

Medical Event Reporting in the 2005 to 2013 MEPS According to the Person's Relationship to the Respondent and Family Type

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Abstract

This paper analyzes medical event estimates in the Medical Expenditure Panel Survey (MEPS) in an effort to understand event reporting behaviors. MEPS is a nationally representative panel survey studying health care use, access, expenditures, sources of payment, insurance coverage, and quality of care. Each year a new panel begins with each panel having five rounds of data collection over 2 ½ years that cover a two-year reference period. To understand medical event reporting behaviors of self-reports vs. proxy reporting (reporting for other family members), trends from 2005 to 2013 in reported utilization for the family respondent and for other members of each family responding unit in terms of the other members' relationships to the respondent were analyzed. We considered seven relationship-to-the-respondent categories: Self; Spouse/partner; Parent of the respondent; Age 18-24 son/daughter of the respondent; Age 25+ son/daughter of the respondent; Other adult; and Children. Our analysis was stratified by six types of families: Single adult no children; Married/cohabitating 2 adults no children; Other 2 or more adults no children; Single adult with children; Married/cohabitating 2 adults with children; and Other 2 or more adults with children. The type of event analyzed was ambulatory visits. During the period 2005 to 2013, there was not much difference in trends in the reporting of ambulatory visits by the respondent across groups. None of the major relationship categories (Self, Spouse/partner, and Children) had significant changes in either percent with or average number of ambulatory visits from 2005 to 2013 for all family types combined nor within any of the six types of families. We saw some differences for the small groups of Parent of the respondent (about 2% of the 2013 sample) and Age 18-24 sons/daughters of the respondent (about 5% of the 2013 sample). For all family types combined there was a decline in the percent with an ambulatory visit and in the average number of visits in the calendar year for Parent of the respondent. There was a corresponding decline in the average number of visits for Parent of the respondent within the family type, Other 2 or more adults with children families. On the other hand there was an increase in the percent with an ambulatory visit from 2005 to 2013 for Age 18-24 children of the respondent in all types of families combined and in the family type, Other 2 or more adults with children families.

Key Words: Medical Expenditure Panel Survey (MEPS), Household survey, Health care utilization, proxy

1. Introduction

Reported medical events for people in the Medical Expenditure Panel Survey (MEPS) reporting unit (family) are important in assessing the quality of health care received and determining family and individual health care expenditures. MEPS collects use and expenditure information for all persons in the family responding unit, by asking questions of the family respondent.

There is always concern about underreporting of medical events in household surveys such as MEPS as indicated by the number of studies analyzing the quality of health care utilization data in household surveys (Bhandari and Wagner 2006; Zuvekas and Olin 2009; Zuvekas 2011; Mercer, Ren, Machlin, Rohde, and Gonzalez 2013; Mirel and Machlin 2013, Chevarley and Davis 2015). We decided to investigate the reporting of ambulatory visits broadly defined to include office based, out-patient, and emergency department visits, rather than other types of healthcare events, because of the finding of Zuvekas and Olin of underreporting of office-based and emergency department visits (Zuvekas and Olin, 2009). Our study furthers the existing research by analyzing trends in self and proxy reporting of ambulatory events according to the relationship of the person to the respondent and family types.

1.1 Background/Data

The Medical Expenditure Panel Survey (MEPS) is a nationally representative longitudinal survey that collects detailed information on health care utilization and expenditures, health insurance, and health status, as well as on a wide variety of social, demographic, and economic characteristics for the U.S. civilian noninstitutionalized population (Cohen 1997; Westat 2013). MEPS's main sponsor is the Agency for Healthcare Research and Quality. The MEPS has three components: the Household Component; the Medical Provider Component; and the Insurance Component. The MEPS Household Component (MEPS-HC) uses an overlapping panel design in which, for each panel, data are collected covering a two-year period by a series of five in-person interviews over the course of two-and-a-half years (Ezzati-Rice, Rohde, and Greenblatt, 2008). Full year public use files are based on data for rounds 1-3 of the panel that began that year and data for rounds 3-5 of the panel that began the year before.

Figure A: MEPS –HC Overlapping Panel Design, 2013 FY Consolidated File

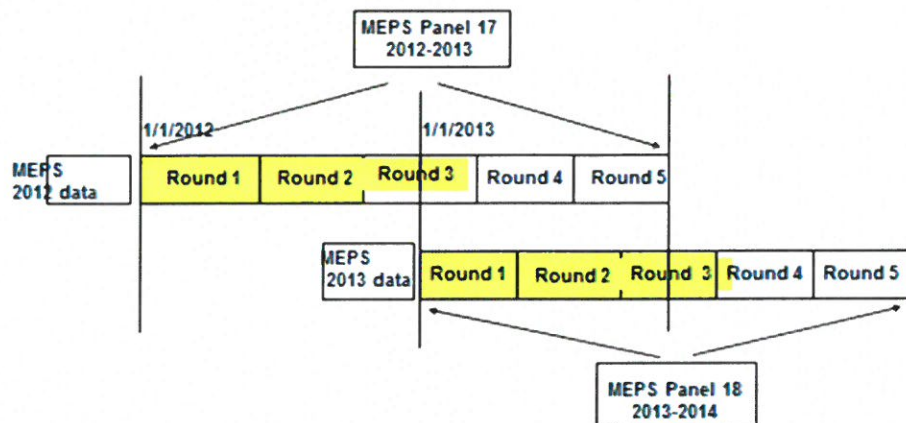


Figure A demonstrates the MEPS-HC overlapping panel design. The 2013 Full-Year file uses data from rounds 1-3 for Panel 18, the panel that began in 2013, and rounds 3-5 data for Panel 17, the panel that began in the year before (2012). In this study, the first year's data (rounds 1-3) were analyzed for each panel. For example, 2012 data was based on the first year's data from Rounds 1-3 of Panel 17, and 2013 data was based on the first year's data from Rounds 1-3 of Panel 18.

1.2 Motivation

There is always an interest to check whether medical events may be underreported by MEPS respondents for themselves or for other family members. The MEPS collects use and expenditure information for all persons in the responding unit, that is family, by asking questions of the family respondent. Other family members in addition to the family respondent may also be present at the interview and may also report information, but the survey does not collect information on who else in addition to the respondent is present in the household at the time of the interview.

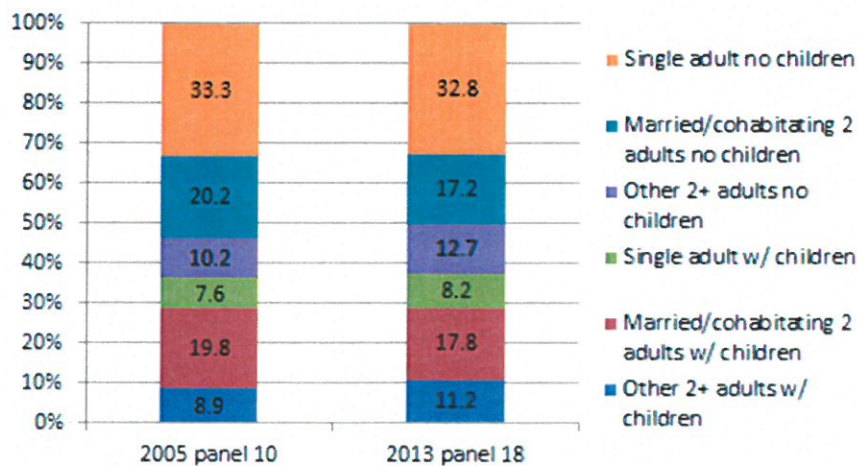
This paper focusses on the reporting by the family respondent of health care use for themselves and for other persons in the family. We want to understand medical event reporting in terms of self vs. proxy reporting and how the number of events reported by the family respondent for themselves and for others in the family changes over time by relationship of the person to the family respondent. The concern is that medical events may be underreported by the respondent according to the family member's relationship to the family responder. Trends in ambulatory medical events reported by the family respondent for themselves and for others in the family were analyzed from 2005 to 2013 in terms of the family members' relationship to the respondent for all families combined and within the different types of family.

2 Methods

MEPS utilization data were analyzed from 2005 to 2013 using the MEPS Full-Year Consolidated Files. We restricted our analyses to persons' first year of MEPS participation in order to produce utilization estimates for the entire year that would minimize the round effects in utilization data and the different reference periods across the rounds of data. That is, rounds 1-3 data in the newer of the two panels in each MEPS full year consolidated data file were analyzed: Panel 10 in 2005; Panel 11 in 2006, Panel 12 in 2007, Panel 13 in 2008, Panel 14 in 2009; Panel 15 in 2010; Panel 16 in 2011; Panel 17 in 2012; and Panel 18 in 2013. As previously discussed, Figure A indicates that the 2013 full-year file contains data for Panel 17 rounds 3-5 and for Panel 18 rounds 1-3.

The data were analyzed by the relationship of the person to the family respondent stratified by six types of families. The types of families utilized in our study are similar to the types of family breakouts used in a recent article studying disability data from the National Health Interview Survey (Altman and Blackwell, 2014). Using the full-year files and internal person-to-person relationship files, the following six types of families were determined: Single adult no children families; Married/cohabitating 2 adults no children; Other 2 or more adults no children; Single adult with children; Married/cohabitating 2 adults with children; and Other 2 or more adults with children. As indicated in Figure B, Single adult no children families made up 32.8% of all families in 2013; Married/cohabitating 2 adults no children families made up 17.2%; Other 2 or more adults no children made up 12.7%; Single adult with children made up 8.2%; Married/cohabitating 2 adults with children families made up 17.8%; and Other 2 or more adults with children made up 11.2% of MEPS families.

Figure B: Un-weighted percentage distribution by type of family/responding unit: 2005 & 2013



Source: Center for Financing, Access, and Cost Trends, AHRQ, Medical Expenditure Panel Survey-Household Component, 2005-2013

After determining the six types of families, we next created a variable specifying the person's relationship to the family respondent. The created variable indicated the following seven relationship to the family respondent categories for all family types

combined and within each of the six types of families: Self (age 18 and over); Spouse/partner (ages 18 and over); Parent of the respondent (age 18 and over); Age 18-24 son/daughter of the respondent; Age 25+ son/daughter of the respondents; Other adult (age 18 and over); and children (under age 18).

In MEPS there are six types of medical events: visits to providers seen in office-based settings or clinics; visits to both physicians and other medical providers seen in hospital outpatient departments; emergency department visits; hospital in-patient discharges; prescriptions medicines; and home health visits. We focused on percent with and average number of ambulatory visits in the calendar year. Ambulatory visits are defined broadly to include office-based visits, outpatient visits, emergency department visits, and zero-night stay hospital visits.

Our estimates are weighted by panel-specific person-level weights because we use only one panel for the estimates for each year. Our estimates were produced using SAS/STAT which incorporates MEPS complex sample design and uses a Taylor series linearization for variance estimation. Differences noted were statistically significant at the 0.05 level.

Our estimates use the newer panel from each year's full-year consolidated file. For example, for the 2013 full-year file that has data for 36,940 persons, we started with 18,092 persons from panel 18, the newer of the two panels in the file. Because our estimates are according to the relationship to the respondent categories, we excluded from our analyses those persons: whose family respondent changes in rounds 1-3; persons that are in a student family unit in any of rounds 1-3; persons not in all of rounds 1-3; and persons in families in which the variables indicating whether or not the respondent is in the family or outside the family are inconsistent. Of the 18,092 persons in panel 18, 14,205 persons (or 78.5%) satisfy the conditions listed above. We further restricted our sample for figures 1a and 1b to those persons with positive panel-specific weights and whose relationship to the respondent does not change in rounds 1-3. This reduces our 2013 sample to 13,967 persons or 77.2% of the 18,092 panel 18 persons. Because Figures 2a-7a and 2b-7b produce estimates stratified by family type; we additionally restricted our sample for figures 2a-7a and 2b-7b to those persons whose family type does not change in rounds 1-3. For the 2013 file, this reduces our sample to 13,058 persons, or 72.2% of all 18,092 panel 18 persons on the 2013 full-year consolidated data file.

3. Analysis

In order to understand the reporting of trends in utilization in terms of self vs. proxy reporting, trends in ambulatory events were analyzed from 2005 to 2013 by relationship of the person to family respondent and how they may differ by type of relationship within each of the types of family units. We are interested in identifying subcategories where utilization has significantly changed from 2005 to 2013.

For our study, 2005-2013 trends in percent with any ambulatory visit in the calendar year were investigated by relationship of the person to the family respondent for all types of families combined and within each of the six types of families. Trends in average number of ambulatory visits in the calendar year were also analyzed by relationship of the person to the family respondent for all types of families combined and within each of the six types of families.

3.1 All types of families combined

In Figures 1a and 1b, trends in percent with any ambulatory visit and average number of visits were analyzed in all types of families combined by the person's relationship to the family respondent. Since there was not a statistically significant difference from 2005 to 2013 in percent with any ambulatory visit and average number of visits for Children, the trend line for Children were removed to simplify Figures 1a and 1b.

In all types of families combined, the percent with any ambulatory visits decreased from 2005 to 2013 for Parent of the respondent, while it increased for Age 18-24 son/daughter of the respondent.

In all types of families combined, the average number of ambulatory visits decreased from 2005 to 2013 for Parent of the respondent. None of the other changes from 2005 to 2013 in either the percent with ambulatory visits or the average number of ambulatory visits by type of relationship to the respondent category were statistically significant.

3.2 Single adult no children families

Single adult no children families made up 32.8 percent of all family types in 2013. In Figures 2a and 2b, trends in percent with any ambulatory visit and average number of visits were analyzed for Self, the only relationship to the respondent category for these families.

There is no significant change in percent with ambulatory visits or in the average number of ambulatory visits from 2005 to 2013 for the Self category.

3.3 Married/cohabitating 2 adults no children families

Married/cohabitating 2 adults no children families made up 17.2 percent of all families in 2013. In Figures 3a and 3b, trends from 2005 to 2013 in percent with any ambulatory visit and average number of visits were analyzed for these families by the person's relationship to the family respondent.

The percent with any ambulatory visits and the average number of ambulatory visits did not change significantly from 2005 to 2013 for Self nor for Spouse/partner, the only relationship to the family respondent categories.

3.4 Other 2 or more adults no children families

The Other 2 or more adults no children families made up 13.7 percent of all families in 2013. In Figures 4a and 4b, trends in percent with any ambulatory visit and average number of visits were analyzed for these families by the person's relationship to the family respondent.

From 2005 to 2013, the percent with any ambulatory visits and the average number of ambulatory visits did not change significantly in these families for any of the types of relationship to the respondent categories: Self; Spouse/partner; Parent of the respondent; Age 18-24 son/daughter of the respondent; Age 25+ son/daughter of the respondent; or Other adult.

3.5 Single adult with children families

The Single adult with children families made up 8.2 percent of all families in 2013. In Figures 5a and 5b, trends in percent with any ambulatory visit and average number of

visits were analyzed for Single adult with children families by the person's relationship to the family respondent.

In these families, the percent with any ambulatory visits and the average number of ambulatory visits did not change significantly from 2005 to 2013 for the Self, nor for the Children categories.

3.6 Married/cohabitating 2 adults with children families

The Married/cohabitating 2 adults with children families made up 17.8 percent of all families in 2013. In Figures 6a and 6b, trends in percent with any ambulatory visit and average number of visits were analyzed for Married/cohabitating 2 adults with children families by the person's relationship to the family respondent.

None of the changes from 2005 to 2013 in the percent with any ambulatory visits or in the average number of ambulatory visits in this type of family were significant for any of the relationship to the respondent categories; Self; Spouse/partner; nor for Children.

3.7 Other 2 or more adults with children families

Other 2 or more adults with children families, account for 11.2 percent of all families in 2013. In Figures 7a and 7b, trends in percent with any ambulatory visit and average number of visits were analyzed for this type of family by the person's relationship to the family respondent. Since there was not a statistically significant difference from 2005 to 2013 in percent with any ambulatory visit and average number of visits for Children, the trend lines for Children were removed to simplify Figures 7a and 7b.

For these families, the percent with any ambulatory visits increased from 2005 to 2013 for Age 18-24 son/daughter of the respondent.

In these families, the average number of visits decreased from 2005 to 2013 for Parent of the respondent.

None of the other changes from 2005 to 2013 in percent with any ambulatory visits or in the average number of visits by type of relationship to the respondent were statistically significant.

4. Summary

This research showed few significant differences in trends from 2005 to 2015 in ambulatory events reported by the family respondent for themselves compared to trends of events reported by the family respondent for others in the family. None of the major relationship categories (Self, Spouse/partner, and Children) had significant changes in either percent with or average number of ambulatory visits from 2005 to 2013 for all family types combined nor within any of the six types of families. We saw some differences for the small groups of Parent of the respondent (about 2% of the 2013 sample) and age 18-24 son/daughter of the respondent (about 5% of the 2013 sample).

The percent with any ambulatory visit decreased from 2005 to 2013 for Parent of the respondent in all types of families combined (Figure 1a). The percent with any ambulatory visit increased for Age 18-24 son/daughter of the respondent in all types of families combined and in Other 2 or more adults with children families (Figures 1a and

7a). This increase for Age 18-24 son/daughter of the respondent is consistent with the 2010 implementation of the Patient Protection Affordable Care Act (PPACA). This new law allows 18-26 year old children to be covered under their parent's Health Insurance coverage.

When trends in average number of ambulatory visits from 2005 to 2013 were analyzed, there was a decrease for Parent of the respondent in all types of families combined and in Other 2 or more adults with children families (Figures 1b and 7b).

Our results may warrant further analysis for those types of families that include parents of the respondent to ensure that healthcare events for parents of the respondent in these types of families are accurately reported. Note that in 2013, Other 2 or more adults with no children represented 13 percent of families and Other 2 or more adults with children represented 11 percent of families. Our results may inform interviewer monitoring and training procedures to ensure that healthcare events for parents of the respondent are not being underreported in these types of families.

4.1 Future work

This paper focused on analyzing ambulatory visits according to the relationship of the person to the respondent and family type. In the future we may also want to evaluate the reporting of other types of healthcare events such as prescription medicines or in-patient hospital stays. There were adequate sample sizes for most of our analyses. But for a few small relationship to the respondent categories such as Parent of the respondent, combining 2-years of data may be helpful in detecting significant changes.

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Figure 1a. Trends from 2005 to 2013 in percent with any ambulatory visits for the first year of each panel, all families combined (2013 sample sizes)

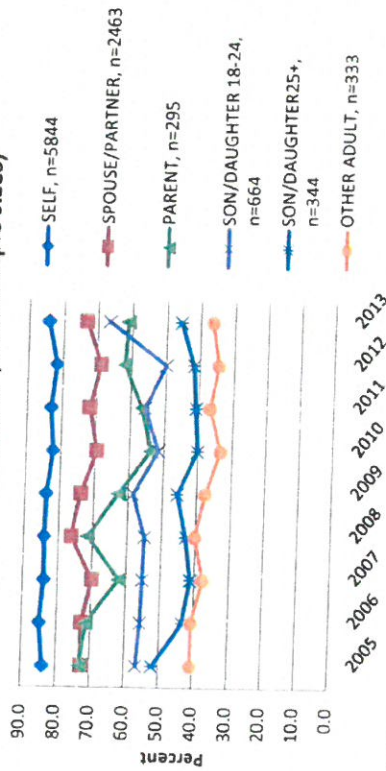


Figure 1b. Trends from 2005 to 2013 in average number of ambulatory visits for the first year of each panel, all families combined (2013 sample sizes)

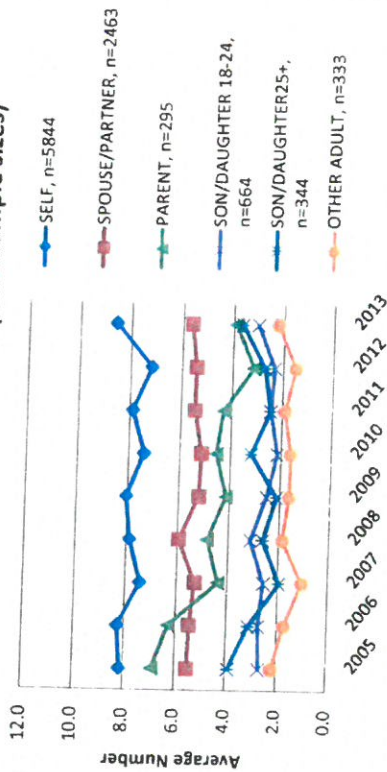


Figure 2a. Trends from 2005 to 2013 in percent with any ambulatory visits for the first year of each panel, single adult no children families (2013 sample sizes)

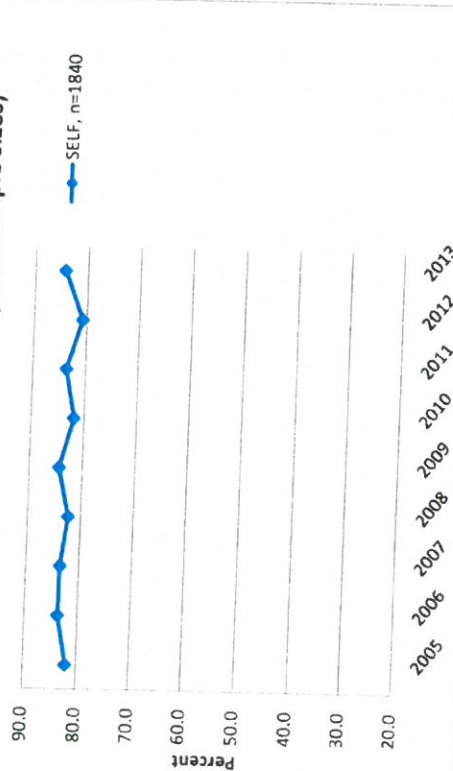


Figure 2b. Trends from 2005 to 2013 in average number of ambulatory visits for the first year of each panel, single adult no children families (2013 sample sizes)

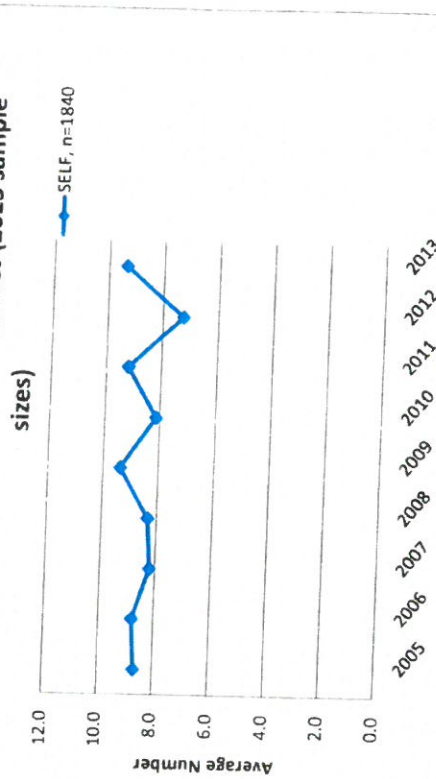


Figure 3a: Trends from 2005 to 2013 in percent with any ambulatory visits for the first year of each panel, for married/cohabitating 2 adults no children families, (2013 sample sizes)

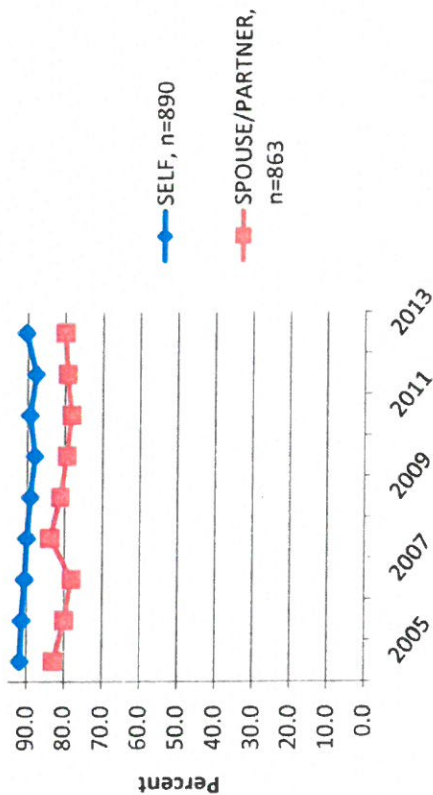


Figure 3b: Trends from 2005 to 2013 in average number of ambulatory visits for the first year of each panel, for married/cohabitating 2 adults no children families, (2013 sample sizes)

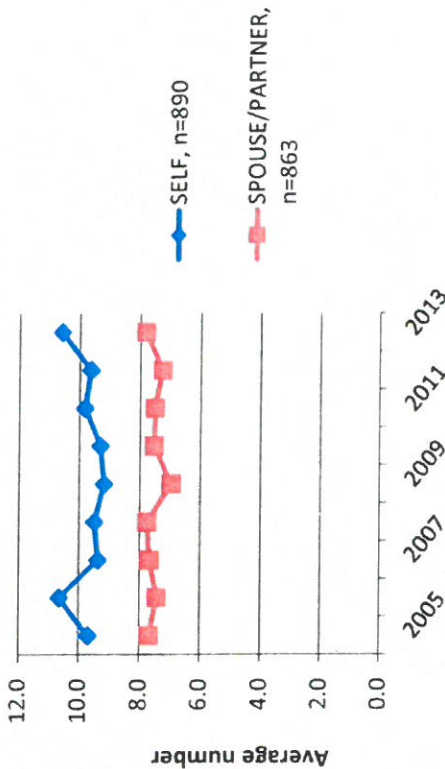


Figure 4a: Trends from 2005 to 2013 in percent with ambulatory visits for the first year of each panel, other 2+ adults no children families, (2013 sample sizes)

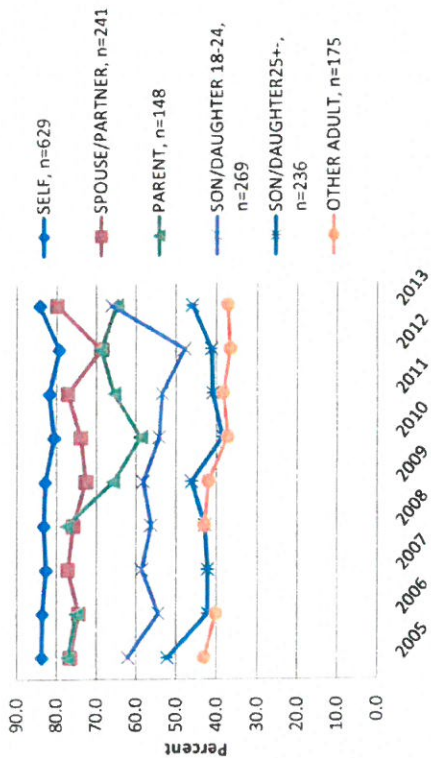


Figure 4b: Trends from 2005 to 2013 in average number of ambulatory visits per year for the first year of each panel, other 2+ adults no children families, (2013 sample sizes)

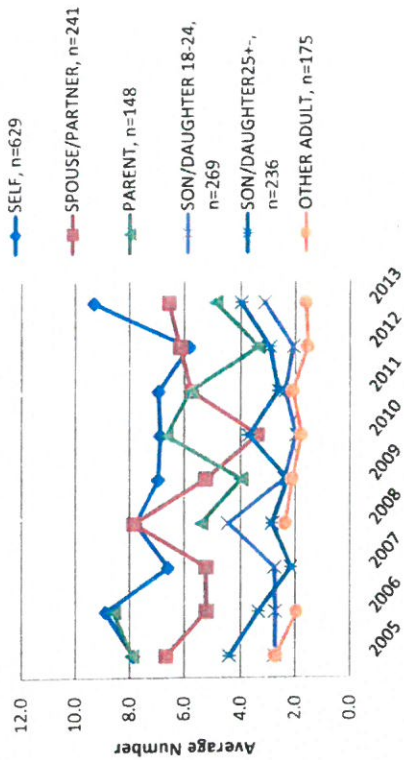


Figure 5a. Trends from 2005 to 2013 in percent with ambulatory visits for the first year of each panel, for single adult with children families, (2013 sample sizes)

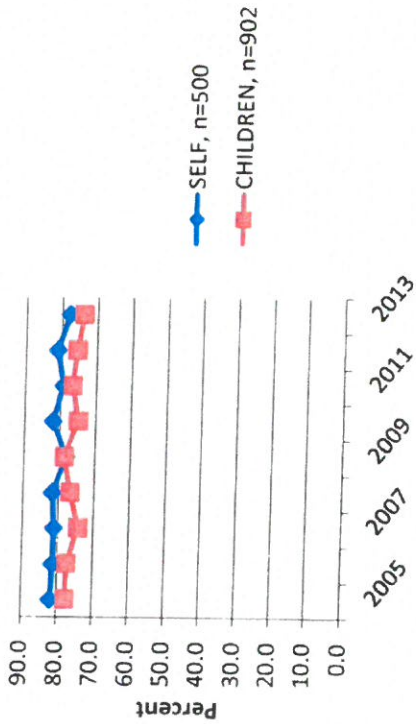


Figure 5b. Trends from 2005 to 2013 in average number of ambulatory visits for the first year of each panel, for single adult with children families, (2013 sample sizes)

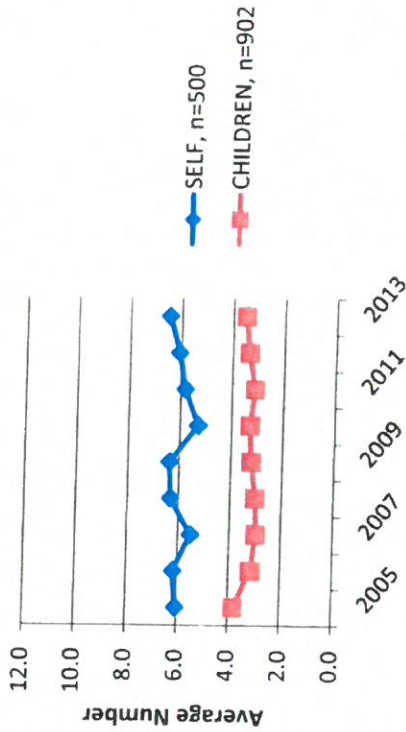


Figure 6a. Trends from 2005 to 2013 in percent with any ambulatory visits for the first year of each panel, married/cohabitating 2 adults with children families, (2013 sample sizes)

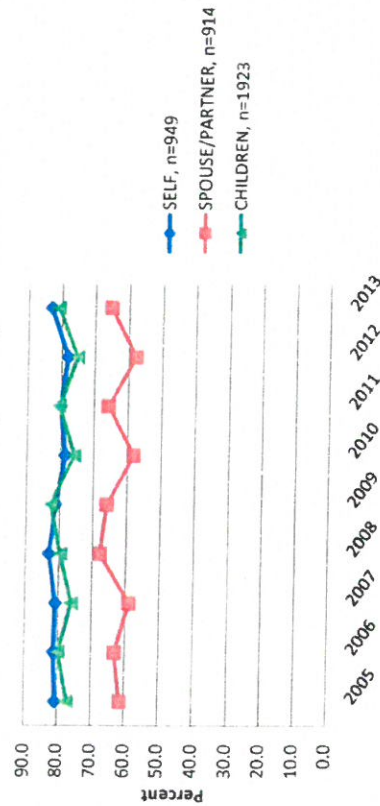


Figure 6b. Trends in average number of ambulatory visits for the first year of each panel, married/cohabitating 2 adults with children families, (2013 sample sizes)

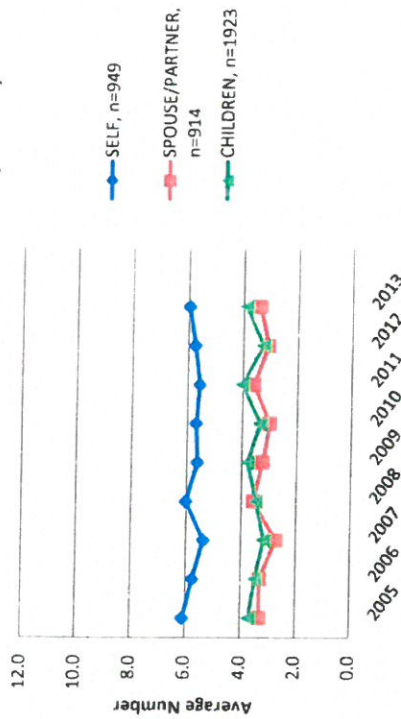


Figure 7a. Trends from 2005 to 2013 in percent with any ambulatory visits for the first year of each panel, other 2+ adults with children families, (2013 sample sizes)

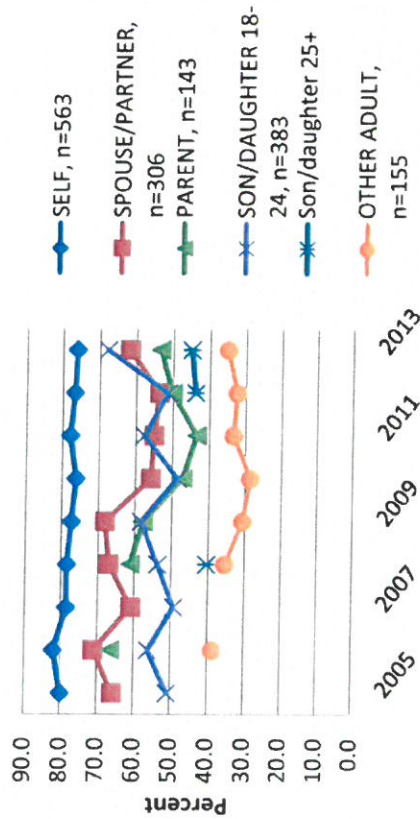


Figure 7b. Trends from 2005 to 2013 in average number of ambulatory visits for the first year of each panel, other 2+ adults with children families, (2013 sample sizes)

