Characteristics of Individuals and Employment Among First Responders

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EXECUTIVE SUMMARY

First responders are employed in critical occupations that help to promote and ensure the safety, health and protection of individuals and communities. Their daily responsibilities may involve managing crisis situations or working in dangerous or unstable environments. This report describes a cluster of first responder occupations, with particular emphasis on trends and patterns in employment, the characteristics of the individuals who do these jobs, the nature of their work, and adverse experiences they may face as a result of their potentially hazardous work.

The report was prepared to provide general, national level, background statistical information on workers in three occupational categories: police, firefighters, and emergency medical technicians (EMTs).[1] The material in this report is presented in several sequential sections, with each section relying on a distinct kind of data to describe an important aspect of first responders: personal characteristics, employment patterns, compensation, occupational outlook, and work related injuries, illnesses and fatalities.

Characteristics of the Workforce

The report describes the characteristics of career first responders based on the Current Population Survey.

- The majority of the more than 1.2 million workers in these three occupational categories are White, male, and 25 to 54 years old.
    - 3 out of 4 EMTs and paramedics are men.
    - 7 out of 8 police officers are men.
    - 19 out of 20 firefighters are men.
- The racial and ethnic diversity in this workforce varies by occupation.
    - Blacks or African Americans represent a higher proportion of police officers than their proportion in the overall employed population, but are underrepresented among firefighters and EMTs.
    - Hispanics as a proportion of first responders represent a lower share than their proportion of the overall employed.
- These categories of first responders generally have higher levels of post high school education than the total employed, and fewer have not completed high school.

[1] Volunteers are important in this sector, but the report focuses on career first responders because official employment surveys do not include volunteers.

Earnings

The report analyzes data from the Current Population Survey and Occupational Employment Statistics to describe the trends and patterns in employment and wages for career first responders.

- Police and firefighters tend to have higher earnings than the overall working. population, but it is important to note that across all categories of first responders, they also tend to work more hours.
- Although there are considerably more male first responders than female, the gap between male and female earnings among police and EMTs is much smaller than is typically seen in the labor force as a whole.

Employment Trends

- There are substantially more police than firefighters or EMTs. Between 2000 and 2013, each year the level of employment among police officers has been consistently more than twice that of firefighters, and nearly three times that of EMTs.
- EMT employment has been growing faster than police or firefighters. Employment levels for EMTs have been growing approximately four times as fast as police and firefighters, both of which have had nearly the same growth rate from 2000 to 2013.
- Employment levels for EMTs have not shown declines in any year since 2010, which is not true for police and firefighters.

Projected Future Employment

- Between 2012 and 2022, the Bureau of Labor Statistics (BLS) projects that firefighter and police occupations are likely to grow by 6.6% and 5.9% respectively, a rate somewhat slower than for all occupations (where the rate is about 11%).
- EMTs and paramedics are expected to see a much higher increase in employment between 2012 and 2022 at 23.1%. However the projected growth for EMTs and paramedics in local government is much lower at 6.8%.

Workplace Safety and Health

Finally, it is an unfortunate reality that first responder work is dangerous, and can lead to injury. This report uses occupational safety and health statistics that are compiled in two documents from the Bureau of Labor Statistics: Nonfatal Occupational Injuries and Illnesses Requiring Days Away From Work and the Census of Fatal Occupational Injuries.

- Police and firefighters have much higher occurrences of injuries, and resulting days away from work, than most other occupations.
- Compared to other workers, first responders are more likely to have injuries related to physical over-exertion, transportation incidents, and violent situations, and their work-related fatality rate is higher.

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I. Introduction

First responders are employed in critical occupations that help to promote and ensure the safety, health and protection of individuals and communities. The jobs of first responders may involve dealing with crisis situations or working in dangerous or unstable environments. Categories of occupations usually considered to be first responders include firefighters, emergency medical technicians (EMTs) and paramedics. Police are also an important category of first responders but the occupations that make up this category are diverse and can include occupations as varied as police officers, sheriff's patrol officers, detectives and criminal investigators, transit and railroad police, and fish and game wardens.[2]

This paper describes the individuals who do these jobs, aspects of their work as first responders, and adverse experiences they may face as a result of potentially dangerous work. The material presented in this report is divided up into several sections. Each section uses a distinct kind of data to examine an important aspect of the jobs that first responders do. Examining of all of the different data, and the relationships among them, provides a detailed view of how the jobs of first responders compare to each other, as well as their similarities and differences with the patterns found in the working population as a whole.

The first section presents characteristics and demographics of first responders, using data from the Current Population Survey (CPS). The second section summarizes the annual and hourly earnings of first responders as well as the overall working population. Included are some trends in earnings over the last two economic cycles. The third section looks at accident and injury rates, as well as some of the consequences such as days lost from work. The fourth section contains a brief economic outlook for the expected growth in particular occupations.

These are descriptive statistics and are not intended to make inferences about the diversity of the occupations nor used to evaluate the workforce or employment practices of particular departments.

[2] The occupational codes used to define firefighters and EMTs are standardized throughout this report. Firefighters are defined by the Standard Occupational Classification (SOC) code assignment 33-2011 and EMTs and paramedics are defined by SOC code assignment 29-2041. Police (and sheriff's patrol officers) are defined by SOC code assignment 33-3051. Some statistics describing protective service may also include: Detectives and Criminal Investigators (33-3021), Fish and game wardens (33-3031), and Transit and railroad police (33-3052). See technical appendix on how first responders were identified.

II. Characteristics of First Responders

This section describes basic individual characteristics for career first responders such as age, gender, race, education and Veteran's status. The individuals described in this section are identified primarily by their having worked predominantly as a first responder in the recent past. The statistics presented in this section do not include individuals who volunteer their services to perform first responder duties, since they are not reported in the Federal data sources.[3]

Sources of Data to Describe the Characteristics of First Responders

The data to describe the characteristics and demographics of first responders and total employed comes from the Current Population Survey (CPS) of the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. About 60,000 households are surveyed each month. The individuals eligible for the CPS are the civilian non-institutional population residing in the United States and those armed forces members living with civilians either on or off base within these households. The CPS provides data on characteristics such as age, sex, and educational attainment that are collected along with economic data on earnings and occupation. The 2014 annual averages presented in this section are compiled from the monthly data.

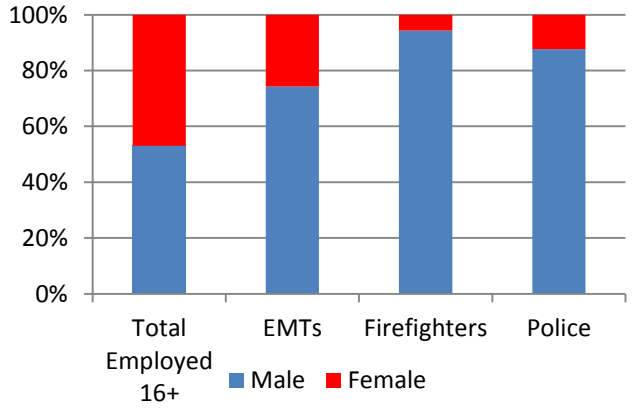
An important and challenging aspect to describing the first responder population is finding a way to capture comparable data on volunteers and those who are paid. While these are both vital parts of the first responder community, considerably more data are collected around wages and employment, and considerably less around volunteering and organizational support. This section focuses on formally employed paid workers only, using data from the CPS presenting common elements as a basis to compare and contrast individual characteristics among career first responders, as well as, the total employed in 2014.

[3] The descriptions in this report include individuals who are paid workers. Volunteers, particularly among firefighters, represent an important part of the first responder population, but the Federal surveys on employment do not report volunteers. Some estimates suggest that over two-thirds of firefighters in the United States are volunteers. See, for example, Hylton J.G. Haynes and Gary P. Stein, U.S. Fire Department Profile 2013, National Fire Protection Association, Fire Analysis and Research Division (Quincy MA 2014).

Characteristics and Demographics of Career First Responders

The data in this section is provided for descriptive purposes and were not tested for statistically significant differences.

Figure 1. Gender Distribution of First Responders



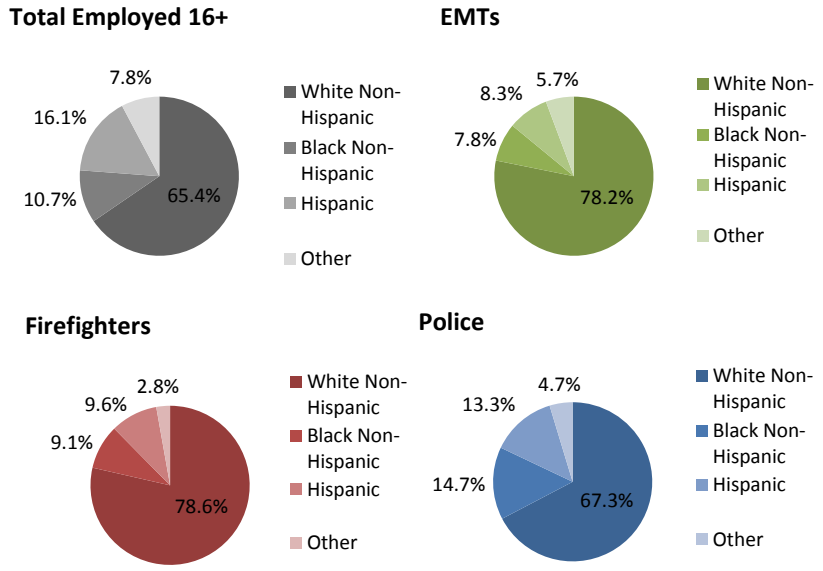
Source: Current Population Survey, Annual Averages 2014

Figure 1 presents the gender composition of broad career first responder groups including EMTs, firefighters, and police. The graph also shows the gender composition for the total employed 16 years of age and older as a point of comparison. While the proportion of males and females in the population is roughly equal, first responder occupations are comprised of significantly higher proportions of males. Approximately three out of four EMTs and paramedics are male and seven out of every eight police officers are male. Firefighters have the highest proportion of males, where almost 19 out of 20 are male.

Figure 2 provides data for career first responders by race and Hispanic origin, and for the total employed.[4] First, Whites constitute the majority of first responders. In general, Whites are overrepresented in the three first responder categories, particularly for firefighters and EMTs, and other groups are underrepresented. Second, Blacks are employed as police officers at levels that exceed their share of the working population (14.7% compared to 10.7%), but Blacks are underrepresented among EMTs (7.8% compared to 10.7% of the total employed). The proportion of Hispanics for all of the first responder occupations is below the proportion of Hispanics in the total employed.

[4] The race/ethnicity categories in this report are defined as White (White alone non-Hispanic), Black (Black alone non-Hispanic), Hispanic (any race) and Other.

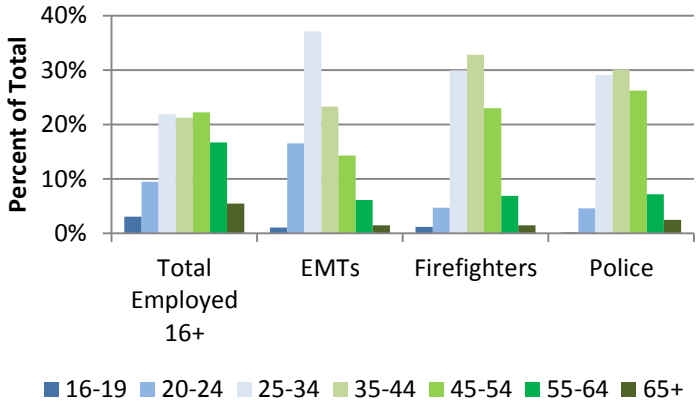
Figure 2. Race/Ethnicity of First Responders



Source: Current Population Survey, Annual Averages 2014

There is also a very clear age pattern, illustrated below in Figure 3, which shows that first responders tend to have higher proportions of employed individuals within younger age ranges, and lower proportions of working individuals among older age ranges the total employed. This pattern is consistent across the first responder occupations. There is a notable decline in the share of those employed as first responders in the older age ranges, beginning between ages 45 and 55. The total employed has roughly equal proportions in the age brackets from 25 to 54. In contrast, all of the first responder occupations show lower percentages beginning with the 45-54 year old age ranges, and the shares of employment among first responders, aged 55 and older, drop dramatically. This decrease is also seen among the total employed, however, not to the same degree.

Figure 3. Age Distribution of First Responders

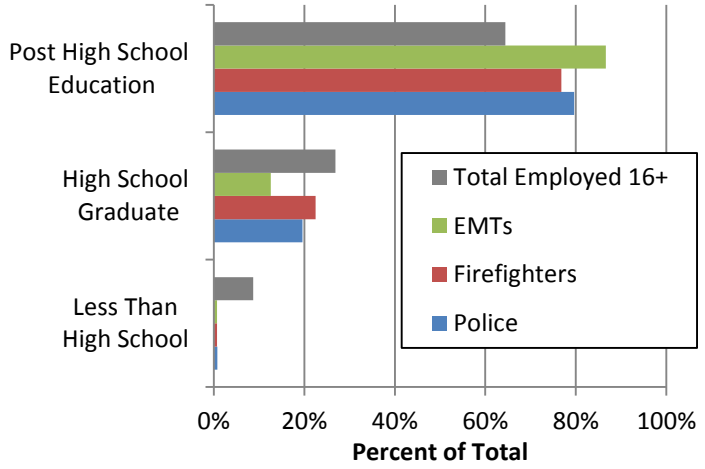


Source: Current Population Survey, Annual Averages 2014

EMTs have the highest share of employment in the 25-34 age bracket; following that, there is a steady drop over the next three age groups. Firefighters have their peak share of employment

in the 35-44 year age group, followed by a steady drop in the percentage of individuals employed in the next two age groups. For police, the highest share of employment is in the 35-44 age range, followed by moderate reductions in the share of employment in the 45-54 and then a large decline in the share of employment starting with age 55.

Figure 4. Educational Attainment of First Responders

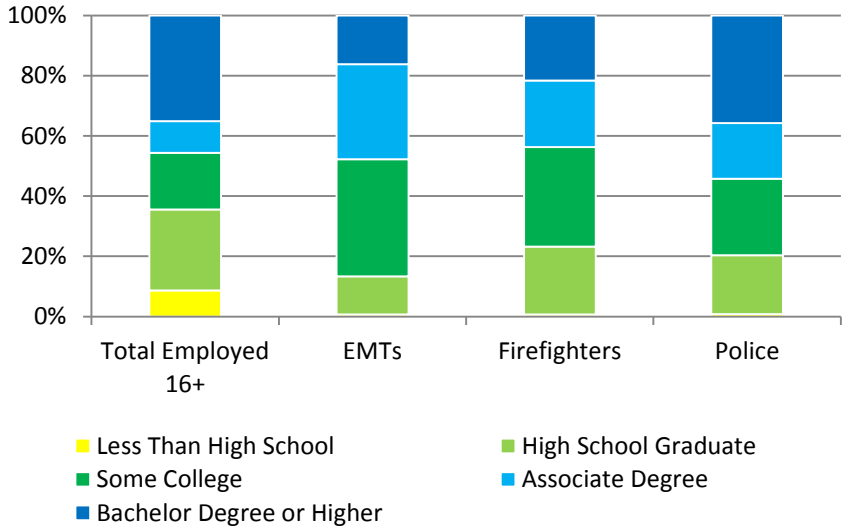


Source: Current Population Survey, Annual Averages 2014

Figure 4 shows that all three types of first responders also have fairly high levels of educational attainment. The percentage of career first responders without a high school degree is quite small, and considerably lower than for the total employed. In addition, career first responders consist of a higher proportion of individuals with post-secondary education, and EMTs have the highest proportion of individuals with post-secondary education.

In Figure 5, EMTs and Firefighters have a lower proportion of bachelor's degrees with 16.2% and 21.6% respectively, compared to the working population. Police officers have the highest proportion of individuals having a bachelor degree or higher (35.7%) among the first responder occupations and the total employed.

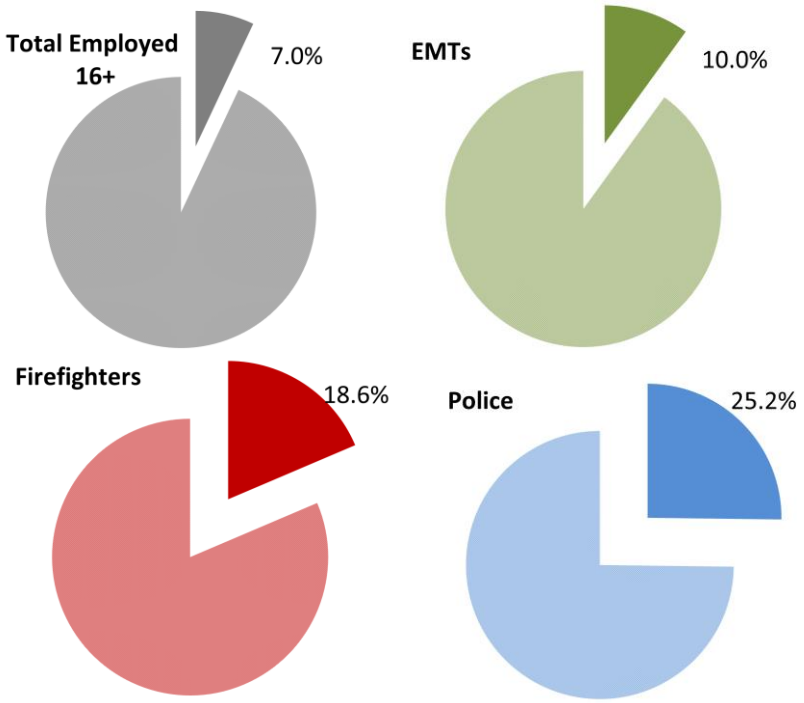
Figure 5. Higher Educational Attainment of First Responders



Source: Current Population Survey, Annual Averages 2014

Finally, Figure 6 shows the percentage of first responders who are Veterans.[5] As a benchmark, approximately 7% of the total employed have served in the U.S. Armed Forces on active duty. All of the first responder categories have higher shares of Veterans than the total employed. Police have the highest share of Veteran employment among the three groups at 25.2%.

Figure 6. Veteran Status of First Responders



Source: Current Population Survey, Annual Averages 2014

[5] Respondents for the CPS aged 17 and older, are asked if they have ever served on active duty in the armed forces. This question is used in determining Veteran status. There are a small number of individuals that were not asked this question.

III. Earnings, Hours, and Employment Patterns of First Responders

Estimates for earnings, hours usually worked in a week, and employment levels for first responders and the working population are presented using the most recent available data. In addition, trends in hours worked, employment levels and annual and hourly earnings are presented for years spanning the last two economic cycles, from 2000 to 2013.

Sources of Data on Earnings, Hours, and Employment

The most complete source of publicly available data to describe the characteristics and demographics, as well as the annual income, of first responders comes from the 2014 Annual Social and Economic (ASEC) supplement of the Current Population Survey (CPS) of the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. The ASEC sample includes the regular CPS March sample of 72,500 households, a quarter of the February and April samples not in the March sample, and an additional Hispanic sample of 6,500, for approximately 98,000 households. The individuals eligible for the ASEC supplement are the civilian non-institutional population residing in the United States and those armed forces members living with civilians either on or off base within these households. The ASEC provides data on characteristics such as age, sex, and educational attainment that are collected along with economic data on income, occupation, and hours worked per week. Data on earnings from the longest job held and number of hours usually worked during a week in 2013 for career first responders, the working population 16+, and non-first responders comes from the 2014 Annual Social and Economic (ASEC) Supplement of the CPS. Information on demographics refers to the time the survey was collected while data on employment and income refer to the preceding year.[6]

Data from the Occupational Employment Statistics (OES)[7] program, produced by the Bureau of Labor Statistics are used to expand on the recent annual data provided by the ASEC, and to present trends in estimated employment levels, as well as estimates of hourly wages for select first responder occupations over time.[8] The OES program produces employment and wage

[6] For the purposes of this section, data are averaged across individuals. Two EMT observations were excluded from the average earnings information presented in Figures 7 and 8 due to extreme earnings values. See the Technical Appendix for more information.

[7] General background information and specific methods and techniques used by OES program can be found at http://www.bls.gov/oes/.Tables showing the data presented in this report can be found at http://www.bls.gov/oes/tables.htm.

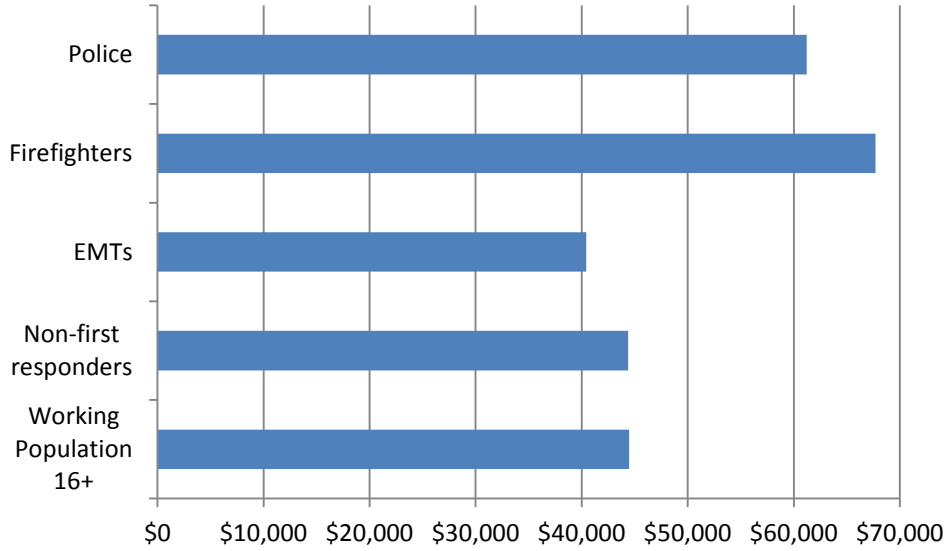
[8] Challenges in using OES data as a time series include changes in the occupational, industrial, and geographical classification systems, changes in the way data are collected, changes in the survey reference period, and changes in mean wage estimation methodology, as well as permanent features of the methodology. The data are presented here only to provide the user with a general sense of the data available to describe recent trends and patterns in wages and employment over the last two economic cycles.

estimates annually for over 800 occupations, for the nation as a whole, and for geographic areas such as individual States, metropolitan areas and nonmetropolitan areas.

Average Earnings in Longest Job Held for 2013

As can be seen in Figure 7, average earnings in 2013 for career firefighters and police are higher than the averages for those employed and higher than for EMTs. Firefighters have the highest average earnings ($67,696) followed by police ($61,211). The average earnings for EMTs are approximately equal to the working population ($44,371 compared to $40,433). It is important to note that the general population and the non-first responder populations only differ by first responder employment and as a result, differences between these two groups are marginal throughout this section.

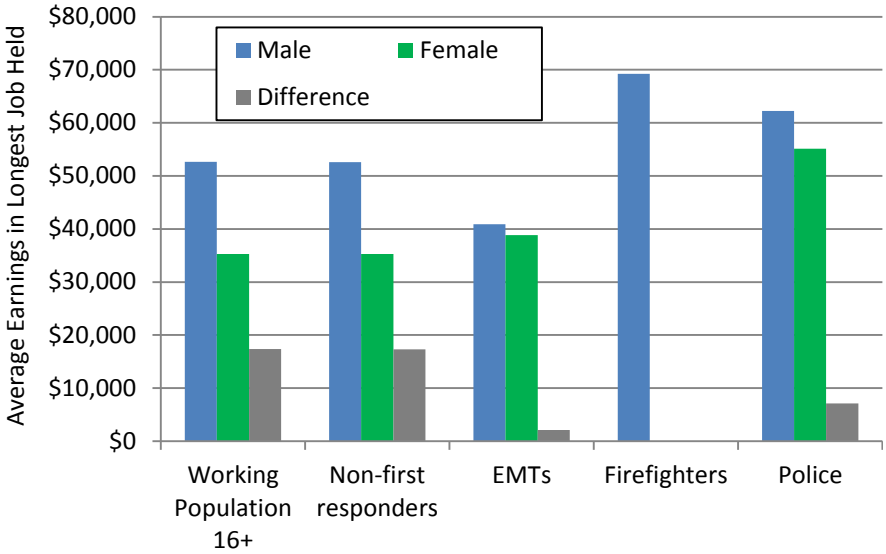
Figure 7. Average Earnings in Longest Job Held, Select Occupations: 2013



Source: CPS, 2014 Annual Social and Economic Supplement

Figure 8 presents average earnings in 2013, by gender, for first responders, non-first responders, and the working population.[9] In general, both male and female first responders have higher average earnings than non-first responders and the working population 16+ of the same gender, with the exception of male EMTs. The gender gap in earnings is also smaller for EMTs and police than in the overall working population.

Figure 8. Average Earnings in Longest Job Held, by Gender: 2013



Source: CPS, 2014 Annual Social and Economic Supplement

Average Usual Weekly Hours Worked in 2013

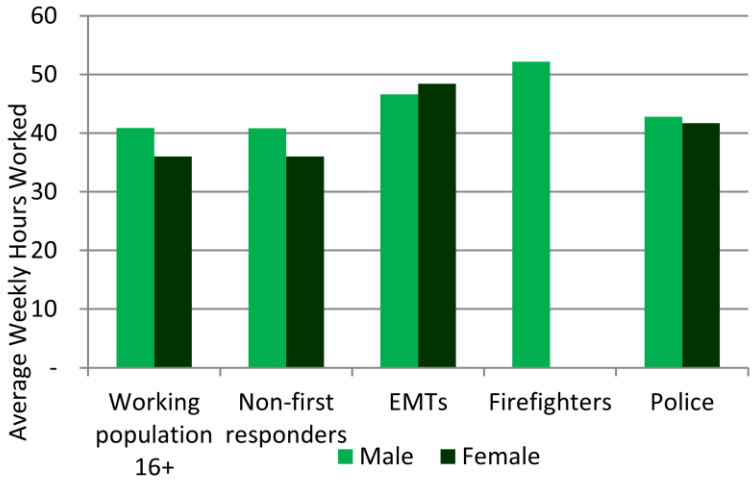
As with earnings, the number of hours worked is an important component in characterizing the employment situation of people working in any occupation.[10] Figure 9 shows the average of usual weekly hours in 2013, on a weekly basis for the working population 16+, first responders, and non-first responders, by gender.[11]

First responders worked more hours per week than non-first responders across the board. This relationship holds for both men and women. Male firefighters work the most hours per week among the first responder groups. In both the working population 16+ and non-first responder groups, women worked nearly five fewer hours per week than did men. Among EMTs, women worked nearly two more hours per week than men. For police men worked approximately one

[9] Average earnings in the longest job held are not shown where there is a base estimate of less than 50,000 people.
[10] The hours reported could include multiple jobs and may not be attributable solely to the occupation of the longest job held.
[11] Average usual weekly hours worked are not shown where there is a base estimate of less than 50,000 people.

hour more per week than women. The similarity in hours per week by gender represents a clear contrast from the patterns seen among the working population.

Figure 9. Average Usual Weekly Hours Worked, by Gender: 2013



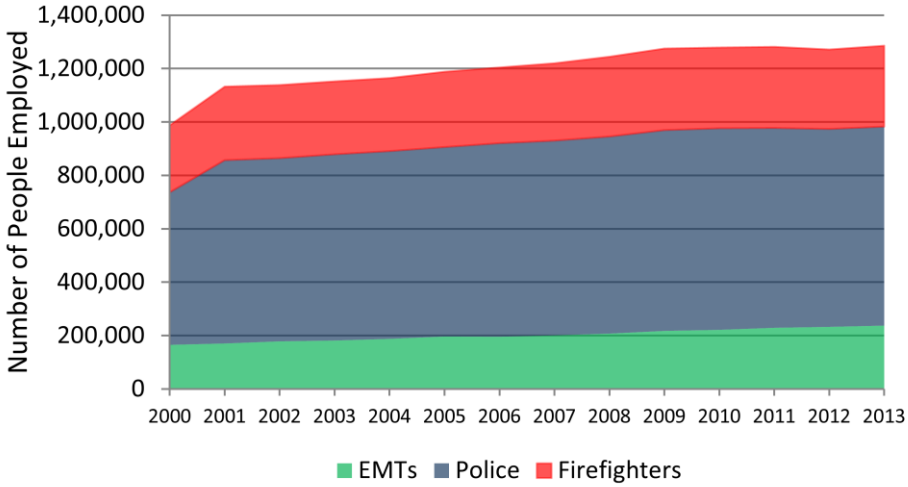
Source: CPS, 2014 Annual Social and Economic Supplement

Trends in Employment and Hourly Wages

The data and charts presented below show trends in employment levels and hourly wages for first responder occupational groups over the last two economic cycles (2000 – 2013).

Figure 10 shows the aggregate levels of first responder employment, by occupational group, from 2000 – 2013. Police have constituted the largest share of first responder employment throughout this period. The level of employment among police officers is more than twice that of firefighters, and nearly three times that of EMTs. However, employment levels for EMTs have been growing approximately four times as fast as police and firefighters,

Figure 10. Employment Levels, First Responders: 2000 – 2013

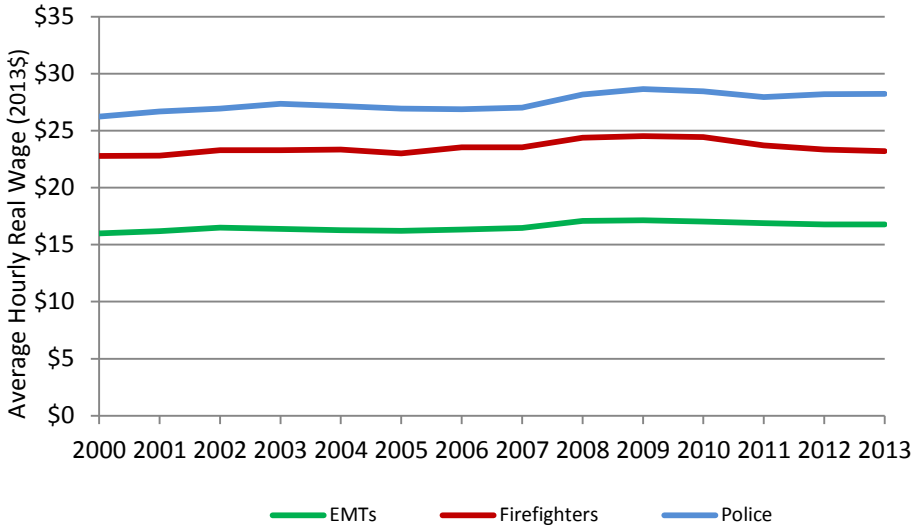


Source: BLS, Occupational Employment Statistics

which have had nearly the same growth rate from 2000 to present. Employment levels for EMTs have not shown declines since 2010, which is not true for police and firefighters.

Figure 11 presents the average hourly real wages for first responders from 2000 to 2013.[12] Police have the highest average hourly real wage over the entire period and have experienced the most real wage growth. The growth in hourly wages on Figure 11 shows that between 2000 and 2013, average hourly real wages increased approximately 7.6% for police officers, 4.9% for EMTs and 1.9% for firefighters. Firefighters have the second highest average hourly wage, and EMTs have the lowest. Since 2009, growth in the average hourly real wage has been negative for EMTs and firefighters.

Figure 11. Average Hourly Wages, First Responders: 2000 – 2013



Source: BLS, Occupational Employment Statistics

[12] Nominal average hourly wages were put in 2013 dollars using the seasonally adjusted CPI-U for all items (December).

IV. The Impact of Occupationally Related Injury, Illness and Fatalities on First Responders

Statistics compiled to assess workplace safety show that the work of first responders is dangerous. Work related incidents that cause injury or illness occur at much higher rates for first responders than for workers in most other occupations. This section describes occupational hazards associated with first responder work, the trends and patterns, and comparisons among first responder groups and other occupational categories.

The primary data sources for this section are the Survey of Occupational Injuries and Illnesses (SOII) and the Census of Fatal Occupational Injuries (CFOI), conducted by the Bureau of Labor Statistics.[13]

The SOII is the largest survey of occupational injuries and illnesses in the country, capturing data from records of workplace injuries and illnesses that employers are required to keep under the Occupational Safety and Health Act of 1970. The SOII provides injury and illness counts and rates for a variety of employer, employee, and case characteristics based on a sample of over 230,000 establishments. Figures are calculated nationally and for 44 participating states and territories (including DC), allowing for detailed analyses of the magnitude, patterns, and trends in occupational injuries and illnesses. The estimates cover nearly all private-sector industries under the jurisdiction of the Occupational Safety and Health Administration (OSHA), as well as State and local government.

The CFOI is a Federal-State cooperative program that has been implemented in all 50 States (and DC) since 1992. The census uses multiple sources to identify, verify, and profile fatal worker injuries. Information is obtained by cross-referencing the source records, such as death certificates, workers' compensation reports, and Federal and State agency administrative reports. The CFOI data does include volunteers.

It is important to note that the majority of first responders are employed by local and State governments, and the Federal OSHA program does not have jurisdiction over, or detailed inspection data for, the large majority of establishments that would house or employ first responders. It is also important to note that many of these data sources treat workplace injuries in an epidemiological manner, looking not just at the number of incidents that occur, but at the rate of incidence. The rate of incidence is computed as an annualized number of injuries and/or illnesses per ten thousand full-time workers, so the incidence rate offers a

[13] Data and reports from these programs can be found at http://www.bls.gov/iif/

helpful statistic in that it can be compared across occupations with very different levels of employment or patterns of work.

Figure 12 (below) shows the number of occupationally related, nonfatal injuries and illnesses that result in days away from work. The first column shows the major occupational groups, the second column shows the number of incidents, and the third column shows the incidence rate. Occupations such as production, and transportation and material moving have very high levels of occupationally-related accidents that result in days away from work. However, protective service occupations, which include firefighting and prevention, law enforcement workers and other protective service workers, have the highest incidence rate, which suggests that

Figure 12. Nonfatal Occupational Injuries and Illnesses Involving Days Away from Work, by Occupational Category: 2013	**Number**	**Incidence rate**	**Median days away from work**
All Occupations	1,162,210	109.4	8
Management	26,750	41.7	5
Business and financial operations	9,180	16.8	8
Computer and mathematical	2,460	7.6	6
Architecture and engineering	3,510	16.8	7
Life, physical, and social science	2,390	27.4	6
Community and social services	14,460	95.1	6
Legal	1,240	13.8	5
Education, training, and library	34,830	55.9	5
Arts, design, entertainment, sports, and media	8,750	65.8	19
Healthcare practitioners and technical	64,380	104.5	7
Healthcare support	69,650	239	7
Protective Service Occupations	82,650	314.7	12
Food preparation and serving related	83,520	107.8	5
Building and grounds cleaning and maintenance	80,470	249.4	8
Personal care and service	28,570	106	5
Sales and related	63,630	58.8	9
Office and administrative support	77,900	48	8
Farming, fishing, and forestry	15,990	176.7	6
Construction and extraction	90,730	200.9	11
Installation, maintenance, and repair	95,070	206.4	10
Production	109,840	140.7	8
Transportation and material moving	192,720	253.9	14

Source: Nonfatal Occupational Injuries and Illnesses Requiring Days Away From Work, 2013. Bureau of Labor Statistics. http://www.bls.gov/news.release/pdf/osh2.pdf. See Table 3; Totals among private, state, and local government employers.

accounting for levels of employment and hours worked, workers in the protective service occupations experience occupationally-related accidents that result in days away from work at a higher rate than all other occupational groups listed.

The last column in the table shows that the median reported number of days away from work caused by occupationally related accidents for workers in protective service industries is 12 days. Importantly, this implies that time away from work caused by occupational injuries is significant. Figure 13 below, breaks down the injury and illnesses data by more detailed

Figure 13. Nonfatal Occupational Injuries and Illnesses Involving Days Away from Work: 2013	Number	Incidence rate	Median days away from work
All Occupations	1,162,210	109.4	8
Bus drivers, transit and intercity	7,440	676.8	17
Police and sheriff's patrol officers	28,170	490.9	10
Firefighters	14,540	456.7	16
Correctional officers and jailers	15,970	420.6	11
Nursing assistants	41,450	392.8	6
Telecommunications line installers and repairers	4,330	387	17
Highway maintenance workers	4,450	373.5	13
Heating, air conditioning, and refrigeration mechanics and installers	7,320	329.8	6
Heavy and tractor-trailer truck drivers	49,000	328.4	22
Light truck or delivery services drivers	23,980	327.8	14
Food preparation workers	17,010	320.7	5
Laborers and freight, stock, and material movers, hand	53,740	303.5	9
Construction laborers	20,710	301.7	8
Plumbers, pipefitters, and steamfitters	9,200	290.6	15
Painters, construction and maintenance	4,390	281.6	11
Maids and housekeeping cleaners	18,580	277.3	7

Source: Nonfatal Occupational Injuries and Illnesses Requiring Days Away From Work, 2013. Bureau of Labor Statistics. http://www.bls.gov/news.release/pdf/osh2.pdf See Table 4; Total private, state, and local govt.

occupations, including police and firefighters which are highlighted in blue and red respectively. As with Figure 13 above, data are presented on the number of incidents, the incidence rate and the median days away from work.

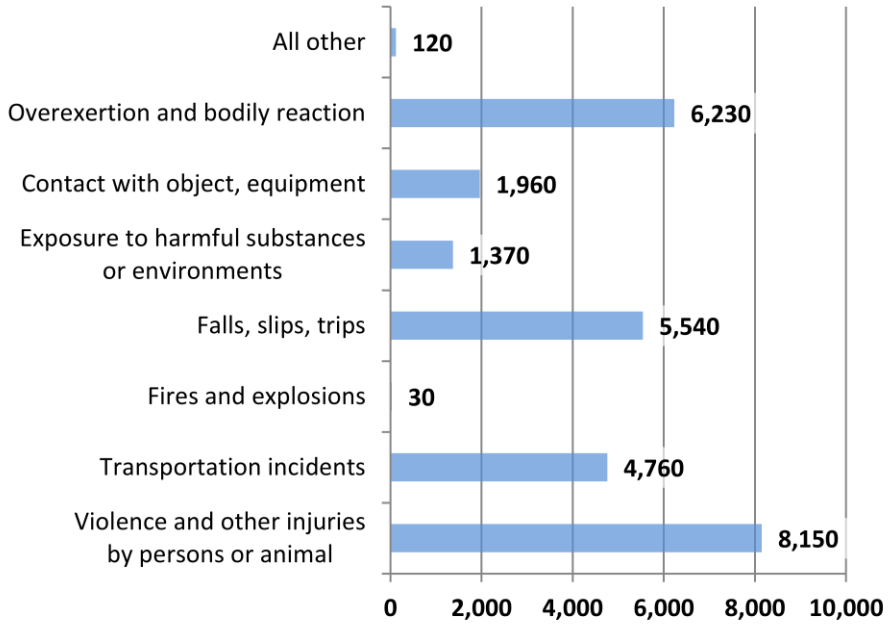
Consistent with the patterns in the data presented in Figure 13, it is clear that while police and firefighters do not have the highest reported number of occupationally related illness and injury incidents, they have among the highest incidence rates. The size of the incidence rates imply

that risks are substantial and that individuals suffer adverse impacts considerably more frequently than in other industries.

Given the high incidence rates of occupationally related injuries and illnesses, understanding the circumstances that lead to them is important. Figure 14 below shows the general events associated with illness or injuries that result in days away from work for police and sheriff's patrol officers. Incidents are predominantly associated with four categories: violence and other injuries by persons or animal, overexertion and bodily reaction, falls and slips, and transportation incidents. The first two categories (violence and overexertion) account for just over 50% of the total incidents, while all four categories account for just over 85% of the total incidents.

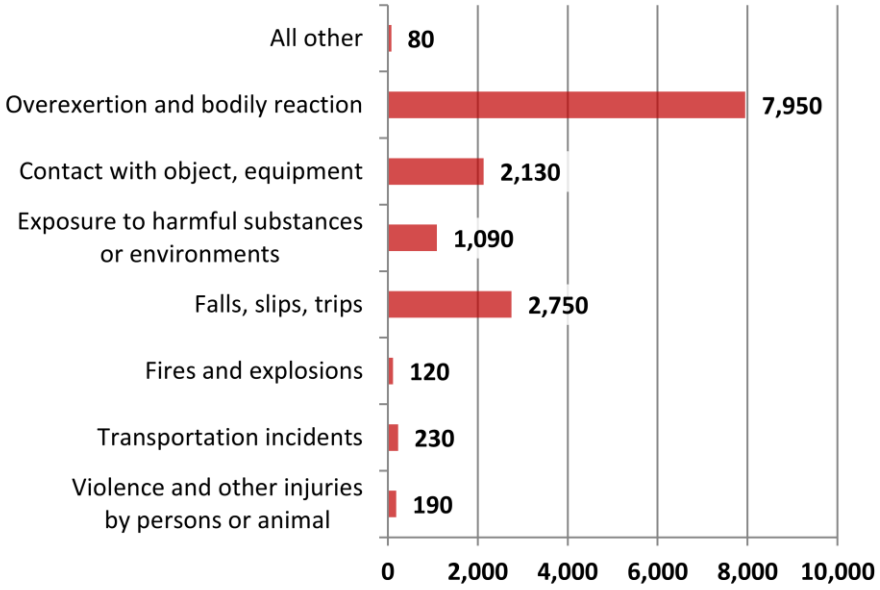
For firefighters, incidents are predominantly associated with overexertion and bodily reaction, with fewer numbers of incidents caused by contact with objects, and falls and slips (Figure 15). Approximately 55% of incidents are caused by overexertion. Incidents caused by contact with objects, and falls and slips account for an additional 34% of all incidents.

Figure 14. Events Associated with Injuries for Police and Sheriff's Patrol Officers: 2013



Source: Nonfatal Occupational Injuries and Illnesses Requiring Days Away From Work, 2013. Bureau of Labor Statistics. http://www.bls.gov/news.release/pdf/osh2.pdf See Table 16.

Figure 15. Events Associated with Injuries for Firefighters: 2013



Source: Nonfatal Occupational Injuries and Illnesses Requiring Days Away From Work, 2013. Bureau of Labor Statistics. http://www.bls.gov/news.release/pdf/osh2.pdf See Table 16.

In some cases, the hazards associated with first responder work can be extreme. Figure 16 shows the level of fatal occupational injuries sustained by individuals in various occupational groupings. During 2013, there were 53 fatalities among fire fighting and prevention workers, and 97 fatalities reported among law enforcement workers. Only three occupational groups had higher rates than protective services: transportation and material moving, construction and extraction, and installation, maintenance and repair.

Figure 16. Fatal Occupational Injuries Among Occupational Groups, Highlighting Protective Service Workers: 2013	**Number of Fatalities**	**Percent of Total**
Occupational Category Totals	4,585	100%
Management	408	9%
Business and financial operations	21	*
Computer and mathematical	12	*
Architecture and engineering	37	1%
Life, physical, and social science	25	1%
Community and social services	20	*
Legal	16	*
Education, training, and library	20	*
Arts, design, entertainment, sports, and media	52	1%
Healthcare practitioners and technical	60	1%
Healthcare support	18	*
Protective service	**249**	**5%**
Fire fighting and prevention	**53**	**1%**
Law enforcement workers	**97**	**2%**
Other protective service workers	**69**	**2%**
Food preparation and serving related	68	1%
Building and grounds cleaning and maintenance	249	5%
Personal care and service	48	1%
Sales and related	220	5%
Office and administrative support	75	2%
Farming, fishing, and forestry	232	5%
Construction and extraction	845	18%
Installation, maintenance, and repair	370	8%
Production	213	5%
Transportation and material moving	1,255	27%
Resident Military	71	2%

* indicates values less than 0.5 Percent. Source: Census of Fatal Occupational Injuries, Bureau of Labor Statistics. http://www.bls.gov/news.release/cfoi.t03.htm.

V. Employment Projections for First Responder Occupations

The Bureau of Labor Statistics (BLS) releases projections of industry and occupational employment every two years and these projections cover a ten year span. These projections are calculated using six steps that involve projecting labor force, economic growth, final demand, industry output, industry employment, and lastly employment and openings by occupation. BLS uses many different data sources in order to calculate these projections including data from the Bureau of Economic Analysis and Census Bureau. The most current employment projections were released in December 2013 and cover the 2012-2022 period.

Figure 17 (below) shows the projected employment for firefighters, police and sheriff's patrol officers, and EMTs and paramedics. The increase for firefighters and police are similar at 6.6% and 5.9% (and lower than the projected rate of growth for all occupations which is 10.8%), while EMTs and paramedics are expected to see a much higher increase in employment at 23.1%. EMTs and paramedics employment is projected to grow at more than twice the rate for all occupations.

Figure 17. Projected Employment for First Responders (Employment in Thousands)

2012 National Employment Matrix title and code		Employment				Change, 2012-2022		Job openings due to growth and replacements, 2012-2022
		Number		Percent distribution				
		2012	2022	2012	2022	Number	%	
Firefighters	33-2011	307.0	327.3	0.2	0.2	20.3	6.6	104.0
Police and Sheriff Patrol Officers	33-3051	653.8	692.7	0.4	0.4	38.8	5.9	243.9
EMTs and paramedics	29-2041	239.1	294.4	0.2	0.2	55.3	23.1	120.6
Total, all occupations	00-0000	145,355.8	160,983.7	100.0	100.0	15,628.0	10.8	50,557.3

Source: Employment Projections program, U.S. Department of Labor, U.S. Bureau of Labor Statistics. http://www.bls.gov/emp/ep_table_102.htm.

The BLS Employment Projections also include these occupations by industry. Firefighters and police are concentrated in local government, with 91% and 85% of employment, respectively, while only 30% of EMTs and paramedics are employed in local government. Figure 18 shows the rate of growth for EMTs and paramedics in the local government is much lower, at 6.8%, than the rate of growth overall for this occupational category. An overwhelming majority of police and firefighters are in local government so these rates are more similar to the overall

growth rates for these occupations. All of these first responder occupations are projected to grow slightly faster than overall employment in local government.

Figure 18. Projected Employment for First Responders in Local Government (Employment in Thousands)

2012 National Employment Matrix title and code		Employment				Change, 2012-2022	
		Number		Percent of Occupation			
		2012	2022	2012	2022	%	Number
Firefighters	33-2011	278.1	297.0	90.6	90.8	6.8	19.0
Police and sheriff's patrol officers	33-3051	555.2	593.1	84.9	85.6	6.8	37.9
EMTs and paramedics	29-2041	70.5	75.3	29.5	25.6	6.8	4.8
Total, all occupations	00-0000	5,618.2	5,945.1	3.9	3.7	5.8	326.9

Source: Employment Projections program, U.S. Department of Labor, U.S. Bureau of Labor Statistics. http://www.bls.gov/emp/ep_table_109.htm. Industry code 999300.

VI. Conclusion / Summary

First responders perform essential functions that promote and ensure public safety, well-being, and the protection of individuals. As the data in this report show, first responders in the three groups examined, tend to be White, male, and between 20 and 54 years old. Women are particularly underrepresented in comparison to their presence among the total employed. Blacks are represented in police occupations in proportion to the working population, but are underrepresented in firefighter and EMT occupations. Hispanics are underrepresented among first responder occupations when compared to the total employed, with the lowest proportion among EMTs.

First responders have notably higher levels of post high school education than the working-age population, and are generally more likely to have been Veterans.

The current projected rate of growth in employment for police and firefighters is slower than for all occupations. EMTs and paramedics are expected to see a substantial increase in employment between 2012 and 2022. However growth in the local government for EMTs and paramedics is much lower, at 6.8%.

Police and firefighters report higher earnings than the population as a whole. Despite these earnings, it is important to note that first responder work is inherently dangerous, and regrettably, leads to much higher occurrences of injuries, and resulting days away from work, than virtually all other occupations. First responders also have higher average hours usually worked in a week.

This report summarizes readily available public data to characterize who first responders are, and to describe their work, however, there are a number of areas in which improved data quality and quantity would be beneficial for characterizing first responders. The most notable is the need for more detailed information on volunteers who work in protective service or support career first responders. In particular, a more thorough understanding of the extent to which these individuals could, and in practice actually do, form a pipeline for career first responders would be helpful in guiding potential candidates towards these fields. It should be noted that there are some existing resources such as National Fire Department Census conducted by the U.S. Fire Administration within the Federal Emergency Management Agency and the Department of Homeland Security, that provide information and could serve as models for a more exhaustive and thorough collection of information.

Additional data would also be valuable in characterizing the typical hours worked and the resulting wages. Differences in wages between male and female career first responders, as well as between other groups, could be driven by a number of different factors including large differences in reported hours worked per week, and the resulting role that overtime wages play in constituting annual compensation. Additional specific data on less easily discerned factors such as seniority, and the roles that individuals play within these organizations would also provide valuable context for any differences that can be distinguished from population level data.

The data presented in this report are descriptive statistics and are not intended to make inferences about the diversity of the occupations nor used to evaluate the employment practices of particular departments.

Technical Appendix: Data Sources and Processing Code

Identifying first responders in publicly available data

The occupational codes used to define firefighters and EMTs are standardized throughout this report. Firefighters are defined by the detailed occupational code assignment 33-2011 and EMTs and Paramedics are defined by the detailed occupational code assignment 29-2041. The BLS data on Police and Sheriff's Patrol Officers are defined by occupational code assignment 33-3051. Data coming from the Current Population Survey uses the broad occupational code Police Officers (33-3050), which includes Police and Sheriff's Patrol Officers, as well as, Transit and Railroad police (33-3052). Some statistics describing protective service may include: Detectives and Criminal Investigators (33-3021), Fish and Game Wardens (33-3031), and Correctional Officers and Jailers (33-3012), a complete list of occupations included in Protective Service occupations can be found in the 2010 SOC Definitions located at http://www.bls.gov/soc/soc_2010_definitions.pdf.

Employment Projections

Links to data:

- http://www.bls.gov/ooh/protective-service/firefighters.htm#tab-6
- http://www.bls.gov/ooh/protective-service/police-and-detectives.htm#tab-6
- http://www.bls.gov/ooh/healthcare/emts-and-paramedics.htm#tab-6

Processing Code: Not applicable.

Description:

The Employment Projections (EP) program develops information about the labor market for the Nation as a whole for 10 years in the future. The data compiled for this report largely comes from the 2014–15 Occupational Outlook Handbook (OOH). This handbook is one of the nation's most widely used sources of career information, and is used by career counselors, students, parents, teachers, jobseekers, career changers, education and training officials, and researchers. The 2014–15 OOH includes 334 occupational profiles covering 580 detailed occupations, or about 84 percent of total employment in 2012.

Technical details: Data can be tabulated for specific occupations, or for broader occupational groups. As an example, the BLS occupational grouping for Police and Detectives is actually comprised of four separate, specific occupational codes: Detectives and Criminal Investigators (33-3021), Fish and Game Wardens (33-3031), Police and Sheriff's Patrol Officers (33-3051), and Transit and Railroad Police (33-3052). Additional information on the methods used for the

2012-2022 projections appears in five articles in the Monthly Labor Review. Links to these articles are available at www.bls.gov/emp/publications.htm.

Occupational Employment Statistics (OES)
Link to data: http://www.bls.gov/oes/tables.htm

Processing Code: Not applicable.

Description: The OES program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual States, and for metropolitan and nonmetropolitan areas; national occupational estimates for specific industries are also available.

Technical details: For years from 2000 through 2013, data were taken from national estimates, using the following occupational identifiers: 29-2041, Emergency Medical Technicians and Paramedics; 33-2011, Firefighters; 33-3051, Police and Sheriff's Patrol Officers. Data elements and estimates used include levels of employment, mean and median hourly wage, and annual mean wage.

Current Population Survey (CPS) Annual Averages 2014
Link to data: http://thedataweb.rm.census.gov/ftp/cps_ftp.html

Processing Code: Will be posted to the CEO website.

Description: The Current Population Survey (CPS) of the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. About 60,000 occupied households are surveyed each month. The individuals eligible for the CPS are the civilian non-institutional population residing in the United States and those armed forces members living with civilians either on or off base within these households. The CPS provides data on characteristics such as age, sex, and educational attainment that are collected along with economic data on earnings and occupation. The estimates for annual averages are a compilation of the monthly data.

Technical details: Total employed 16+ are defined as those who were employed during the month of interview and older than 15 (PREMPNOT=1) and PRTAGE>=16. Individuals were categorized by their occupation code for their primary job. The first responder categories were classified by emergency medical technicians (EMTs) and paramedics (PEIO1OCD=3400), firefighters (PEIO1OCD=3740), and police officers (PEIO1OCD=3850). Link to the record layout http://thedataweb.rm.census.gov/pub/cps/basic/201401-/January_2014_Record_Layout.txt

Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) 2014
Link to data: http://thedataweb.rm.census.gov/ftp/cps_ftp.html

Processing Code: Will be posted to the CEO website.

Description: The ASEC sample is based on the civilian noninstitutionalized population of the United States living in housing units and includes members of the Armed Forces living with civilians on or off a military base. The ASEC file includes the usual monthly labor force data in addition to supplemental data on work experience, income, noncash benefits, and migration. Additional data for persons 15 years old and older are available concerning weeks worked, usual hours worked per week, and total income. Data are self-reported and information on demographics refers to the time of the survey while supplemental data on employment and income refer to the preceding year.

Technical details: Working population 16+ is defined as those who worked at a job or business during 2013, or those who performed temporary, part-time, or seasonal work (WORKYN=1 or WTEMP=1) and A-AGE>=16 , this is also the population included in the average hours. Individuals were categorized by the occupation of the longest job held. The first responder categories were classified by emergency medical technicians (EMTs) and paramedics (OCCUP=3400), firefighters (OCCUP=3740), and police officers (OCCUP=3850). The cases included in the earnings averages were those that had earnings from the longest job recode (ERN-YN=1). First responders with earnings above the swap threshold (ERN-VAL>250,000) were chosen for review. Two first responder cases were well above this threshold and excluded from the average earnings. This cut off was chosen due to the rank proximity swapping method for disclosure avoidance in the 2014 ASEC. Link to the technical documentation for variable definitions http://www2.census.gov/programs-surveys/cps/techdocs/cpsmar14revised.pdf.