



Improving Knowledge About the Number and Characteristics of Servicemembers Receiving SNAP Benefits

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Abstract

The Presidential Charter for the 13th Quadrennial Review of Military Compensation directed it to estimate the number of servicemembers who qualify for the Supplemental Nutrition Assistance Program (SNAP). In this study, we use the Public Assistance Reporting Information System (PARIS), which includes information on people who receive SNAP and other federal benefits, to estimate how many active component servicemembers qualify for SNAP. The data include information from participating states and represent the most authoritative data ever used to estimate servicemembers' enrollment in SNAP. After we control for anomalies that we conclude are an indication that a significant number of servicemembers in the PARIS data are no longer members of households receiving SNAP benefits, we conclude that between 0.08 percent and 0.42 percent of the approximately 1.1 million servicemembers stationed in the US are enrolled in SNAP at any point in time. For reference, approximately 9.6 percent of adults in the US age 18 to 59 were enrolled in SNAP in 2018. Junior enlisted members represent the largest number of SNAP recipients, and they are the most likely to be enrolled in SNAP. When we combine paygrade and dependents, servicemembers in paygrades E-2 to E-4 with three or more dependents are far more likely to be enrolled in SNAP than all other servicemembers. Even so, fewer than 5 percent of these servicemembers are enrolled in SNAP. The Army has the least restrictions on accessions with dependents and has accessed far more with several dependents in the past few years than the other services; its junior enlisted servicemembers are the most likely to be enrolled in SNAP. Junior enlisted servicemembers advance rather quickly, however, so it is likely that most of these members are receiving SNAP benefits for a relatively short period. Servicemembers who stopped receiving SNAP benefits were enrolled in SNAP in the same state for about 8 months.

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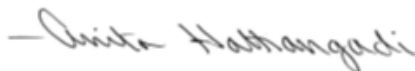
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Approved by:

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Executive Summary

The Presidential Charter for the 13th Quadrennial Review of Military Compensation (QRMC) directed it to estimate the number of servicemembers who qualify for the Supplemental Nutrition Assistance Program (SNAP). In a previous study, the Director of the 13th QRMC asked CNA to address this question by determining eligibility requirements for SNAP and to use aggregated Defense Manpower Data Center (DMDC) data to estimate the number of potentially eligible servicemembers who could qualify for this program by paygrade, family status, and Military Housing Area (MHA) [1].

After that report was published, the QRMC learned that DMDC matches data from participating state public assistance agencies with Department of Defense (DOD) military pay and personnel data using a Public Assistance Reporting Information System (PARIS) matching program. The data include information on servicemembers who receive SNAP and other federal benefits. The Director of the 13th QRMC asked CNA to use the PARIS data to provide more precise estimates of the number of servicemembers who receive SNAP benefits and to analyze how estimates from aggregated data can be extrapolated for states that do not provide these data to DMDC. Specifically, our task was to address the following questions:

- Based on PARIS data, how many active component (AC) servicemembers qualify for SNAP, by service, paygrade, and state?
- How well does the number of servicemembers' household members recorded in PARIS match their military dependents according to DMDC AC manpower data?
- Using PARIS and manpower data, what are the characteristics of servicemembers who qualify for SNAP, including paygrade, service, state of receipt, and number of dependents?
- How can the PARIS data help to inform future estimates of SNAP participation that are based on aggregated data?

Results

DMDC provided us with PARIS data for May and August 2019, merged with relevant information for all AC servicemembers on the Active Duty Manpower File (ADMF), pay file, and Active Duty Family File (ADFF). The PARIS data include the most comprehensive information available regarding servicemembers' enrollment in SNAP; they include information on

servicemembers in 33 and 34 states in May and August, respectively, representing 60 percent of all AC servicemembers assigned to duty in the US.¹

After we control for anomalies that we conclude are an indication that a significant number of servicemembers in the PARIS data are no longer members of households receiving SNAP benefits, we conclude that between 0.08 percent and 0.42 percent of the approximately 1.1 million servicemembers stationed in the US (i.e., between 880 and 4,620 servicemembers) are enrolled in SNAP at any point in time. Our analysis indicates that the best estimate is on the lower end of this range. For reference, approximately 9.6 percent of adults in the US age 18 to 59 were enrolled in SNAP in FY 2018.

Junior enlisted (E-1 through E-4) represent the largest number of SNAP recipients and, as we found in our previous work, they are the most likely to be enrolled in SNAP. When we combine paygrade and dependents, servicemembers in paygrades E-2 through E-4 with three or more dependents are far more likely to be enrolled in SNAP than all other servicemembers. Even so, fewer than 5 percent of these servicemembers are enrolled in SNAP.

Junior enlisted servicemembers with several dependents are more likely to be recent accessions (rather than newly demoted members). The Army has the least restrictions on accessions with dependents and has accessed far more with several dependents in the past few years than the other services; its junior enlisted servicemembers are the most likely to be enrolled in SNAP.²

The data do not allow us to determine what event caused servicemembers to stop or start SNAP participation. For some, this may be due to a change in dependents or advancement, but those events do not explain a majority of SNAP transitions. It is likely that changes in household income, which we cannot measure, are contributing factors for many servicemembers.

Servicemembers who stopped receiving SNAP benefits were enrolled in SNAP in the same state for about eight months. This may be an underestimate of the total time that members are enrolled because members may reenroll in states after a permanent change of station. Junior enlisted servicemembers advance rather quickly, however, so it is likely that most of these members are receiving SNAP benefits for a relatively short time.

¹ Several states with a large number of servicemembers did not participate in either month, including California, Hawaii, South Carolina, and Virginia, plus the District of Columbia (DC). Of these, California, DC, and Hawaii have three MHAs with the highest Basic Allowance for Housing (BAH) rates—and likely commensurately high cost of living—in the country.

² No service has restrictions on dependents after accession.

Recommendations

Some small improvements in the estimate of the number of servicemembers who qualify for SNAP could be made if analysis included more months of PARIS and military data. Such expanded data might make it possible to address some of the issues we found, such as where servicemembers live, how long they have lived there, and whether they were enrolled in SNAP in different states when they changed duty locations. It also would be helpful if more states participated in the PARIS match.

However, because the data do not always reflect an accurate accounting of current household members and we do not have information pertaining to total household income, it may be more fruitful to pursue different datasets to answer these questions in future work. For instance, it might be possible to get better estimates of household income with data from the Social Security Administration.

Finally, the unprecedented levels of unemployment caused by the COVID-19 pandemic surely will affect the number of servicemembers who are receiving SNAP benefits, but the net results are uncertain. On one hand, the services likely will have less difficulty in recruiting in a weak economy, so fewer accessions will join with dependents. On the other hand, retention will be higher, so perhaps servicemembers with dependents will be the most likely to want to remain on active duty. Further, those members with spouses likely will have lower household income since more working spouses will be unemployed.

Consequently, we recommend that DOD use different datasets to look at servicemembers' use of SNAP over the next year or longer to determine whether use is significantly changed by COVID-19.

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Background

The Presidential charter for the 13th Quadrennial Review of Military Compensation (QRMC) directed the QRMC to

survey the usage of Supplemental Nutrition Assistance Program (SNAP) benefits, as well as any other supplemental sources of income or support you deem significant, by military members on active service and their families, and consider the results of the review in assessing the adequacy of overall military compensation. [2]

In a previous study, the Director of the 13th QRMC asked CNA to determine eligibility requirements for SNAP and to use aggregated Defense Manpower Data Center (DMDC) data to estimate the number of potentially eligible servicemembers who could qualify for this program—by paygrade, family status, and Military Housing Area (MHA)³ [1]. That study found that approximately 2,000 active component (AC) servicemembers could potentially qualify for SNAP, all of whom would be below the paygrade of E-7, and about half of whom would be E-1 through E-3.

After that report was published, the QRMC learned that DMDC matches data from participating state public assistance agencies with DOD military pay and personnel data using a Public Assistance Reporting Information System (PARIS) matching program. The data include information on servicemembers who receive SNAP and other federal benefits. According to [3], PARIS “is a computer data matching and information exchange system administered by the Administration for Children and Families to provide States with a tool to improve program integrity in the administration of public and medical assistance programs.”

PARIS contains enrollment data from the Temporary Assistance to Needy Families (TANF) Program, SNAP, and Medicaid, which DMDC uses to match with data both from states and from federal datasets. Three types of matches are made: a federal match, a Department of Veterans Affairs match, and an interstate match. For instance, the interstate match takes Medicaid enrollment data from one state and matches it to Medicaid enrollment data from other states to identify beneficiaries who are enrolled in multiple state Medicaid programs. According to [3], the federal match is made with data from the Department of Defense (DOD) and the Office of Personnel Management to determine which people receive income from any of these programs or are eligible for federal health care coverage. The states’ participation in PARIS is

³ MHA consists of a state code and a three-digit number, the latter signifying a metropolitan area within a state, such as Long Island (New York) or Anchorage (Alaska).

voluntary for SNAP use, but not for Medicaid; according to information DMDC shared with us that it received from the PARIS Board, all but 10 states⁴ and the District of Columbia (DC) participated in the November 2019 match.

While the data are collected quarterly (February, May, August, and November), participating states are expected to submit Medicaid enrollment data in August of each year [4]. Note, however, that states are required to report Medicaid recipients only, and just for the August quarterly report. Reporting on other programs is voluntary, as is reporting of any program participation in other quarters.

The Director of the 13th QRMC asked CNA to obtain the PARIS data to more precisely estimate the number of servicemembers who receive SNAP benefits and analyze how estimates from aggregated data can be extrapolated for states that do not provide these data to DMDC. Specifically, we were asked to address four questions:

1. Based on PARIS data, how many active component servicemembers qualify for SNAP, by service, paygrade, and state?
2. How well does the number of servicemembers' household members recorded in PARIS match their military dependents according to the Defense Enrollment Eligibility Reporting System (DEERS)?
3. Using PARIS and manpower data, what are the characteristics of servicemembers who qualify for SNAP, including paygrade, service, state of receipt, and number of dependents?
4. How can the PARIS data help to inform future estimates of SNAP participation that are based on aggregated data?

To estimate the persistence of SNAP eligibility, the QRMC also asked us to conduct our analysis on two consecutive PARIS data collections (May and August 2019).

Finally, our previous study found that a significant number of junior servicemembers had several dependents. The QRMC also asked us to determine the characteristics of these servicemembers. In particular, are these new recruits who accessed with several dependents, or are they more experienced servicemembers who were recently demoted?

We begin our paper with a summary of FY 2019 SNAP eligibility rules and a description of how military pays are considered for SNAP eligibility. We then present our findings based on PARIS data. We include in that discussion our findings regarding the characteristics of junior servicemembers who have a relatively large number of dependents and are, therefore, more likely to qualify for SNAP. Finally, we discuss the implications of our findings for estimating

⁴ The 10 states are Alaska, Alabama, Arkansas, California, Georgia, Hawaii, Oklahoma, South Carolina, Virginia, and Wyoming.

SNAP participation rates of servicemembers in states that do not participate in PARIS and for future analysis in the absence of PARIS data.

SNAP

In this section, we summarize SNAP eligibility requirements and guidelines, as of FY 2019. The details come from our previous report, with updated information as appropriate [1].

SNAP, formerly known as the Food Stamp Program, is a federal aid program providing low-income individuals and families with assistance in purchasing food. The US Department of Agriculture's (USDA's) Food and Nutrition Service (FNS) administers the modern program, although benefits are distributed by the states and territories. Puerto Rico is the only jurisdiction that does not participate in SNAP; it has a nutrition assistance program that is funded with US block grants [5].

General eligibility

SNAP eligibility is based on households' gross income, net income, and assets. For SNAP purposes, households are defined as people who live and eat meals together, even if they are not dependents [6].

Depending on location, households are screened for eligibility based on either federal guidelines or automatic approval by being eligible for or receiving benefits from other assistance programs, such as Supplemental Security Income (SSI), TANF, or state-run general assistance (GA) programs. The latter eligibility standard is referred to as Broad-Based Categorical Eligibility (BBCE). According to a recent report, 39 states, DC, Guam, and the Virgin Islands⁵ implemented BBCE as of July 2019 [7].

Federal guidelines

States that follow the federal guidelines require *gross* household income to be no more than 130 percent of the federal poverty line, which varies with the number of household members and is higher for residents of Alaska and Hawaii. Households with an elderly member (defined as age 60 or older) or a disabled member are not subject to the gross income requirement [6].

Income is defined as all earned and unearned income that is available to the household, including wages, salaries, cash assistance, Social Security, unemployment insurance, and child

⁵ Because of the difficulty in identifying where servicemembers live who reside in US territories, we exclude Guam and the Virgin Islands from our analysis.

support [8]. Servicemembers who live separately from their families while deployed are typically counted as household members on the family's SNAP application, and their pay is included in household income as long as it is made available to the household (e.g., deposited into a joint checking account).⁶ Assets, referred to as countable resources, are capped at \$2,250 or, if at least one member of the household is elderly or disabled, at \$3,500. Certain assets are not counted, such as a home and lot; states determine how vehicles are treated [6].

Table 1 displays FY 2019 federal poverty income levels by state and the number of household members. The gross income limit is derived by calculating 1.3 times the values in this table. For instance, households with four members living in the 48 contiguous states must have no more than \$2,720 (\$2,092 times 1.3) in monthly income.

Table 1. FY 2019 federal poverty income levels (monthly amount)

Number of household members	48 contiguous states, DC, Guam, and Virgin Islands	Alaska	Hawaii
1	\$1,012	\$1,265	\$1,164
2	\$1,372	\$1,715	\$1,578
3	\$1,732	\$2,165	\$1,992
4	\$2,092	\$2,615	\$2,406
5	\$2,452	\$3,065	\$2,820
6	\$2,812	\$3,515	\$3,235
7	\$3,172	\$3,965	\$3,649
8	\$3,532	\$4,415	\$4,063
Per additional person	\$360	\$450	\$415

Source: [9].

Net income is derived by subtracting the following items from gross income:

1. 20 percent of gross income
2. A standard deduction that is based on household size
3. Dependent care expenses if they are needed for work, training, or education
4. Medical expenses for elderly or disabled members if they exceed \$35 per month and are not paid by insurance or someone else
5. In some states, child support payments
6. Excess shelter costs, defined as costs associated with the household's shelter that exceed half of its income after deductions 1 through 5 are made

⁶ This interpretation of SNAP household membership rules and income calculations as they apply to families with deployed servicemembers comes from an email response from the FNS SNAP office to a question we submitted to USDA using the online "Ask an Expert" contact page.

Table 2 provides the standard deductions permitted, by location and household size. Shelter costs include fuel for heating and cooking, electricity, water, telephone, rent or mortgage and interest, and taxes on the home. Most states have mandatory Standard Utility Allowances (SUAs) that all households must use as part of their estimated shelter costs.

Table 2. FY 2019 SNAP standard deductions

Number of household members	48 contiguous states and DC	Alaska	Hawaii	Guam	Virgin Islands
1 to 3	\$164	\$281	\$232	\$331	\$145
4	\$174	\$281	\$232	\$348	\$174
5	\$204	\$281	\$234	\$408	\$204
6+	\$234	\$292	\$269	\$467	\$234

Source: [9].

The monthly excess shelter deduction is capped at \$552 for all locations, with the following exceptions [9]:⁷

- Alaska residents are capped at \$881.
- Hawaii residents are capped at \$743.

Work requirements

In addition to meeting these income and asset requirements, SNAP has two work requirements: a general work requirement and one for able-bodied adults without dependents (ABAWDs) [10]. While all servicemembers would satisfy these requirements, other household members, including spouses, also would be required to meet these requirements.

General work requirements

Individuals age 16 to 59 who are able to work are required to register for work, participate in SNAP employment and training (or workfare if assigned by their state SNAP agency), take a suitable job if offered, and not voluntarily quit or reduce work-hours below 30 per week without a good reason. Those who satisfy any of the following are exempted from this requirement:

- Already work at least 30 hours a week
- Meet work requirements for another program (e.g., TANF)
- Take care of a child under the age of 6 or an incapacitated person

⁷ For reference, Guam and Virgin Island residents are capped at \$647 and \$435, respectively.

- Unable to work due to a physical or mental limitation
- Participate regularly in an alcohol or drug treatment program
- Study in school or a training program at least half time

Those who are required to meet the general work requirements, but do not, are disqualified from receiving SNAP for at least a month.

Able-bodied adults without dependents

Household members age 18 to 49 who are able-bodied adults without dependents have to meet both the general work requirements and an additional ABAWD requirement to receive SNAP for more than three months in a three-year period. This would apply to servicemembers' spouses who do not have dependents. This additional requirement is satisfied by meeting any of the following:

- Work for pay, work unpaid, work for goods or services, or work as a volunteer for at least 80 hours per month
- Participate in a work program for at least 80 hours per month
- Participate in a combination of work and work program for at least 80 hours per month
- Participate in workfare for the number of hours assigned (which varies by the amount of SNAP benefit)

Exceptions to this additional requirement include any of the following:

- Inability to work due to physical or mental limitations
- Pregnancy
- Someone under 18 in the household
- Exempted from the general work requirement

Guidelines for states with BBCE

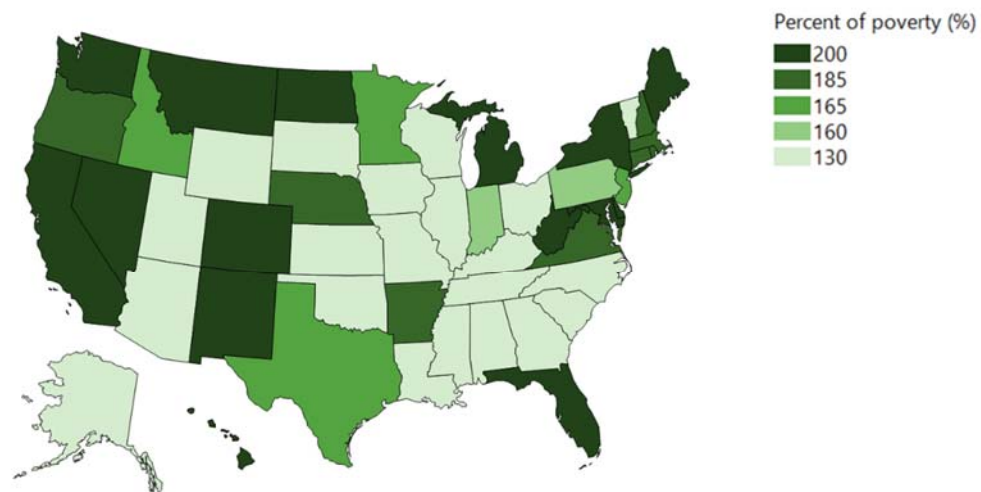
States that have implemented BBCE apply a flexible definition of eligibility, but federal law makes households in which all members of a household are eligible for—or receiving benefits from—any of a number of assistance programs automatically eligible for SNAP. For instance, household members do not have to be receiving TANF cash benefits; they may instead qualify for SNAP if they qualify for a TANF-funded benefit or service, such as receiving a brochure or telephone referral for services. In practice, then, all households in the state qualify for SNAP if they satisfy the state-set *gross* income limit (which ranges between 130 and 200 percent of the

federal poverty level) and asset thresholds, one or both of which are higher than the federal standard. Further, in all but six BBCE states/territories, there is no asset limit [7].⁸

Since households in BBCE states that are deemed eligible for TANF, SSI, or other programs have already gone through eligibility determination for those programs, they bypass income and resource tests for SNAP. They use the federal formula for calculating *net* income, however, which is used in all states and territories to determine SNAP benefits. We describe that formula next.

Appendix A provides information for each state, DC, Guam, and the Virgin Islands on whether they have implemented BBCE, their TANF gross income limits and asset criteria, and SUAs. In Figure 1, we show the maximum gross income limit in each state and DC. For reference, the gross income limit is 130 percent of the federal poverty line in 20 states, and 16 states plus DC cap gross income at 200 percent of federal poverty for SNAP eligibility purposes [7].

Figure 1. SNAP gross income limits in each state and DC: Percentage of federal poverty



Source: [7].

⁸ The six states are Idaho, Indiana, Maine, Michigan, Nebraska, and Texas.

Monthly benefits

SNAP guidelines require households to spend 30 percent of their net monthly income on food. The amount of SNAP benefit they receive is the difference between the maximum amount for that number of people in the household and their 30 percent contribution. Table 3 shows the maximum benefits by household members and locations. For instance, a household of four in one of the contiguous states that had a net income of \$2,000 per month would be expected to contribute \$600 toward food. Its maximum benefit is \$642, so it would receive \$42 in monthly SNAP benefits. All households consisting of one or two members who qualify in terms of gross and net income, or because they qualify in a BBCE state, are eligible for a minimum SNAP benefit, as shown in the last row. This minimum payment for eligible households with one or two members was not considered in the estimates; for that analysis, we used the 30 percent contribution calculation to determine monthly SNAP benefits. It is unlikely, however, that many single servicemembers or those with one dependent would qualify, even for the \$15 benefit. In particular, these members would have to be stationed in BBCE states, meet TANF-benefit eligibility requirements (including any asset limits), and not be in initial training because institutionalized individuals who have housing and meals provided are not eligible. For servicemembers with one dependent, that dependent would most likely be a spouse, and the spouse would have to satisfy the ABAWD work requirement, which would likely increase the household pay to exceed the gross income limit. Finally, for those who still would qualify for SNAP, their benefit would be just \$15 per month.

Table 3. FY 2019 SNAP maximum monthly benefits

Number of household members	48 states and DC	Alaska Urban ^a	Alaska Rural 1	Alaska Rural 2	Hawaii	Guam	Virgin Islands
1	\$192	\$232	\$295	\$360	\$358	\$282	\$247
2	\$353	\$425	\$542	\$660	\$656	\$520	\$454
3	\$505	\$609	\$776	\$945	\$940	\$745	\$650
4	\$642	\$773	\$986	\$1,200	\$1,193	\$946	\$825
5	\$762	\$918	\$1,171	\$1,425	\$1,417	\$1,123	\$980
6	\$914	\$1,102	\$1,405	\$1,711	\$1,701	\$1,348	\$1,176
7	\$1,011	\$1,218	\$1,553	\$1,890	\$1,880	\$1,490	\$1,300
8	\$1,155	\$1,392	\$1,775	\$2,161	\$2,148	\$1,703	\$1,485
Per additional person	\$144	\$174	\$222	\$270	\$269	\$213	\$186
Minimum (1-2 people)	\$15	\$19	\$24	\$30	\$29	\$23	\$20

Sources: [9, 11].

^a See [12] for details regarding Alaska city and village classifications.

Benefits recertification

SNAP benefits are approved for a certain number of months, referred to as the certification period. Typical certification periods for working adults with dependents are 6–12 months. During the certification period, households are required to report changes in income on a monthly, quarterly, or biannual basis. If income is unchanged, no income verification is required. If a verifiable change in income is reported, eligibility and benefit levels are recalculated, but an interview is not required. Households subject to asset tests also are required to report changes in assets that exceed the asset limit. In addition to these intermediate reporting requirements, households must apply for recertification at the end of their certification period to continue receiving benefits. At that time, the household must verify income (and assets, if subject to an asset test) and complete an interview [13].

Program changes

The USDA FNS proposed three changes to SNAP eligibility and benefit calculation rules in 2019. COVID-19 may have significant impacts on SNAP, in terms of changes to these proposed rules as well as other changes (as yet unknown) in the program necessitated by the impact of the virus. Appendix B describes the changes proposed prior to the pandemic.

How Military Pays Are Treated

Almost all military compensation is considered as income for SNAP purposes. The only exceptions are additional payments received by a member while deployed to a combat zone that he or she did not receive before deployment to or service in a federally designated combat zone [14].⁹ The regulations that specify these exceptions follow:

- Chapter 5 of Title 37, United States Code (U.S.C.)
- Consolidated Appropriations Act of 2005, Public Law 108-447 (December 8, 2004)
- Title 7 of the Code of Federal Regulations (CFR), 273.9 (c)(20)

Other exceptions are in-kind benefits, defined as benefits for which no monetary payment is made on behalf of the household. According to the Code of Federal Regulations,¹⁰ any gain or benefit (including in-kind benefits) that is not in the form of money payable directly to the household is exempt from income for SNAP eligibility purposes.

Servicemembers are eligible for a variety of entitlements. All servicemembers receive basic pay, which is based on paygrade and years of service (YOS). Not all servicemembers receive all other entitlements. Two elements of compensation require some explanation since, as we describe later, they are important factors in determining which servicemembers are eligible for SNAP.

Basic Allowance for Housing (BAH)

BAH compensates uniformed military servicemembers for housing costs comparable to local civilian housing markets. The nontaxable allowance varies by duty station location (which is the basis for MHA¹¹), paygrade, and dependency status [15]. Allowances are recalculated annually based on local rental markets, accounting for average utility fees. Homeownership costs, such as mortgage and property taxes, are not factored into the calculations. BAH distinguishes between servicemembers with dependents and those without dependents; the number of dependents is not a consideration [16].

⁹ According to [14], Imminent Danger Pay (IDP) and Hazardous Duty Pay Location (HDP-L) are the two relevant pays that should be excluded if the servicemember is stationed in an area in which he or she is receiving Combat Zone Tax Exclusion (CZTE).

¹⁰ Specifically, this refers to CFR, Title 7, Subtitle B, Chapter 11, Subchapter C, Part 273, Subpart D, Section 273.9.

¹¹ Specifically, MHA is based on duty unit ZIP code.

Members who live in military installation housing maintained by a private-sector company or in offbase civilian housing receive the BAH allowance dictated by their location, rank, and dependency status in addition to basic pay [17].

Members who live in government-owned military installation housing—either single or family housing—do not pay rent or utilities and therefore do not receive BAH. This is an example of an in-kind benefit that is not included in income for SNAP eligibility purposes.

Members who have dependents but are on an unaccompanied tour overseas are eligible for BAH with dependents, based on the dependents' US residence ZIP code, plus Overseas Housing Allowance at the without-dependents rate, if the member is not furnished government housing overseas [13]. The standard overseas tour length for an unaccompanied tour is 24 months, although some locations are limited to a maximum of 12 months [18]. For SNAP eligibility purposes, a servicemember who is not living in the household for 12 or more months generally would not be considered a household member; it is unlikely that members with dependents who are on these types of tours would be included in the SNAP federal match.

Our previous SNAP research found that few servicemembers with dependents do not receive BAH—less than 1 percent—but these servicemembers are more likely to qualify for SNAP relative to their peers who receive BAH (10 percent and 0.4 percent, respectively) because BAH counts as income but quarters-in-kind do not. As we noted, this may lead to unequal SNAP eligibility for servicemembers who are otherwise similar in terms of paygrade, geographic location, and number of household members [1].

Basic Allowance for Subsistence (BAS)

BAS is a nontaxable allowance designed to offset costs for servicemembers' meals only, not the cost of food for any dependents or other household members. If a member is receiving BAS, the member must pay for meals even when the US government provides them. In general, officers receive full BAS at all times and are required to pay for all meals. Enlisted members in basic training or on sea duty do not receive BAS and pay nothing to eat, referred to as subsisted-in-kind [19]. Typically, individuals are not eligible for SNAP if an institution provides most of their meals.

Special and incentive pays

In addition to basic pay, BAH, and BAS, servicemembers may be eligible for one or more of over 60 special and incentive pays [20]. Examples include enlistment and reenlistment bonuses, Assignment Incentive Pay (AIP), and the Foreign Language Proficiency Bonus (FLPB).

SNAP eligibility and benefit levels are calculated based on the household's anticipated future monthly income. For individuals who receive a steady level of income throughout the year, this is generally about the same as past income. However, one-time or infrequently disbursed special and incentive pays can add volatility to servicemembers' income. SNAP uses the most recent 30 days of income as a baseline for calculating eligibility and benefit level, but caseworkers are instructed to adjust for anticipated changes as long as the household can provide sufficient documentation or evidence of the reason for the change. For example, a servicemember who received a one-time enlistment bonus in the 30 days prior to SNAP application would not count the value of the bonus in calculating future monthly income. However, special and incentive pays disbursed monthly, such as AIP, are added to monthly income. As we discuss later, the infrequency of special pays makes it difficult to assess servicemembers' eligibility for SNAP benefits in any particular month.

Analysis

There were 33 and 34 states with observations in the May and August PARIS data, respectively.¹² It is not clear why we did not receive SNAP data from more states since we noted earlier that only 10 states and DC did not have an agreement to participate in the November 2019 PARIS federal match, or did not provide data that month. We reached out to DMDC, but it was not able to explain this discrepancy.

In Figure 2, we show which states have AC servicemembers in the PARIS dataset that we received from DMDC in both months (green, 31 states), August only (blue), May only (purple), and neither month (red). For reference, we indicate the total number of servicemembers with that state noted as their duty station in May. These states represent 60 percent of servicemembers with a US duty station in each month. Note that several states with a large number of servicemembers did not participate in either month, including California (13 percent of all members stationed in the US), Hawaii (3.7 percent), South Carolina (2.9 percent), Virginia (11 percent), and DC (0.9 percent). Of these, California, Hawaii, and DC are three of the four states¹³ with the highest BAH rates in the country.

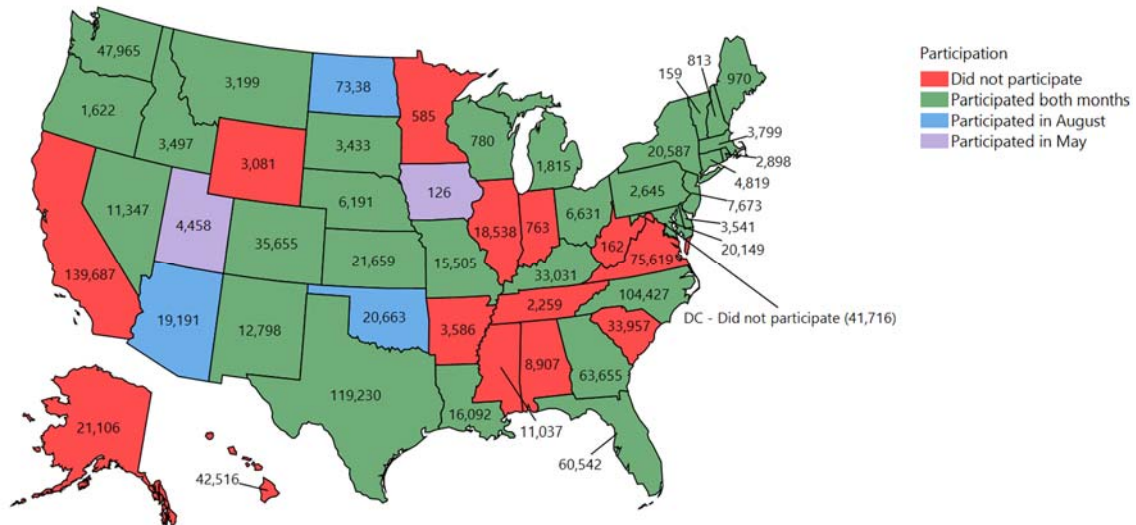
In addition to the state, the PARIS data consist of four other variables for each servicemember in the file: (1) the dollar amount of his or her last SNAP payment, (2) SNAP start date, (3) SNAP end date, (4) the number of people in the household. DMDC then added an additional variable that indicates the number of household members that it found as a dependent of that servicemember on DEERS (using social security number (SSN)). Recall that members of servicemembers' households may not be legal dependents, but they count as household members for SNAP purposes.¹⁴

¹² Puerto Rico was included in each dataset, but recall that it does not participate in the federal SNAP program; we assume that these observations are servicemembers who receive funds from its food assistance block grant. As we noted previously, we do not include Puerto Rico, the Virgin Islands, or Guam in our analyses.

¹³ We refer to DC as a state for simplicity.

¹⁴ Although PARIS does not provide this latter variable, we include it as part of the PARIS data for simplicity.

Figure 2. States participating in PARIS and total number of AC servicemembers in each state



Source: DMDC data.

Table 4 indicates how many of these variables had missing values (which includes a value of zero in the amount of last payment) in each month. We also list the five states with the most observations in each month. For reference, there were 5,215 and 3,263 observations in the May and August PARIS files, respectively. When we drop those observations with end dates that indicate they stopped receiving SNAP before the first of the month, or when we drop those with begin dates that are after the end of the month, we are left with 4,800 and 2,691 observations in May and August, respectively.

Table 4. Number of PARIS observations with missing values and five states with the most observations

Variable	May		August	
	Number missing	Percentage missing	Number missing	Percentage missing
Amount of last payment paid	4,370	91	2,029	75
Start date	0		0	
End date	3,717	77	1,459	54
Number in household	261	5	277	10
Number of dependents matched in DEERS	4,111	86	2,244	83
States				
Florida	342	7	404	15
Georgia	2,978	62	288	11
New York	295	6	290	11
North Carolina	227	5	236	9
Texas	266	6	437	16

Source: DMDC data.

A large number of observations are missing important information, especially the amount of the last payment and the SNAP end date.¹⁵ It is not clear whether missing values indicate that the household did not receive SNAP that month or that the state did not provide the relevant information. Because of the large number of missing values, we suspect the latter reason. Another important note is that over 80 percent of observations in both months are missing a match in DEERS of dependents with the SSN of household members according to PARIS. In other words, these servicemembers did not live in SNAP households with their military dependents, or they did not have any military dependents.

Georgia has by far the most observations in May, but the number of SNAP recipients reported in August is less than 10 percent of the number in May. In contrast, the number of servicemembers in Texas in August is 64 percent higher than the number in May.¹⁶

¹⁵ Only 10 states have non-missing or non-zero values for the amount of last payment in both months: Colorado, Connecticut, Maryland, Minnesota, New Hampshire, Nevada, Ohio, Rhode Island, Texas, and Vermont.

¹⁶ We will discuss the differences in the May and August files in more detail later.

We also found that, when we compare the May and August data, there are 392 servicemembers in the PARIS August data with a SNAP start date prior to May 31, but these servicemembers, who were on the Active Duty Master File (ADMF)¹⁷ in May, are not on the May PARIS data, and none of them are in states that did not participate in the May PARIS data collection.¹⁸ This is an important finding; which individuals are included in the PARIS quarterly snapshots depends on (1) the date that states collect the data and (2) what they define as a recipient in that month. For instance, some states may not include individuals who start SNAP eligibility before the end of the month, whereas other states do include these recipients.

We anticipated that the PARIS data would allow us to extrapolate from these states to obtain accurate estimates of the total number of servicemembers receiving SNAP benefits in all 50 states. As we examined the data more closely, however, we determined that a significant number of servicemembers in the PARIS data were likely no longer living in the household reporting the SNAP benefits. Consequently, we had to establish a process to drop servicemembers from the PARIS data who were likely no longer in the household, and therefore not receiving SNAP benefits. We describe that process next.

Our analysis required additional information from a number of DMDC-maintained datasets, on variables such as service, paygrade, MHA, and dependents. Appendix C describes the various DOD datasets that we used for our analysis. As we note there, a large number of all observations on the ADMF pay file were missing MHA and/or duty MHA.¹⁹ Of those on the May and August PARIS data, respectively, even greater percentages were missing MHA (69 percent and 73 percent), 16 percent and 9 percent were missing duty MHA, and 13 percent and 7 percent were missing both. It is likely that a missing MHA or duty MHA could be because of servicemembers being stationed overseas, making them ineligible for SNAP, with few exceptions. Specifically, overseas unaccompanied tours are at least 12 months, so it is likely that these servicemembers would not be included as members of the SNAP households and, therefore, should not be included in the PARIS data.

Hence, it is not clear why so many servicemembers in the ADMF who had a missing MHA and duty MHA are included in the PARIS data, but we conclude that it is likely that these members are no longer members of a household receiving SNAP. We will explain the reasoning behind this conclusion shortly because it is related to other issues we found with the data.

¹⁷ The ADMF contains information regarding demographics (e.g., gender, race/ethnicity, and age) and service (e.g., branch, paygrade, length of service (LOS), and occupation) for active duty servicemembers. For more information, see Appendix C.

¹⁸ No single state dominates the omission of these 392 members; they are in 27 states.

¹⁹ Duty MHA is the MHA based on Duty Unit ZIP code.

Similar to our findings described in Appendix C for all servicemembers, we found a large number of PARIS observations for which MHA did not match the duty MHA, and, more significantly, neither matched the state reporting SNAP participation. In particular, 87 percent and 83 percent, respectively, of May and August PARIS observations matched neither MHA state nor duty MHA state to SNAP state. MHA state matched SNAP state in just 13 and 17 percent of the May and August cases, and duty MHA state matched the SNAP state in just 14 and 16 percent of the cases, respectively.

Finally, we compared the number of household members according to the PARIS data with the number of dependents on DEERS. We found that just 19 and 20 percent of observations in May and August, respectively, agreed on household members, whereas 71 and 69 percent indicated that there were fewer dependents in DEERS than in SNAP in May and August. Of those households with at least two members, we found that 82 and 81 percent found none of the non-servicemember household members in DEERS in May and August, respectively.

The inconsistencies in MHA, duty MHA, and SNAP state are problematic because conducting our analysis requires accurate data on the states in which servicemembers live each month. In some cases, the servicemember may live in a bordering state, but it is not possible to determine whether his or her residence in the bordering state is within a reasonable distance from the duty location to be a legitimate difference.²⁰ It also is frequently the case that the states are more than several hundred miles apart. Further, the discrepancies vary by state. For instance, in the May data, just 11 percent of the SNAP observations in Georgia matched MHA or duty MHA. In contrast, 47 percent of the SNAP observations in Texas matched at least one of these.

The discrepancies regarding where servicemembers reside cast doubt on whether the servicemembers are, in fact, living in the household reported in PARIS. For instance, consider the case in which the servicemember was a child of a head of household that was receiving SNAP before the servicemember accessed, and the household continues to receive SNAP benefits. However, the servicemember is no longer a member of that household, and either the SNAP records have not been updated to reflect that or the household has not reported the loss of the servicemember from the household. In the May and August PARIS data, 65 and 62 percent, respectively, of servicemembers were in households that were receiving SNAP prior to (and sometimes years prior to) the date that they last went on active duty. While we do not have their accession records and therefore do not know whether they had dependents at accession, 76 and 87 percent of those who started receiving SNAP benefits prior to accession were not married and had no dependents in May and August, respectively. Even single servicemembers may have been receiving SNAP prior to accessing if their incomes were below

²⁰ It is possible to calculate the distance between ZIP codes, but, even though we know the MHA within a state, we do not know the ZIP code of the household according to PARIS.

the poverty line, but they would likely no longer qualify for SNAP after accessing, especially if they were in initial training in a different state.

Similar to those whose SNAP start dates precede accession, servicemembers whose start dates are soon after accession could have been dependents in households that started SNAP eligibility after the servicemembers accessed, yet the household reports them as household members. New enlisted recruits generally are not qualified for SNAP because they are housed in quarters and receive all meals at government expense while in initial training, which typically lasts at least two months. Officers are in a similar situation if they attend Officer Candidate School (OCS). While most servicemembers would not qualify for SNAP in the first few months of active duty, those who accessed with dependents, or who added them shortly after accessing (e.g., marriage and/or birth of a child) could potentially be eligible for SNAP. Again, unless they accessed a few months before May or August, we do not know how many dependents servicemembers had at the time they went on active duty.

Because of the likelihood that many servicemembers on SNAP are no longer living in the household receiving SNAP benefits, our analysis is based on rules we created to identify those members who are the most likely to be receiving SNAP benefits that month. We discuss those rules in what follows.

The discrepancies in MHA and duty MHA could be an indication that servicemembers are in the process of moving. In that case, a servicemember would likely have to reapply for SNAP in the new state, and PARIS may not include applicants who have not yet started receiving benefits. Hence, we require the MHA and duty MHA to be the same, and to be non-missing (missing MHA is most likely associated with an overseas location). In addition, the state of MHA must be the same as the SNAP state. We acknowledge that servicemembers could live in a state bordering their duty state, but it is not possible for us to determine the distance between duty and residence, and we found that often the states are not contiguous.

This leaves us with 500 and 342 May and August SNAP observations, respectively. We then dropped servicemembers who started receiving SNAP benefits prior to accession because, as we described, they are likely no longer members of SNAP households. This includes 101 and 41 observations in May and August, respectively.

Our final sample then consists of 399 and 301 May and August observations, from the original 4,800 and 2,691 potential recipients in May and August, respectively. Our restrictions drop more than 80 percent of those in the original PARIS data, but we believe that our restricted sample is likely a more accurate reflection of servicemembers who are *currently* receiving SNAP benefits.

Characteristics of servicemembers enrolled in SNAP

Our final sample includes 28 states and 77 MHAs. In Table 5, we show the number of recipients and the percentage of all servicemembers they represent, in each state and in each month, for the 11 states that had at least 10 recipients in either month. Each of the other states had 7 or fewer recipients in both months.²¹ Referring to Appendix A, 5 of the 28 states are not BBCE, 20 have no limit on assets, 12 have a 200 percent of poverty gross income limit, 5 have a 185 percent limit, 2 have a 165 percent limit, and 5 are BBCE but use the federal 130 percent of poverty gross income limit (they are BBCE because they have a higher limit, or no limit, on assets).

Table 5. States in sample with at least 10 SNAP recipients in both months

State	May		August	
	Total	Percentage	Total	Percentage
Arizona (AZ)	14	0.1	18	0.1
Colorado (CO)	32	0.1	34	0.1
Florida (FL)	28	0.1	17	0.0
Georgia (GA)	53	0.1	13	0.0
Louisiana (LA)	10	0.1	4	0.1
Missouri (MO)	12	0.2	12	0.2
New Jersey (NJ)	11	0.2	4	0.1
New York (NY)	12	0.1	8	0.1
North Carolina (NC)	44	0.1	27	0.0
Texas (TX)	81	0.1	68	0.1
Washington (WA)	53	0.2	50	0.2

Source: DMDC data.

SNAP recipients represent no more than 0.2 percent of servicemembers in the states in Table 5. In the remaining states, SNAP recipients represent 0.7 percent of servicemembers in

²¹ Those states include Kansas, Kentucky, Massachusetts, Maryland, Maine, Montana, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, Rhode Island, Utah, and Wisconsin in **May**, and Delaware, Idaho, Kansas, Kentucky, Massachusetts, Maryland, Maine, North Dakota, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, Rhode Island, and Wisconsin in **August**.

Massachusetts and Oregon, 0.3 percent in Maine and Wisconsin, and 0.2 percent or fewer in the remaining states.

For our restricted sample, there were 390,737 and 379,984 servicemembers in May and August, respectively, who were not enrolled in SNAP. Overall, then, 0.1 percent (i.e., 1 in 1,000) and 0.08 percent (8 in 10,000) of members in our sample were enrolled in SNAP in May and August, respectively. For reference, in FY 2018, 12.3 percent of Americans were enrolled in SNAP, whereas, in FY 2017, adults age 18 to 59 represented 43.4 percent of SNAP participants. Using data from the US Census Bureau on the civilian noninstitutionalized population in 2018 by age groups, we estimate that approximately 9.6 percent of adults age 18 to 59 in America were enrolled in SNAP in FY 2018 [21-22]. We acknowledge that the populations of servicemembers and all adults in this age range differ in some important characteristics. For instance, servicemembers, by definition, are employed full time, are not disabled, and are disproportionately male, but better data are not available for us to make a better comparison.

Our sample does not include many of the servicemembers in initial training. For instance, the following states with at least one of the services' bootcamps are not included: South Carolina (Army and Marine Corps), Illinois (Navy), and California (Marine Corps). New recruits are generally not eligible for SNAP, so the overall percentage of servicemembers who might qualify could be less than 0.1 percent. Conversely, we are missing PARIS data for some of the most expensive US duty unit locations, especially San Diego, California, and Honolulu, Hawaii—locations where a greater percentage of servicemembers potentially could qualify for SNAP. These factors may offset each other in our estimate of overall SNAP utilization. Absent better data, however, we are not able to provide estimates that are more precise.

With these issues in mind, our best estimate is to apply the 0.08 and 0.1 percent values to the approximately 1.1 million servicemembers with a US duty MHA in May and August, which translates to between 880 to 1,100 servicemembers who potentially could have been enrolled in SNAP in these months.

Since BAH varies by metropolitan area, we wanted to know if there were specific MHAs within each state that had a higher concentration of SNAP recipients. In Table 6, we indicate the MHAs each month that had at least 10 SNAP recipients, the total number of servicemembers in that MHA that month, and the percentage of servicemembers in that MHA that month that are enrolled in SNAP (Appendix E includes the total number of AC servicemembers in all MHAs in our sample each month). The MHA with the greatest percentage of members receiving SNAP is Elizabeth City, North Carolina, in May, with 1.4 percent of all servicemembers enrolled in SNAP. In terms of numbers, however, there were at least 40 members receiving SNAP in Fort Hood, Texas, in May and August, and in Tacoma, Washington, in May. Note that Fort Leonard Wood, Missouri, is one of the Army's basic training locations.

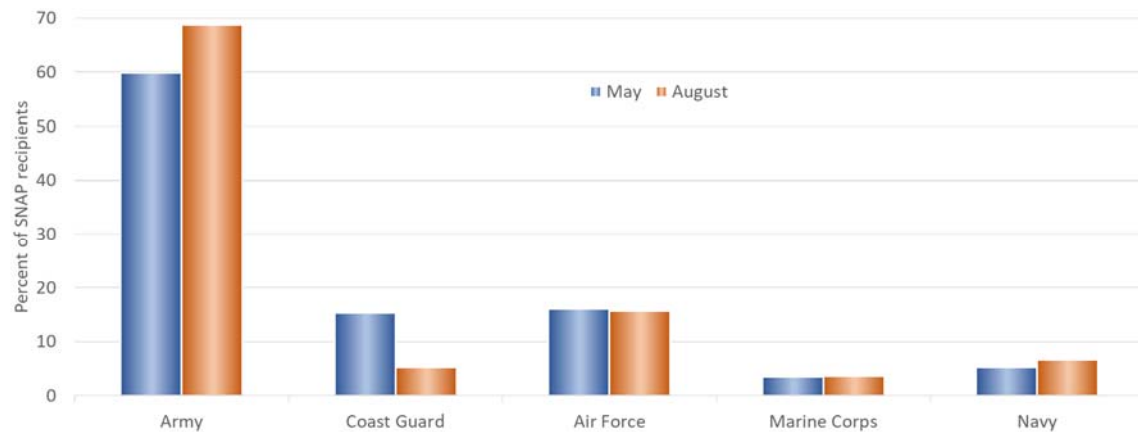
Table 6. MHAs with at least 10 SNAP recipients by month

MHA	SNAP recipients	All	Percentage receiving SNAP
May			
Colorado Springs, CO	31	22,321	0.1
Fort Stewart, GA	18	9,670	0.2
Fort Leonard Wood, MO	10	4,545	0.2
Elizabeth City, NC	12	851	1.4
Fort Bragg/Pope, NC	18	32,346	0.1
El Paso, TX	19	16,450	0.1
San Antonio, TX	10	18,502	0.1
Fort Hood, TX	40	21,562	0.2
Tacoma, WA	41	19,839	0.2
August			
Fort Huachuca, AZ	11	2,194	0.5
Colorado Springs, CO	32	22,450	0.1
Fort Leonard Wood, MO	10	4,632	0.2
Fort Bragg/Pope, NC	20	32,207	0.1
El Paso, TX	19	16,405	0.1
Fort Hood, TX	42	21,307	0.2
Tacoma, WA	38	19,778	0.2

Source: DMDC data.

We then looked at the distribution of servicemembers in our sample across services. In Figure 3, we show the percentage of SNAP recipients that are in each service. The Army has the greatest share of those enrolled in SNAP: 60 percent in May and almost 70 percent in August. The Army also is the largest service, but soldiers constitute only about 50 percent of our sample. This means that a greater proportion of servicemembers in the Army in these states are enrolled in SNAP than are members of the other services. For reference, the Air Force represents 28 percent of the sample, the Navy represents 10 percent, the Marine Corps is 7 percent, and the Coast Guard is 3 percent.

Figure 3. Percentage of SNAP recipients in each service

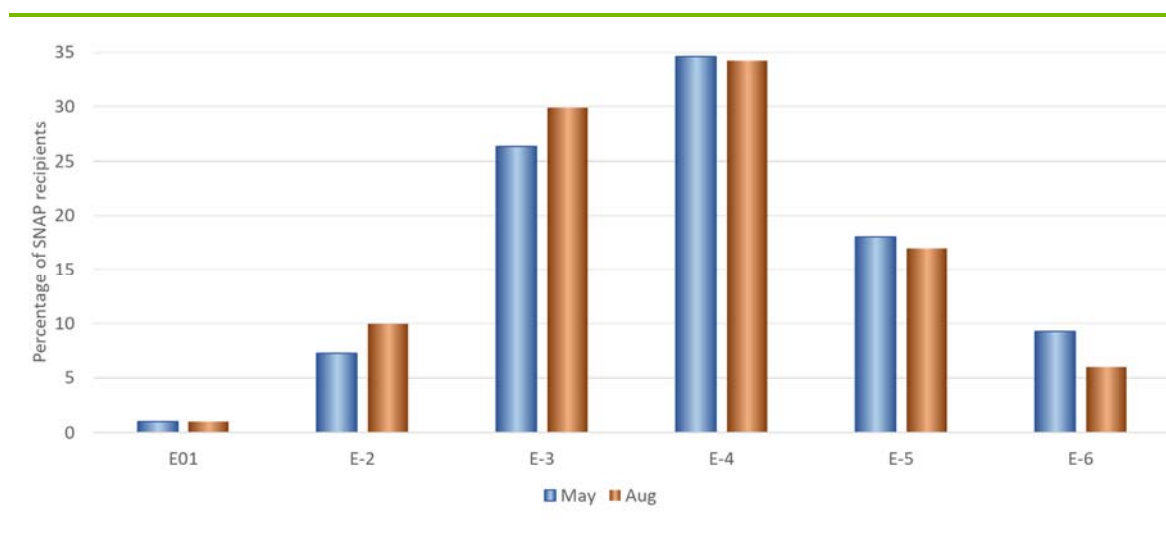


Source: DMDC data.

The proportion of servicemembers enrolled in SNAP can vary by service and by geographic region for a variety of reasons. The most significant reasons are that SNAP eligibility rules differ by state, and there are differences in the geographic distribution of servicemembers by paygrade. For instance, our previous research indicated that junior enlisted servicemembers with dependents were the most likely to qualify for SNAP [1]. MHAs with a larger concentration of junior members would therefore be more likely to have a greater proportion of members enrolled in SNAP.

In Figure 4, we show the distribution of SNAP recipients in our sample each month, by paygrade. E-4s represent the largest percentage of SNAP recipients; they make up over one-third of all recipients in our sample each month. Combined, servicemembers in paygrades E-1 through E-4 represent 69 and 75 percent of May and August SNAP recipients in our sample, respectively, while those in paygrades E-1 through E-6 represent 96 and 98 percent of SNAP recipients in our sample, respectively.

Figure 4. SNAP recipients by paygrade



Source: DMDC data.

For comparison, E-1 through E-4 servicemembers represent about 28 percent, and E-1 through E-6 servicemembers represent 66 percent, of *all* servicemembers in our sample each month. It is clear, then, that members receiving SNAP benefits are disproportionately in lower, enlisted paygrades.

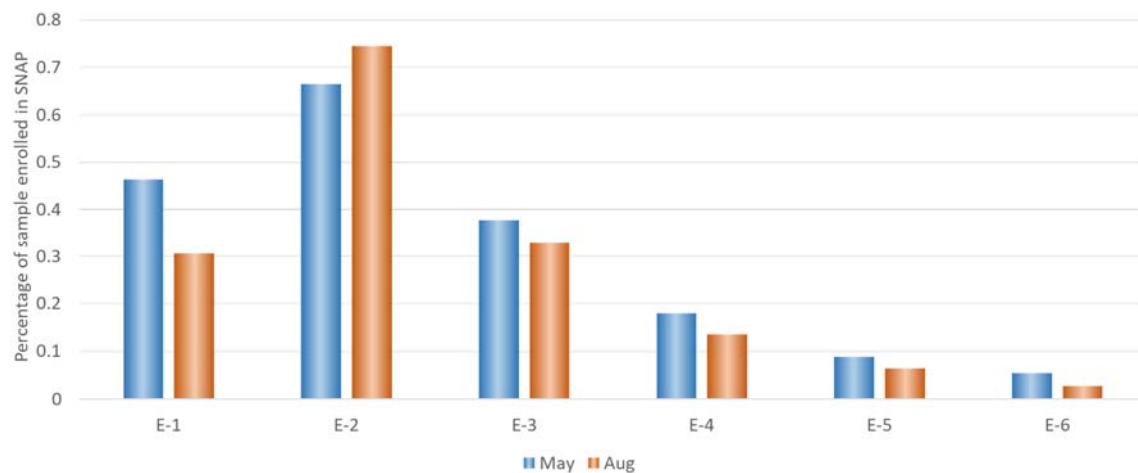
In Figure 5, we display the percentage of servicemembers in paygrades E-1 through E-6 in our sample who are enrolled in SNAP, by paygrade and month. While E-4s represent the largest proportion of all members enrolled in SNAP, they are not the most likely to be enrolled; E-2s are the most likely (approximately 0.7 percent), and enrollment decreases with increasing paygrade. This result is reasonable because pay increases with paygrade. According to the entire population of 1.3 million servicemembers in May, the average months of service by paygrade were as follows:

- 5.3 months for E-1s
- 10.6 months for E-2s
- 20.4 months for E-3s
- 31.7 months for E-4s
- 29.3 months for E-5s²²

²² The likely reason that the average length of service is shorter for E-5s than it is for E-4s is that a larger number of servicemembers make a reenlistment decision at E-4; those who advanced faster may be the most likely to reenlist and make it to E-5.

Advancement speed varies by service, but, on average, E-1s advance to E-2 within about 6 months, and to E-3 within about 18 to 20 months.

Figure 5. Percentage enrolled in SNAP by paygrade and month



Source: DMDC data.

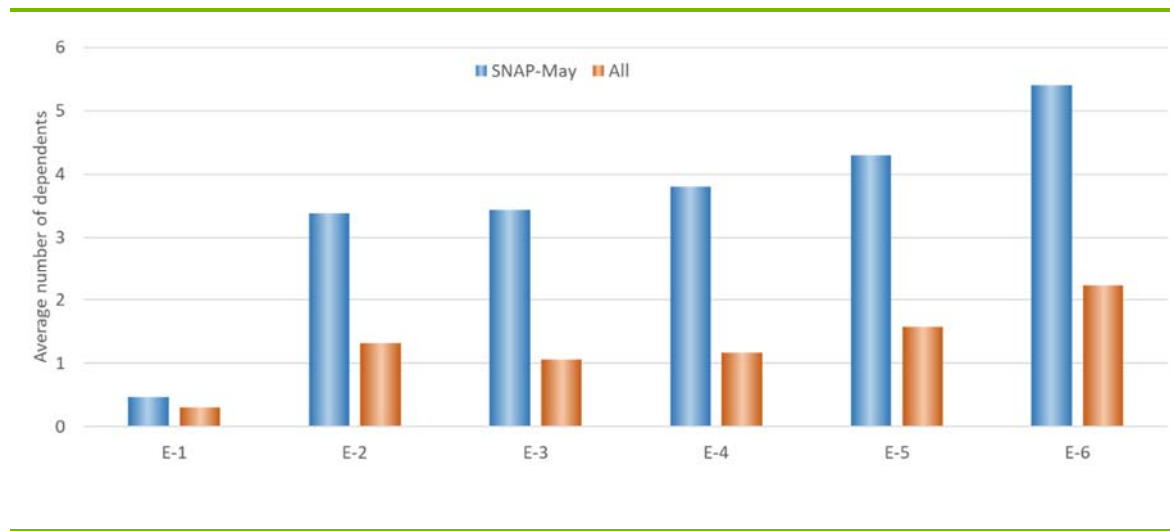
It is important to note, though, that while E-2s are the most likely to be enrolled in SNAP, less than 1 percent of E-2s in our sample are enrolled.

We wanted to know if there was something different about these junior servicemembers that made them more likely to be on SNAP than their military peers. Specifically, do these members have more dependents than their peers?

Figure 6 shows the average number of dependents of servicemembers in the May²³ file by paygrade. The blue bars are the average number of dependents for SNAP recipients, and the red bars are the average number of dependents for all servicemembers in our sample.

²³ The results are similar for August, so we do not display them.

Figure 6. Average number of dependents in May by SNAP enrollment

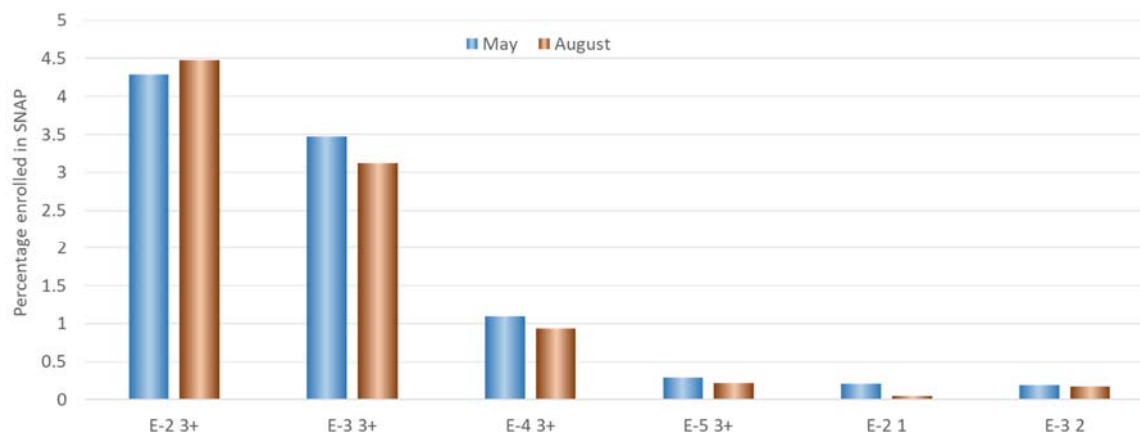


Source: DMDC data.

Later in this section, we discuss our findings regarding the characteristics of servicemembers with several dependents, but it is clear that SNAP recipients in our sample have far more dependents than their peers who are not enrolled in SNAP.

We know that junior servicemembers are more likely to qualify for SNAP, and those with more dependents are more likely to qualify. In Figure 7, we combine paygrade and number of dependents to determine which paygrade/number of dependents combinations are the most likely to qualify for SNAP in our sample, in descending order. We identify the number of dependents as 0, 1, 2, or 3+.

Figure 7. Paygrade/number of dependents most likely to be enrolled in SNAP



Source: DMDC data.

This figure reveals an important finding: E-2 to E-4 servicemembers with three or more dependents are the most likely to be enrolled in SNAP. Approximately 4.3 percent and 4.5 percent of E-2s with three or more dependents were enrolled in SNAP in May and August, respectively, followed by 3.5 and 3.1 percent of E-3s with three or more dependents enrolled in May and August, respectively. The proportion drops significantly at E-4; about 1 percent of members in that paygrade with three or more dependents are enrolled in SNAP. E-1 to E-4 servicemembers with three or more dependents represent 1.7 percent of our sample. We will discuss the characteristics of these junior members with several dependents later.

We then looked to see whether SNAP recipients differ in terms of their age or length of service (in months). Table 7 displays these results for the May sample. SNAP recipients are several years older than their peers in the same paygrade, but there is no consistent pattern regarding length of service; they have more experience at E-2s and E-5s, but less at E-3 and E-4. Again, we discuss some of factors contributing to these differences in more detail in a later section. An important note, however, is that the average length of service of E-3s is about eight months longer than for all E-2 servicemembers in this sample. This is an indication that many E-2s who qualify for SNAP may not qualify within a few months, once they are promoted to E-3, if they do not increase the number of their dependents.

Table 7. Average age and months of service by paygrade and SNAP enrollment

Paygrade	Average age – May		Average length of service (in months)	
	SNAP	All	SNAP	All
E-2	25.2	22.2	16.2	15.2
E-3	25.7	22.9	19.1	23.5
E-4	27.4	24.7	27.8	33.2
E-5	29.8	28.0	33.2	29.8
E-6	34.4	32.9	34.1	30.2

Source: DMDC data.

Next, we examined how well the number of dependents as reported in DEERS agrees with the number of household members according to PARIS. Recall that we noted that household members include unrelated individuals for SNAP purposes; they could be significant others, friends, boarders, and so on, which would imply that it would be more likely that the number of dependents is smaller than the number of household members according to SNAP. An unexpected result is that, while 52 and 58 percent of SNAP recipients in our sample agree in the number of dependents and household members in May and August, respectively, 34 and 29 percent of SNAP recipients in May and August, respectively, have more dependents according to DEERS than household members according to PARIS. We are not able to determine the reasons for this finding, but one possible explanation is that these servicemembers married or had a child since qualifying for SNAP and the SNAP records have not been updated, whereas DEERS data have been updated.

Finally, we wanted to know how well we could estimate SNAP eligibility using the data available to us and SNAP eligibility rules, and compare our estimates with PARIS data. Because of the problems we described with the pay data in Appendix C, we used average monthly total entitlements for the previous 12 months. This smooths out large negative or positive monthly values in May and August, and may be more representative of the pay that was used to qualify for SNAP. We also base the number of household members on the number noted in PARIS, and the number of dependents for all other members. We then calculated the amount each servicemember could potentially receive based on the SNAP rules for that state. We used the current monthly BAH amount as a proxy for shelter expenses and replaced it with zero if that month's amount was negative.

If our estimates of which servicemembers should be enrolled in SNAP were accurate, we should estimate that almost none of those who are not enrolled in SNAP should be enrolled, while almost all of those who are enrolled in SNAP should be. In fact, our estimates of who should not be enrolled are reasonably accurate; we estimate that just 4 percent of servicemembers in our

sample who are not enrolled in SNAP could be eligible. Of those who are enrolled in SNAP, however, we estimate that only about 30 percent should be. When we reestimate their eligibility based on the actual number of dependents (not on household size according to PARIS), we estimate that only about 33 percent should be enrolled in each month. By paygrade, our estimates of those who are enrolled and should be are highest at E-2 and E-3 (about 40 percent), and they decrease with paygrade to a low of just 16 percent at E-5.

There are a number of possible explanations as to why more servicemembers are enrolled in SNAP than we estimate should be. Perhaps the most likely possibility is that we used a monthly average for income, and some of these servicemembers may have qualified based on a lower paygrade or before receiving a substantial incentive or special pay, or even based on income prior to accessing (for the most junior members). Recall that SNAP recipients are required to recertify every 12 to 18 months or when factors affecting eligibility change. As we noted, many of the most junior servicemembers likely will advance at least one paygrade within a few months of accession and may not have had to recertify, and may not have reported any changes. Regardless, we are not able to determine the reasons for why we estimate that more than half of those enrolled in SNAP appear to be ineligible to enroll.

As we described, our analysis is based on a restricted sample of those servicemembers who are the most likely to be receiving SNAP benefits. Our estimates of 0.08 to 0.1 percent currently enrolled in SNAP are lower bounds. We wanted to estimate an upper bound as well, which we calculated by selecting all servicemembers with a duty MHA in a state that reported any SNAP recipient each month. This sample includes 3,816 and 1,630 servicemembers in the PARIS data in May and August, respectively.²⁴ Based on this sample, 0.4 and 0.2 percent of servicemembers were receiving SNAP benefits in May and August, respectively. Applying these estimates to the approximately 1.1 million servicemembers in the US leaves us with an upper bound of 4,620 and 1,980 recipients in May and August, respectively.

Comparing May and August data

Examining the characteristics of servicemembers who are in one or both months of PARIS data may give us better insight into what could make a member become eligible or ineligible for SNAP and, in turn, could help inform policies to mitigate servicemembers' need for SNAP. We select observations from the ADMF, pay, ADFF, and PARIS data to address three questions:

1. What changes precede a disenrollment from SNAP?
2. What changes precipitate the enrollment in SNAP?

²⁴ This sample excludes observations in the PARIS data whose duty MHA is not in one of these states.

3. What are the characteristics of those who remain on SNAP for at least three months?

We differentiate PARIS observations into the following groups: (1) enrolled in SNAP in both months, referred to as *SNAP-Both*, (2) enrolled in SNAP in May but not August, referred to as *SNAP-May*, and (3) enrolled in SNAP in August only, referred to as *SNAP-Aug*.

Our requirements for inclusion in all of these groups are similar to those we used to establish our sample of the most likely SNAP recipients. First, we do not include servicemembers who are only in one month of the ADMF file because they either separated or were new accessions, and we are interested in how characteristics change over time.

We further restrict these groups to those servicemembers for whom we have the greatest confidence that they were enrolled in SNAP using the same general rules as we applied for the previous analysis, with some additional rules necessary for this analysis. In particular:

- MHA state and MHA duty state must match in both May and August, and they had to be in the same state in May and August. This restriction is necessary because it could take time for servicemembers to apply for SNAP benefits after moving to a new state; we may not see them in the August PARIS data if they are in the process of applying.
- SNAP state must match MHA state and MHA duty state.
- MHA state and MHA duty state must be a state that reported SNAP information in both May and August. If servicemembers lived in states that did not report SNAP in both months, we cannot be sure if they actually received SNAP in a state that did not participate in PARIS that month.
- SNAP start date must be after accession date.
- SNAP start date must be after May 31, 2019, for the SNAP-Aug group: As we noted earlier, some servicemembers who are in the ADMF data in both months are included only in the August PARIS data, even though their SNAP start dates in the August PARIS data are May 31 or earlier. We are not able to determine whether these servicemembers should be in the SNAP-Both group, so we drop these observations.

We then compared changes to certain servicemember characteristics in our restricted samples between May and August. Table 8 displays these results for variables that are likely to be related to SNAP eligibility. The first six variables concern family status according to the ADMF (i.e., number of dependents and marital status), followed by information according to PARIS on the size of the household (i.e., case count) and months on SNAP. Any variable referring to a change in status uses the change between May and August. Any DMDC variable that is static (not referring to a change in status) is as of August. We do not include summaries for entitlements because we do not know which month's entitlement was used for SNAP eligibility purposes. In either case, it is unlikely to be the May or August entitlement.

Table 8. Changes between May and August of SNAP recipients

Variable	SNAP-May	SNAP-August	SNAP-Both
Average age	28.76	27.38	28.08
Average number of dependents in August	3.66	4.08	4.33
More dependents	4%	19%	7%
Fewer dependents	1%	0%	0%
Married in August	86%	90%	93%
Changed marital status	2%	1%	0%
Average household size in August	4.08	4.71	4.76
Average months on SNAP	7.61	2.25	8.40
Paygrades E-1 through E-4	60%	75%	74%
Advanced	12%	20%	12%
Demoted	0%	0%	0%
Any change in family status or paygrade	17%	38%	18%
Number of servicemembers	162	79	127

Source: DMDC data.

Consistent with our findings regarding the larger sample, servicemembers on SNAP are younger, disproportionately in junior paygrades, and have several more dependents relative to their peers who are not on SNAP.

SNAP-May group

Servicemembers in the SNAP-May group received SNAP in May but no longer did in August, which could have been caused by a decrease in household size and/or an increase in household income.²⁵ Household income could increase because of a change in the income of other household members, servicemembers' promotions, receipt of special pays, or changes in other entitlements. However, only 1 percent of servicemembers in our sample decreased the number

²⁵ It also could have been caused by an increase in household assets, but this is less likely since so many states do not have an asset limit.

of dependents and only 12 percent were advanced. This suggests that the reason these servicemembers no longer received SNAP is not discernible with our data. Note that it appears that these servicemembers were on SNAP for about eight months. This may give us some indication regarding the average time members are on SNAP. However, these servicemembers could have been enrolled in SNAP in a state that does not participate in PARIS prior to being enrolled in the state in which they resided in May. In that case, eight months is an underestimate of the time that servicemembers are enrolled in SNAP.

SNAP-Aug group

In contrast to the SNAP-May group, we might expect to see a demotion for the SNAP-Aug group, or an increase in the number of dependents and/or household members. As before, the change also could be due to changes in the income of other household members, which we are not able to measure. About 19 percent experienced an increase in the number of dependents between May and August, 20 percent were promoted, and none were demoted. Clearly promotions were not enough to keep them from being eligible for SNAP, especially if they also added a dependent (38 percent had a change in paygrade and/or dependents). Referring to our earlier results, servicemembers in these very junior paygrades with three or more dependents are the most likely to be enrolled in SNAP, so advancing from E-2 to E-3 may not be associated with a large enough increase in entitlements. It also could be that a change in spousal employment (i.e., unemployment or decrease in hours or pay) may be a contributing factor to eligibility.

SNAP-Both group

The SNAP-Both group includes servicemembers who were enrolled in SNAP in both May and August. On average, members in this group have more than four dependents and only about 12 percent advanced, while about 7 percent added dependents. For this group, the characteristics we observe do not change for many servicemembers, which may explain why we see them on SNAP in both months. As with the SNAP-Aug group, promotions at these junior paygrades may not be sufficient to make members ineligible for SNAP, especially if they also added a dependent.

In summary, changes in the number of dependents and paygrade are not frequent enough to account for the changes in SNAP eligibility that we observe. This suggests that other factors we do not observe, such as the income of other household members, may account for changes in SNAP eligibility.

Dependents of junior servicemembers

The CNA study cited earlier estimated that, in 2018, 903 servicemembers in paygrades E-1 to E-3 might qualify for SNAP based on their military pay and family status, using the number of dependents as a proxy for the servicemembers' household size, and assuming that no other household income and assets exceed the limit for SNAP eligibility. The required household size for SNAP eligibility increases with income; the previous CNA study estimated that a servicemember in paygrades E-1 to E-3 who receives BAH would likely need at least four household members to qualify for SNAP. Since the services place restrictions on the number of dependents a servicemember can have at the time of enlistment, the study noted that it was not clear why so many junior servicemembers had a large number of dependents. In this section, we discuss accession policies for enlistees with dependents and examine the FY 2019 population of junior servicemembers with three or more dependents.

Accession policy

The services restrict enlistment of individuals with dependents in an attempt to ensure that enlistees can meet their financial responsibilities with service pay. DOD policy states the following:

The Military Services may not enlist married individuals with more than two dependents under the age of 18 or unmarried individuals with the custody of any dependents under the age of 18; however, the Secretary concerned may grant a waiver for particularly promising entrants. [23]

Although all services must follow this policy as a baseline, each service sets its own limits on dependency waivers. In general, enlistment eligibility and waiver policies refer to the number of dependents under the age of 18 in the custody of the applicant. Service policies sometimes specify a different level of waiver requirement depending on the number of dependents. A waiver also may be required if the applicant has non-dependent minor children (i.e., children for whom the applicant does not have legal or physical custody and is not required to pay child support). Table 9 provides an overview of service policies regarding dependency waivers for non-prior-service accessions into the AC in paygrades E-1 through E-4, as of December 2019. In addition to the requirements outlined here, servicemembers accessing into E-4 are sometimes subject to less stringent eligibility requirements. Note that no service has a policy restricting the number of dependents after accession, including immediately after graduating from initial training.

Table 9. Eligibility for enlistment based on marital status and number of dependents under age 18, for otherwise-qualified applicants, by service

Marital status	Number of minor dependents	Army	Navy	Air Force	Marine Corps	Coast Guard
Unmarried	0	Eligible	Eligible	Eligible	Eligible	Eligible
Unmarried	1 - 3	Not eligible	Not eligible	Waiver	Not eligible	Not eligible
Unmarried	4+	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible
Married	0	Eligible	Eligible	Eligible	Eligible	Eligible
Married	1	Eligible	Eligible	Eligible	Waiver	Eligible
Married	2	Eligible	Waiver	Eligible	Not eligible	Waiver
Married	3	Waiver	Waiver	Waiver	Not eligible	Waiver
Married	4+	Waiver	Not eligible	Not eligible	Not eligible	Waiver

Source: Enlistment eligibility and waiver requirements from [24] (Army), [25] (Navy), [26] (Air Force), [27] (Marine Corps), and [28] (Coast Guard).

Data

Junior servicemembers (those in paygrades E-1 to E-4) with several dependents could have reached their current situation in one of three ways. They may have (1) accessed with dependents (potentially with a waiver), (2) added them relatively quickly since accessing, or (3) been demoted from a higher paygrade after several YOS.

We used data from the ADFP to determine which of these reasons applies to the current population of junior servicemembers with several dependents. We examined this question by looking at two populations (these are not mutually exclusive): (1) October 2017 through September 2018 accessions and (2) servicemembers in paygrades E-1 through E-4 as of September 2019. The first population is intended to answer the question of whether junior servicemembers with several dependents accessed with those dependents or added them shortly after accessing, while the second population is used to understand whether junior servicemembers with several dependents are experienced servicemembers who recently were demoted.

Dependents at accession

In FY 2018, 94 percent of accessions had no dependents recorded at their first ADFP entry. However, some of these servicemembers with no dependents are married according to the ADFP, and non-military spouses are dependents. Of those who are recorded as married at their first observation in the ADFP, 23 percent have no dependents on file; for convenience, we refer to this group as married-zeros. These individuals appear to add dependents at a higher rate during the first few months of service than those who are single or married to a military spouse.

Over 60 percent of married-zeros add at least one dependent by three months of service, while only about 15 percent of servicemembers married to a military spouse add a dependent in that timeframe. Because of the discrepancy in the rate of adding dependents between married-zeros and other servicemembers, we believe that there is likely a flaw in the data and that most of the dependents added by married-zeros within the first few months of service likely were dependents at accession. To correct for this lag in adding these dependents to the ADFP, for married-zeros, we treat the first set of dependents that appear in the data within the first six months of service as having existed at accession.²⁶

Table 10 shows the number of FY 2018 accessions with dependents by service, paygrade, and number of dependents (according to our correction rules). Using our rule to correct for dependents, we estimate that approximately 6 percent of FY 2018 accessions had dependents at the time of accession; approximately 1,400 individuals (about 1 percent) had more than two dependents. Of those with more than two dependents, approximately 80 percent were Army accessions, 15 percent were Air Force, and 5 percent were Navy accessions. Coast Guard accessions accounted for less than 1 percent, and none were Marines.

Table 10. FY 2018 accessions by service, paygrade, and number of dependents

Service	Paygrade				Total
	E-1	E-2	E-3	E-4	
Air Force					
0 dependents	16,751	2,432	5,638	0	24,821
1 dependent	642	146	461	0	1,249
2 dependents	209	53	131	0	393
3+ dependents	92	21	90	0	203
Service total	17,694	2,652	6,320	0	26,666
Army					
0 dependents	30,408	9,824	3,211	3,272	46,715
1 dependent	1,498	497	421	491	2,907
2 dependents	975	236	191	180	1,582

²⁶ To implement this data fix for married-zeros, we look forward up to six months of service to find the *first* time that the servicemember has dependents on file. Any dependent information that was added is backfilled for the preceding months. For example, if a spouse and one child enter the data at the second month of service, and a second child enters at the fourth month of service, we treat the spouse and first child as having existed at accession, but not the second child. This may overstate the number of known dependents at accession for married servicemembers, particularly if the dependent added is a newborn child. However, for the purpose of dependent waivers, the services include unborn children in the count of dependents for enlistees with pregnant spouses, so this error is likely minimal.

Service	Paygrade				Total
	E-1	E-2	E-3	E-4	
3+ dependents	598	155	184	176	1,113
Service total	33,479	10,712	4,007	4,119	52,317
Navy					
0 dependents	18,425	2,827	8,582	7	29,841
1 dependent	142	41	140	3	326
2 dependents	70	23	46	0	139
3+ dependents	37	12	21	0	70
Service total	18,674	2,903	8,789	10	30,376
Marine Corps					
0 dependents	18,478	8,588	0	0	27,066
1 dependent	27	17	0	0	44
2 dependents	6	4	0	0	10
3+ dependents	0	0	0	0	0
Service total	18,511	8,609	0	0	27,120
Coast Guard					
0 dependents	1,123	124	1,427	1	2,675
1 dependent	24	2	62	1	89
2 dependents	3	2	16	0	21
3+ dependents	3	1	5	0	9
Service total	1,153	129	1,510	2	2,794
Total					
0 dependents	85,185	23,795	18,858	3,280	131,118
1 dependent	2,333	703	1,084	495	4,615
2 dependents	1,263	318	384	180	2,145
3+ dependents	730	189	300	176	1,395
DOD total	89,511	25,005	20,626	4,131	139,273

Source: DMDC data.

Dependents within the first year of service

In the first year of service, it is common for servicemembers to add one or more dependents, either by marriage or the birth of a child. Table 11 shows the number of FY 2018 accessions with 1, 2, and 3 or more dependents at accession and at the end of the first year of service. As before, we apply our correction to the number of dependents of servicemembers at accession.

Table 11. Dependents of FY 2018 accessions at accession and at 1 year of service, by service

Dependents	YOS	Army	Air Force	Navy	Marine Corps	Coast Guard	Total
1	Accession	2,907	1,249	326	44	89	4,615
	1 Year	6,890	4,081	2,730	1,832	343	15,876
2	Accession	1,582	393	139	10	21	2,145
	1 Year	2,514	896	693	313	93	4,509
3+	Accession	1,113	203	70	0	9	1,395
	1 Year	1,778	464	421	71	31	2,765

Source: DMDC data.

About 8,100 of the FY 2018 accessions had any dependents, and over 23,000 had at least one dependent by the end of their first year. The largest increase was for servicemembers with one dependent; over 11,000 more servicemembers had one dependent at the end of their first year than accessed with one dependent.

Dependents of current E-1 to E-4 servicemembers

Finally, we looked at a snapshot of the active duty file to determine how many junior servicemembers with dependents had been demoted. As of September 2019, there were approximately 59,000 servicemembers in paygrades E-1 to E-4 with two or more dependents. Table 12 shows the number of these junior servicemembers, by paygrade and service.

Table 12. Servicemembers with two or more dependents, by paygrade and service, September 2019

Paygrade	Army	Navy	Air Force	Marine Corps	Coast Guard	Total
E-1	1,000	217	236	34	5	1,492
E-2	1,940	549	221	222	16	2,948
E-3	4,925	2,520	3,662	1,661	319	13,087
E-4	22,610	6,380	7,137	3,289	1,073	41,489
Total	30,475	9,666	11,256	5,206	1,413	58,016

Source: ADFF.

For all of these servicemembers, we looked backward on the ADFF from September 2019 and noted their highest paygrades. Table 13 shows the number that had a higher paygrade—and hence were demoted—by their paygrade as of September 2019. About 25 percent of current

E-1s with several dependents had been demoted, while a smaller percentage of E-2s to E-4s were demoted. Overall, just 5 percent of all junior servicemembers with two or more dependents were demoted. Servicemembers who are demoted to E-2 through E-4 are less likely to be administratively separated as part of the punishment for the offense that caused them to be demoted. It is far more common, however, that punishments that include a demotion to E-1 are accompanied by an administrative separation.

Table 13. Demotion of E-1 to E-4 servicemembers with two or more dependents

Paygrade as of September 2019	Demoted	
	Number	Percentage
E-1	375	25
E-2	282	9.6
E-3	658	5.0
E-4	1,624	3.9
All	2,939	5.0

Source: ADFP.

In summary, then, demotions explain very few cases of interest; 95 percent of junior servicemembers with two or more dependents accessed with dependents or added them shortly after accessing.

Summary and Recommendations

It is important to understand the adequacy of military entitlements to ensure that servicemembers are compensated fairly and that their compensation is able to attract, retain, and motivate high-quality individuals. One measure of the adequacy of their compensation is determining how many qualify for public assistance, specifically SNAP, as recorded in the PARIS data.

This study used the most comprehensive data regarding the number of servicemembers enrolled in SNAP, including individual-level data on SNAP recipients in 34 states. Our analysis of these data concludes that a large number of servicemembers in the PARIS data are likely no longer members of those households; eligibility started well before they went on active duty—likely when they were dependent children of the head of household.

We created a sample of what we believe to be true recipients of SNAP in May and August for our analysis. We found that between 0.08 and 0.1 percent of our sample was enrolled in SNAP each month. If these percentages apply to all servicemembers stationed in the United States, we estimate that about 880 to 1,100 servicemembers could potentially be on SNAP at any one time. Our estimates of a less restricted sample found that an upper bound estimate is 4,620 servicemembers receiving SNAP benefits. For reference, our best estimate of adults in the US age 18 to 59 who were enrolled in SNAP in FY 2018 is approximately 9.6 percent.

We also found that servicemembers who qualify for SNAP are mostly junior enlisted, in paygrades E-1 through E-4, who have several dependents. Even so, fewer than 5 percent of these servicemembers are enrolled in SNAP, and these junior servicemembers with three or more dependents represent 3.3 percent of our sample. Our analysis also concludes that very few of these junior members were demoted from higher paygrades; instead, the vast majority likely accessed with dependents or added them (via marriage or the birth or adoption of a child) within the first year of service. We found that the Army accesses the most enlisted servicemembers with several dependents. Consequently, there are more junior members in the Army, both in absolute numbers and percentage of each service, who are enrolled in SNAP than in the other services.

There is some indication that the average duration of SNAP enrollment is about 8 months, but this is likely an underestimate because we can measure the duration of only those members who were recipients in the states that participated in PARIS. Yet, because the majority of eligible members are in junior enlisted paygrades, and will promote relatively quickly, the duration of their eligibility is likely not much longer than this.

Better estimates of which servicemembers may qualify for SNAP could be obtained with more data. To that end, we make the following recommendations.

First, analysis requires having more months of all of the data so that patterns in SNAP use can be followed over a longer period. For instance, some servicemembers might enroll in SNAP off and on over the course of many months or even years. It also would be helpful if more states participated in the PARIS match.

Second, obtaining data from the Social Security Administration (SSA) on members of the household, and on servicemembers prior to accession, also may provide valuable insight into total household income.

Third, it may be possible to get more precise measures of SNAP enrollment by surveying members who are in the PARIS data to determine whether they are in fact still in that household, and that the household is still enrolled in SNAP. This survey would not have to include all members; it could be accomplished with a randomized sample of servicemembers. This may not be an attractive option, however, because servicemembers may not want to share that information with DOD.

Fourth, the unprecedented level of unemployment caused by the COVID-19 pandemic will surely have an effect on the number of servicemembers who are receiving SNAP benefits, but the net results are uncertain. On one hand, the services likely will have less difficulty in recruiting, so fewer accessions will have dependents. On the other hand, retention will be higher, and perhaps servicemembers with dependents will be the most likely to want to remain on active duty. Further, those members with spouses likely will have lower household incomes because more working spouses likely will be unemployed. SSA data could be useful for this purpose as well.

Consequently, we recommend that DOD look at servicemembers' use of SNAP over the next year or longer to determine whether COVID-19 significantly changes the level of use.

Appendix A: State SNAP Eligibility Criteria

Table 14 contains information on state-specific eligibility criteria, including whether a state uses a BBCE criterion, gross income limits, SUA allowance, and asset limits. Gross income limit is the federal level for states that do not participate in BBCE. For BBCE states, gross income limit refers to the TANF income limit. Unless otherwise indicated, the SUA indicated is the Heating and Cooling Utility Allowance (HCSUA), which is the largest of all utility allowances.

Table 14. FY 2019 state SNAP criteria

State	BBCE	SUA ^a	Gross income limit (% of federal poverty line)	Asset limit	Vehicles included
AL	Yes	\$374	130	^b	No
AK	No	Central - \$390, North - \$589, NW - \$826, S. Central - \$445, SE - \$360, SW - \$763	130	Federal standard (std.)	At least one exempt
AZ	Yes	1-3 HH \$278, 4+ HH \$375	185	No limit	No
AR	No	\$284	130	Federal std.	At least one exempt
CA	Yes	\$415	200	No limit	No
CO	Yes	\$476	200	^b	No
CT	Yes	\$736	185	No limit	No
DE	Yes	\$417	200	No limit	At least one exempt
FL	Yes	\$359	200	No limit	No
GA	Yes	\$377	130	^b	No
HI ^c	Yes	1 HH - \$193, 2 HH - \$209, 3 HH - \$240, 4/5 HH - \$297, 6 HH - \$349, 7-10 HH - \$394	200	No limit	No
IA	Yes	\$449	160	No limit	At least one exempt
ID	Yes	\$368	130	\$5,000	At least one exempt
IL	Yes	\$466	165	^b	No

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State	BBCE	SUA ^a	Gross income limit (% of federal poverty line)	Asset limit	Vehicles included
IN	No	\$421	130	Federal std.	No
KS	No	\$357	130	Federal std.	At least one exempt; fair market value over \$4,650 included
KY	Yes	\$321	130	^b	No
LA	No	\$356	130	Federal std.	No
MA	Yes	\$643	200	^b	No
MD	Yes	\$420	200	No limit	No
ME	Yes	\$699	185	\$5,000	At least one exempt
MI	Yes	\$543	200	\$5,000	1st vehicle exempt, others over \$15,000 value counted
MN	Yes	\$556	165	No limit	No
MO	No	\$380	130	Federal std.	No
MS	Yes	\$278	130	No limit	No
MT	Yes	\$545	200	No limit	No
NC	Yes	1 HH - \$437, 2 HH - \$480 3 HH - \$528, 4 HH - \$576 5+ HH - \$628	200	No limit	No
ND	Yes	\$615	200	No limit	Federal std.
NE	Yes	\$481	130	\$25,000	At least one exempt
NH	^d	\$724	185	No limit	At least one exempt
NJ	Yes	\$542	185	No limit	No
NM	Yes	\$344	165	No limit	No
NV	Yes	\$285	200	No limit	At least one exempt
NY	^e	Nassau and Suffolk - \$744, NYC - \$800, all others - \$661	200 with dependent care expenses, 150 otherwise	^b	No
OH	Yes	\$544	130	^b	No
OK	Yes	\$362	130	No limit	No
OR	Yes	\$442	185	No limit	At least one exempt
PA	Yes	\$588	160	^b	At least one exempt
RI	Yes	\$635	185	^b	At least one exempt
SC	Yes	\$302	130	^b	At least one exempt
SD	No	\$732	130	Federal std.	At least one exempt

UNCLASSIFIED

State	BBCE	SUA ^a	Gross income limit (% of federal poverty line)	Asset limit	Vehicles included
TN	No	1 HH- \$317, 2 HH- \$328, 3 HH- \$341, 4 HH- \$353, 5 HH - \$364, 6 HH- \$376, 7 HH- \$387, 8 HH- \$399, 9 HH- \$413, 10+ HH - \$423	130	Federal std.	No
TX	Yes	\$357	165	\$5,000	Excludes one vehicle up to \$15,000, includes excess vehicle value
UT	No	\$360	130	Federal std.	No
VA	No	1-3 HH \$311, 4+ HH \$387	130	Federal std.	No
VT	Yes	\$822	185	No limit	At least one exempt
WA	Yes	\$430	200	No limit	At least one exempt
WI	Yes	\$452	200	No limit	No
WV	Yes	\$421	200	No limit	No
WY	No	\$393	130	Federal std.	Federal std.
DC	Yes	\$331	200	No limit	No
Guam ^c	Yes	1 HH- \$133, 2-3 HH- \$153, 4 HH- \$183, 5 HH- \$207, 6 HH- \$237, 7 HH- \$269, 8 HH- \$281, 9-10 HH- \$301, 11+ HH - \$309	165	No limit	No
VI ^f	Yes	\$32	175	No limit	No

Sources: [7, 29].

^a HH refers to the number of members of the household.

^b No limit: Households with an elderly/disabled member with income over 200 percent of the poverty limit face \$3,500 limit.

^c The highest allowance for Hawaii and Guam is basic/limited utility allowance.

^d Household with at least one dependent child.

^e Household with dependent care expenses or earned income.

^f The only allowance for Virgin Islands is for phone.

Appendix B: Proposed Changes to SNAP

The Trump administration proposed several changes to the SNAP program in 2019. The first change, regarding work requirements for ABAWDs, was finalized in December 2019 and was slated to take effect in April 2020. A federal judge blocked the change on March 13, 2020 [30]. On March 18, 2020, President Trump signed a coronavirus response bill into law that reversed the proposed rule change, but only during the coronavirus outbreak. The Department of Agriculture had not determined at that time whether it would continue to fight the court case.

The other changes refer to BBCE and SUA, and have not been finalized as of this writing. It is likely that none of these changes will be adopted because of the recession caused by the COVID-19 virus. We describe the proposed changes for reference only. Note that all estimates of the impact of these proposed changes were made before the COVID-19 outbreak.

Requirements for able-bodied adults without dependents

SNAP eligibility rules specify that ABAWDs cannot receive benefits for more than 3 months in a 36-month period unless they meet certain work requirements. However, states have the ability to waive this limitation if labor market conditions are sufficiently poor. Prior to the proposed implementation of this rule, states could request waivers for areas where local unemployment was at least 20 percent higher than the national unemployment rate. In 2019, at a time when national unemployment hit historic lows, an estimated 700,000 individuals could have lost benefits with this proposed rule change [30].

Revision of categorical eligibility

Currently, BBCE is based on receipt of cash and non-cash assistance from TANF or other programs. The proposed rule would limit the programs through which states can confer BBCE to (a) those that provide ongoing and substantial TANF benefits and (b) those that provide non-TANF benefits that include only subsidized employment, work supports, or child care [31]. Many low-cost programs providing services, such as brochures or referrals, would no longer qualify to confer BBCE. While most TANF cash benefits still would confer categorical eligibility,

estimates show that only 2 percent of SNAP households receiving TANF cash benefits have income below the Federal Poverty Guideline (FPG) [32].

This proposed rule change would not affect the benefit received by eligible households because that is determined by a net income calculation. Therefore, the households that could lose SNAP benefits if this rule is adopted are those with a gross income or asset value higher than the baseline SNAP eligibility threshold and a net income low enough to receive a non-zero monthly SNAP benefit. These households likely have many dependents, high dependent-care costs, and/or high excess shelter costs [31]. The Regulatory Impact Analysis conducted by USDA estimated that, under the proposed rule, 9 percent of current SNAP households (1.7 million households, containing 3.1 million individuals) would lose eligibility [32].

Standardization of state HCSUAs

The SNAP net income calculation includes a deduction for excess shelter costs, based on the household's estimated rent or mortgage, and cost of utilities. Instead of using actual utility expenses in the shelter cost estimate, most states require households to claim the SUA set by the state. States have considerable flexibility in the methodology used to set SUAs, which can result in significant variation in benefit levels across states for otherwise-similar households. The proposed rule would standardize the calculation of the Heating and Cooling SUA (HCSUA), and would cap other SUAs at a percentage of the HCSUA [33].

The proposed change to SUA policy is expected to have little to no effect on SNAP eligibility, but it would affect benefit amounts. About 19 percent of households nationwide are expected to experience a loss in benefits if this rule is adopted, and 16 percent are expected to receive an increase. The average increase is estimated at \$13/month, while the average loss is estimated at \$31/month; the net impact is a nationwide 1.6 percent decrease in benefits [34].

Appendix C: Military Data

SNAP eligibility is based on state, household income, assets, housing costs, and number of household members.²⁷ Of these, DMDC collects only the following (with corresponding dataset in parentheses):

- State in which servicemembers live (Active Duty Manpower File (ADMF))
- Servicemembers' monthly income (active duty pay)
- BAH (a proxy for housing costs—active duty pay)
- Number of dependents (Active Duty Family File (ADFF))

Notably absent are total household income, assets, actual housing costs, and actual number of household members. Appendix D discusses the employment of servicemembers' spouses, which may shed some light on the magnitude of spousal income.

In summary, most servicemembers with spouses and no children likely would not qualify for SNAP because of the ABAWD requirement; either they would be disqualified because the spouse does not satisfy the ABAWD requirements, or the total household income would exceed SNAP limits because of the additional spousal income. However, studies have found that military spousal unemployment is typically higher than civilian unemployment, so servicemembers' compensation may contribute most or all of the total household income if there are children in the household (since ABAWD does not apply if there are young children in the household).

Information regarding household assets is not included in any data that DOD collects. For some states, the asset limit is reasonably low and would likely disqualify many, or most, servicemembers.²⁸

DOD also does not collect information on servicemembers' household costs (mortgage, rent, and insurance) or utility costs. Our best estimate of these costs is BAH, which is meant to cover housing costs in servicemembers' duty areas. We use SUA to estimate utilities, which most states use to calculate excess shelter costs, regardless of the availability of actual utility costs. We understand that BAH is intended to cover utilities as well as rent, so we may be overestimating excess shelter costs, but we believe that this has a minimal impact for two reasons: (1) it is likely that SUA is used in practice for servicemembers, regardless of whether

²⁷ Some states allow deductions for child care.

²⁸ Referring to Appendix A, however, 34 states plus DC, Guam, and the Virgin Islands do not limit asset levels for SNAP eligibility.

they receive BAH, and (2) very few servicemembers ever reach the threshold for deducting excess shelter costs.

Finally, SNAP eligibility is based on the number of household members, but households are not necessarily composed of servicemembers' military dependents only. For instance, cohabiting partners, non-biological children of cohabiting partners, roommates, or boarders are not military dependents but are considered as household members for SNAP purposes. Information regarding these household members is not available.

ADMF

The ADMF contains information regarding demographics (e.g., gender, race/ethnicity, and age) and service (e.g., branch, paygrade, length of service (LOS), and occupation) for active duty servicemembers.

DMDC did not provide us with information about where servicemembers live. The best approximation is to use MHA, on which BAH is based. MHA, in turn, is based on duty unit ZIP code. We asked for MHA and duty unit country, state, and ZIP code.

It is important to note that servicemembers do not necessarily live in the ZIP code or state that corresponds to their duty.

Pay

DMDC pay files contain information on servicemembers' current total monthly entitlements, and the amount of certain special incentive and bonus pays specifically. We obtained the following information regarding the current month's entitlements:

- Amount of basic pay
- Amount of BAS
- Amount of BAH
- BAH category (e.g., partial BAH, BAH with or without dependents, or transient BAH)
- Total entitlements

Ideally, we would like to know the value of all special and incentive pays to determine whether the servicemember had an unusual entitlement that month. Unfortunately, the services are not required to provide information regarding all special pays to DMDC, but they are required to report total entitlements received that month.

ADFF

We received variables pertaining to marital status and the number of dependents that each servicemember had in May and August. As we noted earlier, the number of dependents may not be an accurate reflection of the number of household members, but it is the best measure we have.

Next, we discuss issues we found with the ADMF, pay, and ADFF data that we received.

Issues with military data

Recall that only three variables required to determine SNAP eligibility were available to us (i.e., state, income, and dependents). We begin our discussion with these variables for all AC servicemembers. For reference, there were 1,356,226 and 1,372,069 AC servicemembers in the May and August files, respectively.

State

Regarding state, we found that MHA (which is from the pay data) is missing for a large number of servicemembers, including 37 percent of May and 38 percent of August servicemembers. One valid reason for a missing MHA is that members' duty locations are outside the United States.

Recall that MHA is based on duty location, so we wanted to determine whether members with a missing MHA also were assigned to a duty location outside the United States, according to their assigned duty unit on the ADMF. We created what we refer to as a duty MHA, using a crosswalk of duty unit ZIP code to MHA. We found that only about 65 percent of observations agreed in MHA and duty MHA, and 29 and 28 percent, respectively, of observations missing MHA on the May and August files had an overseas duty location. In other words, more than 70 percent of observations missing an MHA were servicemembers stationed in the United States, according to their duty locations.

Because so few of those missing MHAs had overseas duty locations, we wanted to see how well all MHA observations agreed with the duty MHA. We found that the two MHAs did not match in a large number of cases (35 and 36 percent in May and August, respectively). It is not possible for us to determine which is more accurate, MHA or duty location, and this means that

we are not able to accurately determine SNAP eligibility for servicemembers with inconsistent MHA and duty MHA.²⁹

Income

The next information we wanted to verify was income, according to the pay data. We examined five different monthly entitlement factors: (1) monthly total entitlements, (2) basic pay, (3) BAS, (4) BAH, and (5) the difference between total monthly entitlements and the sum of (2) through (4). The latter was calculated because we do not have all special pays. If total entitlements are more or less than the sum of these other pays, then either some special pays were negative that month or we are missing some other positive special pays. If so, the total entitlement that month would be unusually small or large relative to other months; using that month's entitlements to determine SNAP eligibility would be inaccurate.

We found that total monthly entitlements ranged between -\$54,934 and +\$216,435, basic pay ranged between -\$107,655 and +\$115,922, BAS ranged between -\$8,925 and +\$15,200, and BAH ranged between -\$138,409 and +\$80,599. Negative entitlements are an indication that servicemembers received overpayments for that entitlement in previous months. Large positive values indicate that there was an underpayment in previous months or that a lump-sum payment for a bonus or special pay was received that month.

Note that no one had a missing or zero BAH value for the current month. For many, their BAH payment was categorized as either partial or transient. We are not able to determine which members live in government-provided housing and, consequently, do not receive BAH; it could be that members receiving transient or partial payments are on their way to offbase or privatized base housing and soon will receive BAH.

Our test of whether other special pays were excluded found that a large number of members must have had at least some additional special or incentive pays; approximately 40 percent of observations in both months had a current total entitlement that was at least \$100 larger than the sum of these basic entitlements, while about 10 percent in each month must have had a special pay or incentive of -\$100 or greater. We conclude that it is not possible to determine differences in monthly entitlements between SNAP recipients and their peers; there are too many extreme values, and servicemembers who were enrolled in SNAP in May or August did not use the entitlements that month for eligibility.

²⁹ We wanted to see whether the servicemember was in the process of moving in May (which may account for the discrepancy in MHA and duty MHA) by examining these variables in the August file. The results indicated that there was no consistency regarding which of these location variables matched in August. In fact, sometimes there was a different, third MHA or duty MHA in the August file.

Appendix D: Household Income

Outside of servicemembers' military pay, one of the most important components of SNAP eligibility and benefit calculations is household income. This includes spousal income, as well as the income of other household members that is available to the household head, such as that of a cohabiting partner.

Most military families that include only the servicemember and a spouse likely exceed federal and BBCE gross income limits, especially if the spouse is working. Most spouses of servicemembers who do not have dependent children or who are not pregnant are required to meet work requirements to maintain SNAP eligibility. However, spouse or partner employment and income are not included in the administrative data collected by the services, so it is not possible to determine servicemembers' total household income. One survey that may help to provide insights into the employment patterns of servicemembers' spouses is the DOD Survey of Active Duty Spouses, which is administered every few years to obtain information about spouses' employment situations, satisfaction with military life, and other issues. The most recent survey iterations occurred in 2017, 2015, and 2012. In 2017, the survey was the responsibility of the Office of People Analytics; before that, it was the responsibility of DMDC. Survey data are not readily available, but the summary reports still can shed some light on military spouse employment issues. Unless noted otherwise, the following subsection regarding spousal employment is from [35].

Spousal employment

In 2017, roughly 46 percent of active duty spouses were employed, 15 percent were unemployed, and 39 percent were not in the labor force. Labor force participation is somewhat lower for military spouses relative to civilian families; 31 percent of married women in the US in 2017 were not in the labor force.³⁰ The most striking difference between military spouses and other married people is the unemployment rate; of those in the labor force, only 2.8 percent of married women and 2.4 percent of married men were unemployed in 2017. The unemployment rate of military spouses is over 5 times higher than that of the married civilian population. One explanation for why military spouses have a higher unemployment rate could be that the spouses of servicemembers are younger; the average age of spouses in the 2017 survey was 32, while the median age of the labor force in 2018 was 41.9 [36]. Frequent moves

³⁰ This statistic is not available for married men because it comes from a report on the labor force status of women.

also may contribute to their higher unemployment. Active duty spouses also are more likely to have some college, less likely to be white, and more likely to have children, compared to the US civilian labor force [37-39].

The fact that military spouses have a much higher unemployment rate means that, for many military households, the servicemember's compensation contributes most or all of the total household income, especially if there are children in the household.

Financial conditions

The survey also asks active duty spouses about the condition of their families' finances. While these qualitative results do not have direct implications for SNAP eligibility calculations, they likely are correlated. Ten percent of spouses reported that their financial condition was "not comfortable;" this was higher among families of junior enlisted servicemembers (16 percent) and families where the spouse was unemployed (20 percent).

When asked about specific indicators of financial instability, 12 percent reported having to borrow money from family or friends to pay bills, 9 percent took money out of a retirement or investment fund to pay living expenses, and 4 percent failed to make a car payment. The 2017 report does not differentiate these findings by demographic factors, but the 2015 report shows that most indicators of financial difficulty are highest among junior enlisted servicemembers and families where the spouse was unemployed [40]. These findings are consistent with the analysis, which indicated that junior enlisted servicemembers with dependents were the most likely to qualify for SNAP.

Appendix E: SNAP Sample Metrics

Each month, we selected servicemembers whose MHA was the same as their duty MHA. Of these, we selected only those MHAs that had at least one servicemember who satisfied our criteria for inclusion that month. That is, both MHAs had to be in the same state as their SNAP state, and they had to have started SNAP after accession. The MHAs included in this sample are displayed in Table 15.

Table 15. Total observations in MHAs included in sample, by month

Row labels	May	August
ABILENE/DYESS AFB, TX	3,807	3,844
ALBANY, GA	237	242
ALBUQUERQUE/KIRTLAND AFB, NM	2,590	2,561
ASTORIA, OR	551	526
BREMERTON, WA	3,849	3,839
CAMP LEJEUNE, NC	21,040	21,508
CANNON AFB/CLOVIS, NM	3,484	3,413
CAPE COD-PLYMOUTH, MA	641	642
CAPE MAY, NJ	784	959
COASTAL MAINE, ME	294	272
COLORADO SPRINGS, CO	22,321	22,450
COOS BAY, OR	292	285
CORPUS CHRISTI, TX	1,930	1,958
DAVIS-MONTHAN AFB, AZ	4,854	4,955
DENVER, CO	2,234	2,272
DOVER AFB/REHOBOTH, DE	N/A	2,815
DURHAM/CHAPEL HILL, NC	40	N/A
EGLIN AFB, FL	14,029	13,968
EL PASO, TX	16,450	16,405

Row labels	May	August
ELIZABETH CITY, NC	851	N/A
ESSEX CO, MA	90	84
FLORIDA KEYS, FL	1,371	N/A
FORT BENNING, GA	9,913	10,316
FORT BRAGG/POPE, NC	32,346	32,207
FORT CAMPBELL, KY	17,716	17,550
FORT DETRICK, MD	858	865
FORT DRUM/WATERTOWN, NY	8,490	8,477
FORT G. G. MEADE, MD	9,508	9,529
FORT GORDON, GA	7,040	6,997
FORT HOOD, TX	21,562	21,307
FORT HUACHUCA, AZ	2,216	2,194
FORT KNOX, KY	N/A	2,480
FORT LEONARD WOOD, MO	4,545	4,632
FORT MONMOUTH/EARLE NWS, NJ	303	303
FORT POLK, LA	4,935	4,963
FORT RILEY, KS	8,815	8,797
FORT SILL/LAWTON, OK	5,260	5,373
FORT STEWART, GA	9,670	9,607
GOODFELLOW AFB, TX	1,273	N/A
HOUSTON, TX	1,395	N/A
JACKSONVILLE, FL	10,945	11,066
JB MCGUIRE-DIX-LAKEHURST, NJ	4,666	4,680
KINGS BAY/BRUNSWICK, GA	1,818	N/A
LONG ISLAND, NY	465	N/A
MALMSTROM AFB/GREAT FLS, MT	2,257	N/A
MIAMI/FORT LAUDERDALE, FL	2,549	2,497
MILWAUKEE, WI	275	280

Row labels	May	August
MINOT AFB, ND	N/A	4,189
MOODY AFB, GA	3,588	3,529
MOREHEAD/CHERRY PT MCAS, NC	3,958	3,900
MOUNTAIN HOME AFB, ID	N/A	2,553
NELLIS AFB/LAS VEGAS, NV	8,307	8,351
NEW ORLEANS, LA	2,208	N/A
NEWPORT, RI	1,562	1,584
OGDEN/HILL AFB, UT	3,416	
OKLAHOMA CITY, OK	4,680	4,761
OMAHA/OFFUTT AFB, NE	5,084	5,077
ORLANDO, FL	210	213
OUTER BANKS, NC	110	N/A
PANAMA CITY, FL	1,644	N/A
PATRICK AFB, FL	1,566	1,573
PENSACOLA, FL	6,365	6,381
PHOENIX, AZ	4,181	4,281
ROBINS AFB, GA	2,502	2,534
SAN ANTONIO, TX	18,502	18,245
SAVANNAH, GA	2,684	N/A
SEYMOUR JOHNSON AFB, NC	3,728	3,649
SHREVEPORT/BARKSDALE AFB, LA	3,886	N/A
SPOKANE, WA	2,420	2,449
STATEN ISLAND, NY	514	493
TACOMA, WA	19,839	19,778
TAMPA, FL	6,281	6,269
WHIDBEY ISLAND, WA	5,679	5,717
WHITEMAN AFB, MO	3,150	3,123
WICHITA/MCCONNELL AFB, KS	2,371	2,406

Row labels	May	August
YAKIMA, WA	78	75
YUMA, AZ	2,064	2,037
Grand Total	391,196	380,285

Source: DMDC data.

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Abbreviations

ABAWDs	able-bodied adults without dependents
AC	active component
ADFF	Active Duty Family File
ADMF	Active Duty Manpower File
AIP	Assignment Incentive Pay
BAH	Basic Allowance for Housing
BAS	Basic Allowance for Subsistence
BBCE	Broad-Based Categorical Eligibility
CFR	Code of Federal Regulations
COVID-19	coronavirus disease 2019
CZTE	Combat Zone Tax Exclusion
DC	District of Columbia
DEERS	Defense Enrollment Eligibility Reporting System
DMDC	Defense Manpower Data Center
DOD	Department of Defense
FLPB	Foreign Language Proficiency Bonus
FNS	Food and Nutrition Service
FPG	Federal Poverty Guideline
FY	fiscal year
GA	General Assistance
HCSUA	Heating and Cooling Utility Allowance
HDP-L	Hardship Duty Pay Location
HH	household
HHS	Department of Health and Human Services
IDP	Imminent Danger Pay

LOS	length of service
MHA	Military Housing Area
OCS	Officer Candidate School
PARIS	Public Assistance Reporting Information System
QRMC	Quadrennial Review of Military Compensation
SNAP	Supplemental Nutrition Assistance Program
SSA	Social Security Administration
SSI	Supplemental Security Income
SSN	Social Security Number
SUA	Standard Utility Allowance
TANF	Temporary Assistance for Needy Families
U.S.C.	United States Code
USDA	US Department of Agriculture
VI	Virgin Islands
YOS	years of service

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