

BROOKLINE SENIOR CENTER PROJECT DATA FILE PROCESSING

1) David J Dorer PhD, a statistician with 40 years of experience, is consulting and doing research through Dorer Community Service Foundation Inc with the Brookline Senior Center Staff. This research includes an analysis of the US Census American Community Survey (ACS). To continue with the proposed plans [1] access to the Senior Center participant address list will be required.

2) An analysis that can be conducted using the address list follows. The Brookline Senior Center is planning a van service. Using the address list, we can count the number of participants in each census tract. The geographical center of the census tract can be computed using the US Census mapping data. Knowing the number of participants in each census tract and the size of the van, we can compute the number of total miles that will be driven to pick up and drop off participants who reside in the census tract once per week. In statistics, this number is called a “weighted average.” The “weights” are the number of participants who reside in each tract. We will be able to estimate the number of drivers, vans, miles, and time, required for the van service.

3) All information that would allow for the identification of participants in Senior Center Programs must be removed from the weights file. The following process is compliant with the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule (“Privacy Rule”) [2]. The procedure follows (45 CFR § 164.514 “Other requirements relating to uses and disclosures of protected health information”) .

1. Dr. Dorer will access a Town computer where the Senior Center address list is kept.
2. Dr. Dorer will use a suite of computer programs to look up the US Census tract for the participant’s address from the address file. This will require some “cleaning” of the addresses. There are usually errors and variances in street names when compared with the US Census address file. The census tract Federal Information Processing Standard (FIPS) code will be added to the output file.
3. The age and gender will be recoded (45 CFR § 164.514) and included in the output file.
4. A random participant identifier will be generated [4] and added to the output file. The random identifier, or re-identification key, will be added to the address list. This augmented participant address file will allow for “re-identification” (45 CFR § 164.514(c)) [3]. The augmented address file and the output file WILL NOT be transferred off of the Senior Center computer system. However, a second output file with the random identifier, recoded age, and gender but not the census tract, will be de-identified and may be transferred off the Town computer. Dr. Dorer will certify the second output file as de-identified (45 CFR § 164.514(b)(1)).
5. The output file census tract variable will be tabulated to produce a set of weights. Census tracts with no participants will remain 0, tracks with 1-4 participants will be set to 4, and all other track counts will be unchanged.
6. Dr. Dorer will certify the weights file as being “de-identified.”
7. A data use agreement will be executed (45 CFR § 164.514(e)(4)).
8. The weights file and the output file with age and gender, will be emailed to Dr. Dorer.

[1] Project Description, Dorer Community Service Foundation Inc, dated 3 December 2021.

[2] The Privacy Rule is located at 45 CFR Part 160 and Subparts A and E of Part 164.
www.ih.gov/sites/privacyact/themes/responsive2017/display_objects/documents/PvcFR01.pdf

[3] Guidance Regarding Methods for De-identification of Protected Health Information in Accordance with the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule.
www.hhs.gov/hipaa/for-professionals/privacy/special-topics/de-identification/index.html.
Also 45 CFR Part 164 Subpart E.

[4] Harvey Mudd College Computer Science Department Technical Report PCG: A Family of Simple Fast Space-Efficient Statistically Good Algorithms for Random Number Generation
HMC-CS-2014-0905 Issued: September 5, 2014
<https://www.cs.hmc.edu/tr/hmc-cs-2014-0905.pdf>