYTOTC	Total Crime, Current Year
	CRMCYPERC	Personal Crime, Current Year
	CRMCYMURD	Murder, Current Year
	CRMCYRAPE	Rape, Current Year
	CRMCYROBB	Robbery, Current Year
	CRMCYASST	Assault, Current Year
	CRMCYPROC	Property Crime, Current Year
	CRMCYBURG	Burglary, Current Year
	CRMCYLARC	Larceny, Current Year
	CRMCYMVEH	Motor Vehicle Theft, Current Year
	CRMPYTOTC	Total Crime, 5-Year Projection
	CRMPYPERC	Personal Crime, 5-Year Projection
	CRMPYMURD	Murder, 5-Year Projection
	CRMPYRAPE	Rape, 5-Year Projection
	CRMPYROBB	Robbery, 5-Year Projection

CrimeRisk



CRMPYASST	Assault, 5-Year Projection
CRMPYPROC	Property Crime, 5-Year Projection
CRMPYBURG	Burglary, 5-Year Projection
CRMPYLARC	Larceny, 5-Year Projection
CRMPYMVEH	Motor Vehicle Theft, 5-Year Projection

Detailed Methodology

The primary source of CrimeRisk is a careful compilation and analysis of the FBI Uniform Crime Report databases.

On an annual basis, the FBI collects data from each of about 16,000 separate law enforcement jurisdictions at the city, county, and state levels and compiles these into its annual Uniform Crime Report (UCR). The latest national crime reports can be obtained from the FBI web site in Excel format. While useful, the UCR provides detailed data only for the largest cities, counties, and metropolitan areas. We are now using UCR data from 2014-2020.

Also, some cities are now posting very detailed crime reports to their websites that are available for download. These data have specific locations which are useful for matching against specific block groups. If the data is detailed enough and is available for the last seven years, we use it alongside the FBI UCR data. Currently data for New York, Chicago, Boston, Philadelphia, Baltimore, Seattle, Austin and Mesa fit these criteria, and we are adding more with each data release.

A considerable effort was made to correct a number of problems that are prevalent within the FBI databases, including:

- The standardization of jurisdictional names: the FBI does not employ Census bureau codes in its databases and the jurisdictional names contain numerous typographical errors and format discrepancies which needed to be manually corrected
- Reporting by individual jurisdictions can be inconsistent from year to year, in that data for some jurisdictions is missing for one or more years and required handling
- Reporting for some crime types is inconsistent between jurisdictions. The FBI handles this by simply suppressing the statistics entirely for those areas. This primarily affects the rape

CrimeRisk



category for Illinois, where statistics are suppressed for all but the largest jurisdictions. These missing values were handled via the modeling process, in which rape estimates were prepared for these jurisdictions by using a model which related rape incidence to other crime types

- The standardization of the database to account for jurisdictional overlaps. For example, the California Highway Patrol has jurisdiction over only state and interstate highways in urban areas.
- Crime rates in general have been declining over the past several years, so it was necessary to adjust the historical data to reflect current crime rates.

Once this correction and standardization effort was completed, the database consisted of a time series of seven years of data covering:

- All cities and towns which have their own police agency
- All cities and towns where policing for the local jurisdiction is contracted to a higher level agency but which tracks statistics separately (e.g. the city of Thousand Oaks, California contracts with the Ventura County Sheriff's Department for police services, but the incident reports are separately compiled)
- A record for each state which covers the population not covered by either of the two cases above. This is normally a combination of County Sheriff (or equivalent) and State level jurisdictions. For a very limited number of areas, such as New York City, the local jurisdiction spans several counties.

The initial models were undertaken using a subset of this database. In the smallest cities, a single murder will have a profound effect on the crime rate per 100,000 population that would severely distort the resulting models. A wide range of Census and current year demographic attributes were extracted from AGS' databases for the remaining areas (approximately 10,000 separate "jurisdictions"). This database was then used as the primary modeling database and was used later for scaling purposes. Each of the seven crime types was modeled separately, using an initial range of about 100 socioeconomic characteristics taken from the

CrimeRisk



Census and AGS' current year estimates. Under AGS' no "redlining" policy, no data variables were used that relate to race, ethnicity, ancestry or language spoken at home.

The models constructed typically accounted for over 85% of the variance in crime rates at this "jurisdiction" level, although it should be noted that the results for property crimes were generally more reliable than for personal crimes.

The results of these models were then applied to the block group level using the same demographic attributes compiled at the block group level. The resulting estimates were then scaled to match the master database of jurisdictions. The block groups within each jurisdiction were scaled to match the crime totals for that jurisdiction. For block groups outside of these areas, results were normalized to match the state totals minus the jurisdiction totals within each state.

The final crime rate estimates were then weighted by population and aggregated to the national totals. The results were then converted to indexes relative to the national total.

In 2020, 5-Year Projections were added to the database. Crime Rates are carefully trended forward at the locale, state and national level using the last seven years of the FBI UCR report. Like with the current year data, crime rates are then modelled by block group using socioeconomic characteristics, but these data are based on our 5-year projected demographic data. These estimates are scaled, balanced and normalized similar to the current year data before being converted to indexes relative to the projected national averages.

Sources

Federal Bureau of Investigation, Uniform Crime Report, 2014-2020
Applied Geographic Solutions, most current Estimates and Projections.

Definitions

Source: Federal Bureau of Investigation, Uniform Crime Report

The Uniform Crime Reporting (UCR) Program divides offenses into two groups, Part I and Part II crimes. Each month, participating law enforcement agencies submit information on the number of Part I offenses that become known to them; those offenses cleared by arrest or exceptional means; and the age, sex, and race of persons arrested for each

of the offenses. Contributors provide only arrest data for Part II offenses. The UCR Program collects data about Part I offenses in order to measure the level and scope of crime occurring throughout the Nation. The program's founders chose these offenses because they are serious crimes, they occur with regularity in all areas of the country, and they are likely to be reported to police.

The Part I offenses are:

Criminal homicide – a) Murder and nonnegligent manslaughter: the willful (nonnegligent) killing of one human being by another. Deaths caused by negligence, attempts to kill, assaults to kill, suicides, and accidental deaths are excluded. The program classifies justifiable homicides separately and limits the definition to: (1) the killing of a felon by a law enforcement officer in the line of duty; or (2) the killing of a felon, during the commission of a felony, by a private citizen.

b) Manslaughter by negligence: the killing of another person through gross negligence. Deaths of persons due to their own negligence, accidental deaths not resulting from gross negligence, and traffic fatalities are not included in the category Manslaughter by Negligence.

Rape

In December 2011, the FBI changed their 80-year old definition of rape. As approved, the UCR Program's definition of rape is "Penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim." This broader definition allows for gender neutrality, the penetration of any bodily orifice, penetration by any object or body part, and offenses in which physical force is not involved.

Robbery

The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear. Aggravated assault—An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm. Simple assaults are excluded.

Burglary (breaking or entering)

The unlawful entry of a structure to commit a felony or a theft. Attempted forcible entry is included.

Larceny-theft (except motor vehicle theft)

The unlawful taking, carrying, leading, or riding away of property from the possession or constructive possession of another. Examples are thefts of bicycles, motor vehicle parts and accessories, shoplifting, pocket-picking, or the stealing of any property or article that is not taken by force and violence or by fraud. Attempted larcenies are included. Embezzlement, confidence games, forgery, check fraud, etc., are excluded.

Motor vehicle theft

The theft or attempted theft of a motor vehicle. A motor vehicle is self-propelled and runs on land surface and not on rails. Motorboats, construction equipment, airplanes, and farming equipment are specifically excluded from this category.

**Further
Information**

Contact customer service at 877-944-4AGS or email
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