Montgomery County Fire and Rescue Service FY13 Performance Review

Steve Lohr, Fire Chief

30 July 2014

CountyStat

CountyStat Principles

- **Require Data-Driven Performance**
- **Promote Strategic Governance**
- **Increase Government Transparency**
- **Foster a Culture of Accountability**

Agenda

- **Welcome and Introductions**
- **Overview of Existing Follow-Ups**
- **Overview of Budget and Workforce from FY09 to FY15**
- **Examine New Staffing vs. Overtime at the Training Academy**
- **In-Depth Look at Promotion Process in MCFRS**
- **Completion of Follow-Ups from Telestaff, Overtime, and Leave Meeting**
- **Update on Annual Headline Measure Performance**
  - In-depth Examination of Fire Injuries
- **Overview of MCFRS's Responsive and Sustainable Leadership**

Meeting Goals

- Determine the impact of MCFRS programs and activities on headline measures
- Determine the most cost-effective method for staffing the MCFRS Training Academy
- Address outstanding follow-up items from staffing and overtime meetings

Desired Outcomes

- Improve workforce availability in MCFRS through continued analyses of the department's leave patterns and determine best practices for leave administration and policy
- Improve the promotion process to ensure vacancies are filled as quickly as possible throughout the various ranks
- Provide world-class fire and emergency medical services to Montgomery County residents, businesses, and visitors through data-driven decision making and follow-up

Follow-Up Items from Previous Meetings (1/2)

Meeting Date	Meeting Topic	Responsible Party	Follow-Up Item	Due Date	CountyStat Status
11/13/12	FRS Annual Performance Review	MCFRS	Conduct analysis of overall response times in comparison to benchmark jurisdictions	8/30/13	In Progress
11/13/12	FRS Annual Performance Review	MCFRS	Identify opportunities to leverage emerging technologies that capture more accurate turnout and arrival times	8/30/13	In Progress
1/29/14	Telestaff, Scheduling, and Leave Use	MCFRS	Revisit the utility of the daily reports produced by Telestaff to ensure they are conveying actionable information and the right things to MCFRS management	3/31/14	Complete
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Change some of the data views in the 1/29 presentation to the "three shift model" to identify if there are any patterns/ trends within shifts	7/30/14	Complete
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Conduct a deeper analysis of specific areas where a leave type correlates with high OT and where there is above average sick leave where one wouldn't expect it (i.e. Fridays and Saturdays)	7/30/14	Complete
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Conduct an analysis of "Force Holds" as a measure to help determine appropriate levels of new hires vs. OT	7/30/14	Complete

Follow-Up Items from Previous Meetings (2/2)

Meeting Date	Meeting Topic	Responsible Party	Follow-Up Item	Due Date	CountyStat Status
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Identify any process changes that can be implemented when filling a vacancy with a promotion (it can take 30+ days and the open position may have to be backfilled with OT until it's filled)	7/30/14	Complete
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Examine MCFRS sick and other leave usage and OT on either side of County holidays, and add Code Compliance, training academy, etc. to the overall analysis to get the full scope of OT	4/30/14	Complete
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Investigate how return-to-work policies and practices and personnel on MIDS influence OT	4/30/14	In Progress
1/29/14	Telestaff, Scheduling, and Leave Use	CountyStat	Investigate usage of unscheduled/unexcused sick leave, and any improvements that can be made to the current Crystal-based reports being used to monitor it	4/30/14	Complete
12/18/13	Overtime Update	CountyStat	Identify if any other models exist for staffing the MCFRS Training Academy that rely less on using staff on OT	3/28/14	Complete

Historical Operating Budget

Fire Fund (Tax Supported)	FY09	FY10	FY11	FY12	FY13	FY14	FY15
MCFRS Approved Operating Budget	$191,054,930	$192,974,090	$182,148,330	$179,769,870	$204,946,888	$217,018,693	$224,302,381
MCFRS Final Operating Budget*	--	$195,173,508	$188,149,081	$191,327,598	$205,015,043	$218,006,878	--
MCFRS Actual Expenditures*	$191,604,135	$193,950,088	$188,164,064	$191,327,584	$204,965,051	$222,652,746 *(not final)*	--
% of Expenditures Under/(Over) Approved	(0.29%)	(0.51%)	(3.30%)	(6.43%)	(0.01%)	(2.60%)	--
Grant Fund							
MCFRS Approved Operating Budget	$623,430	$744,530	$477,100	$243,590	$130,200	$1,621,723	$917,155
MCFRS Final Operating Budget*	--	$3,127,111	$11,049,154	$2,748,580	$9,403,532	$3,146,213	--
MCFRS Actual Expenditures*	$3,851,857	$4,334,269	$4,474,315	$5,478,585	$6,190,200	$6,061,737 *(not final)*	--

From FY09 to FY14, MCFRS's tax supported expenditures have risen by 16%. During this same time span, MCFRS consisted of 12% of MCG's operating budget.

*Excludes prior year encumbrances

Authorized MCFRS Uniformed Personnel Complement and Total Full-Time Equivalents (FTEs)

Approved Positions	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY15 Percent of Total	Percent Change FY09 – 15
Firefighter III	650	656	642	641	616	621	620	53.6%	- 4.6%
Master Firefighter	218	225	222	222	228	229	222	19.2%	+ 1.8%
Lieutenant	111	109	108	108	123	124	124	10.7%	+ 11.7%
Captain	130	141	141	141	142	151	149	12.9%	+ 14.6%
Battalion Chief	28	27	24	24	25	26	25	2.2%	- 10.7%
Assistant Chief	12	12	13	13	14	13	13	1.1%	+ 8.3%
Division Chief	5	5	4	4	4	4	4	0.3%	- 20.0%
TOTAL	1,154	1,175	1,154	1,153	1,152	1,168	1,157	100%	+0.3%

MCFRS Total Workyears/ FTEs*	1,353.00	1,351.20	1,235.00	1,243.00	1,253.80	1,281.56	1,285.56
MCFRS Total Workyears as % of Total MCG Workyears/ FTEs*	13.5%	13.9%	13.8%	13.8%	13.6%	13.6%	13.4%

*Workforce calculation changed from workyears to full-time equivalents in FY13
Source: OMB

Part 1

OVERTIME AT THE TRAINING ACADEMY

MCFRS Training Academy – Overtime Hours

- **Currently, MCFRS uses field staff to supplement instruction hours at the training academy**
  - Field staff cover a wide array of topics from the essentials of firefighting to operation of hydraulic pumps
  - When field staff work in the academy, they are being paid overtime when not working on a regularly scheduled day. If they are working on their regular schedule, overtime is typically used to cover their position at the station.

- **To examine whether or not the use of overtime is cost efficient, CountyStat examined the overtime spent at the academy versus the cost of using full-time staff as instructors.**

- **To simplify the analysis, CountyStat examined if the overtime hours could be absorbed at a specific rank (Captain, Lieutenant, Master, of Firefighter III).**

MCFRS Instructor Overtime for 2 years by Position

	6/3/12 – 6/1/13 (2013)		6/2/13 – 5/31/14 (2014)	
Position	**Overtime Hours**	**Overtime Pay**	**Overtime Hours**	**Overtime Pay**
Fire/Rescue Captain	12,507.79	$830,885.12	13,252.55	$904,497.00
Master Firefighter/Rescuer	8,907.26	$432,343.74	12,198.23	$614,741.95
Fire/Rescue Lieutenant	6,331.06	$332,001.54	8,648.82	$459,464.22
Firefighter/Rescuer III	3,034.82	$110,084.51	4,432.10	$160,238.61
Community Health Nurse II	129.50	$8,035.98	176.00	$11,473.85
Fire/Rescue Battalion Chief	30.00	$2,093.70	0.00	$0.00
TOTAL	**30,940.43**	**$1,715,444.59**	**38,707.70**	**$2,150,415.63**

For the two years analyzed, Captains worked the most overtime hours at the academy. Instruction hours worked increased 25% year-over-year.

Overtime Costs vs. New Positions - June 2012 to June 2013

	All Captains	All Lieutenants	All MFFs	All FFIIIs
OT Hours 6/3/12 – 6/1/13	30,940	30,940	30,940	30,940
Average Cost per Position per Year*	$172,422	$147,863	$131,944	$104,012
Shift Relief Factor (day work)**	1.4	1.4	1.4	1.4
New FTEs Needed to Fill OT	20.83	20.83	20.83	20.83
Total Cost for New FTEs	**$3,590,738**	**$3,079,299**	**$2,747,778**	**$2,166,079**
New FTEs vs OT Cost	**+$1,875,293**	**+$1,363,854**	**+$1,032,333**	**+$450,634**

Consistent with other examinations in MCFRS regarding new positions versus overtime, it is more cost efficient to use overtime to staff the training academy instead of hiring new positions. Even in the highly unlikely scenario that instruction hours could be absorbed at the FFIII level, it is still more cost effective to use overtime. Using field staff also allows for more flexibility in scheduling as the need for instructors changes throughout the year.

*Based on the average FY14 cost for position

** Shift relief factor based on CountyStat's MCFRS staffing analysis report dated 1/23/2012

Overtime Costs vs. New Positions – June 2013 to June 2014

	All Captains	All Lieutenants	All MFFs	All FFIIIs
OT Hours 6/2/12 – 5/31/14	38,708	38,708	38,708	38,708
Average Cost per Position per Year*	$172,422	$147,863	$131,944	$104,012
Shift Relief Factor (day work)**	1.4	1.4	1.4	1.4
New FTEs Needed to Fill OT	26	26	26	26
Total Cost for New FTEs	**$4,492,155**	**$3,852,325**	**$3,437,579**	**$2,709,851**
New FTEs vs OT Cost	**+$2,341,739**	**+$1,701,909**	**+$1,287,163**	**+$559,435**

Consistent with other examinations in MCFRS regarding new positions versus overtime, it is more cost efficient to use overtime to staff the training academy instead of hiring new positions. Even in the highly unlikely scenario that instruction hours could be absorbed at the FFIII level, it is still more cost effective to use overtime. Using field staff also allows for more flexibility in scheduling as the need for instructors changes throughout the year.

*Based on the average FY14 cost for position

** Shift relief factor based on CountyStat's MCFRS staffing analysis report dated 1/23/2012

Part 2

PROMOTIONS IN MCFRS

Promotions in MCFRS - Overview

- MCFRS noted in the previous overtime and leave CountyStat session that the promotion process can cause unnecessary vacancies and overtime

- In the previous system, HR liaisons were able to temporarily put two employees into a position number as one was leaving the position and the other was being promoted to the position. Currently, the Oracle system does not allow for this temporary duplication.
  - Because the position can only be filled by one person, the position must first be vacated and then the promotion process can begin.
  - The process creates a slow domino effect where the last promotion can be filled up to a month or more after the initial process began.

- MCFRS has spoken with OHR and the ERP team about this issue, and no acceptable workaround has been found. Resources from the ERP team would be needed to alter the current system.

Promotions in MCFRS - Example using retirement of 4 Battalion Chiefs

B/C
- Vacancies advertised with effective date: 6/1
- Total of 46 employees supervised by 4 B/Cs

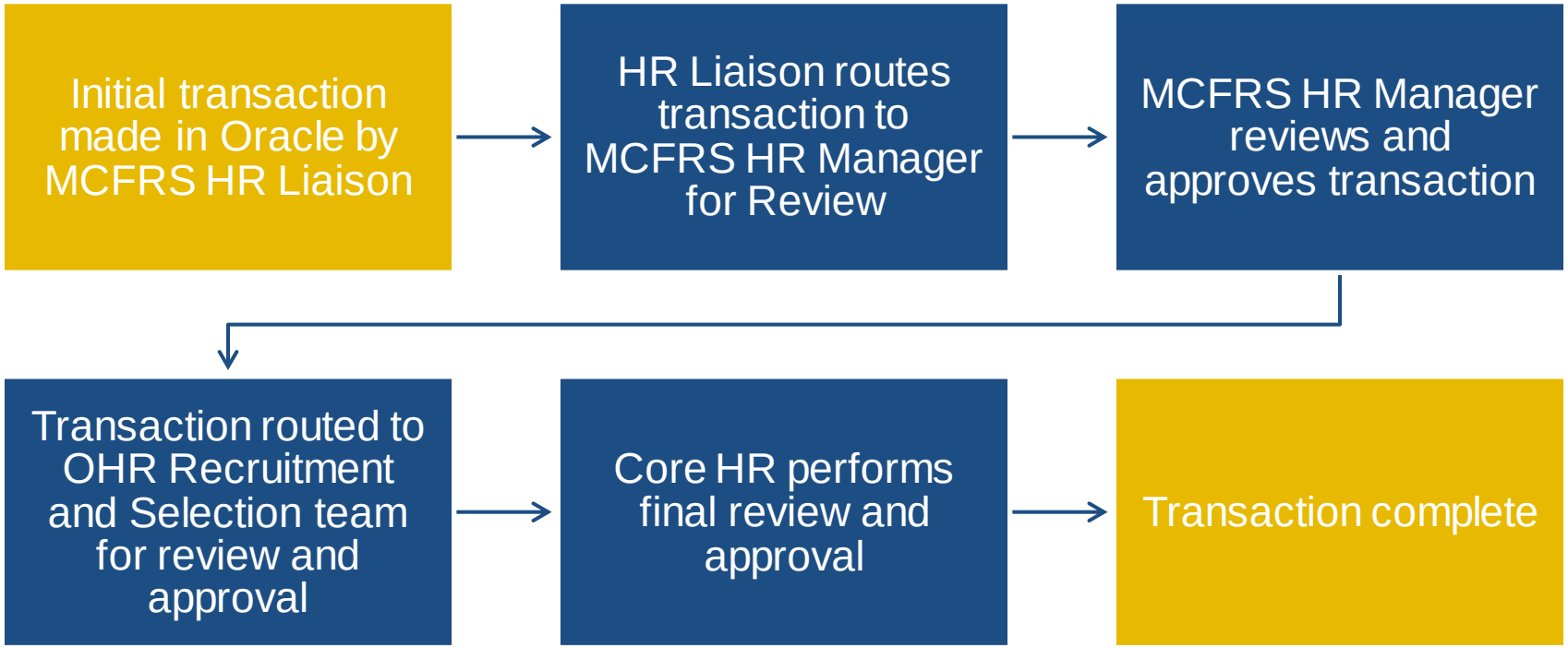
Capt.
- Advertise vacancies and promote effective date 6/15
- Total of 51 employees supervised by 4 captains

LT
- Advertise vacancies and promote effective date 6/29
- Total of 7 employees supervised by 4 lieutenants

MFF
- Advertise vacancies and promote effective 7/13

Because the current system does not allow for more than one person to be in a position at a time, there is a delayed start for promotions in the lower ranks. When there are vacancies caused by this delay, the unfilled position is likely backfilled on overtime. Ideally, promotions could be effective within the same or following pay period.

Promotions in MCFRS - Oracle Transaction Process



Part 3

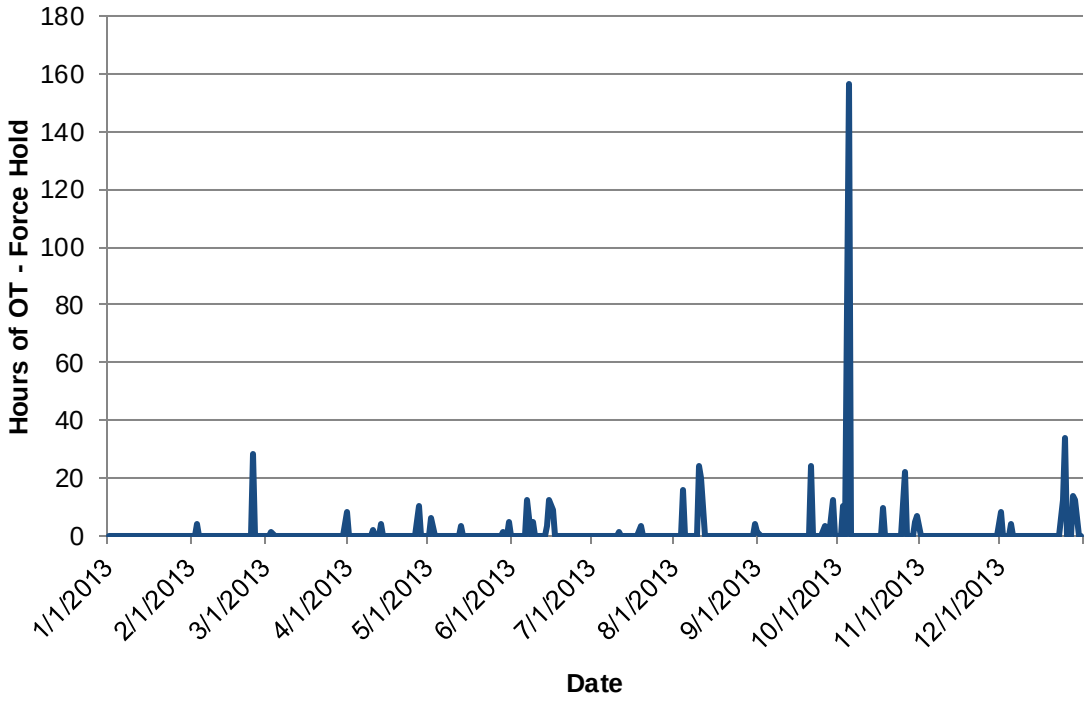
STAFFING STUDY FOLLOW-UPS

Force Holds in Operations (1/3)

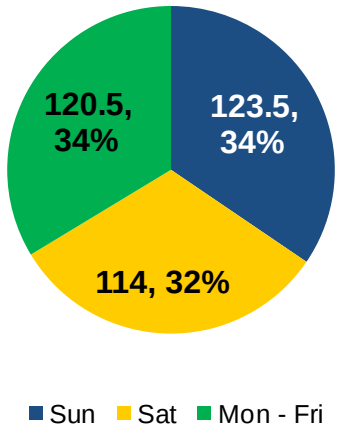
- As found in the 1/29 MCFRS CountyStat session, it is cheaper to use overtime than acquire more staff due to the costs of training, benefits, and the high shift relief factor for firefighters

- Decisions about whether to add FTEs in Operations should not be driven solely by cost, but also safety, productivity, and employee morale

Force Holds in Operations (2/3) – Force Hold Trends by Date



Force Holds by Day of Week*

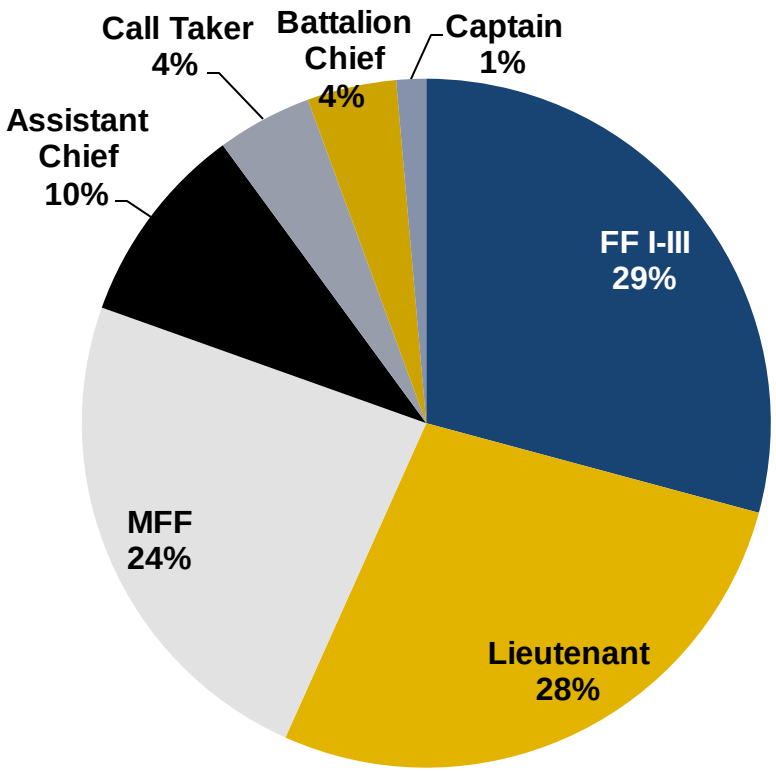


In CY13, there were 68 force hold occurrences over 38 days for a total of 514.25 hours. The majority of force holds (66%) occurred on a Saturday or Sunday. 12% of force hold hours occurred on County holidays.
The spike on October 5th of 156.25 hours was the result of high use of casual and sick leave, detailed off the floor, and US&R drill.

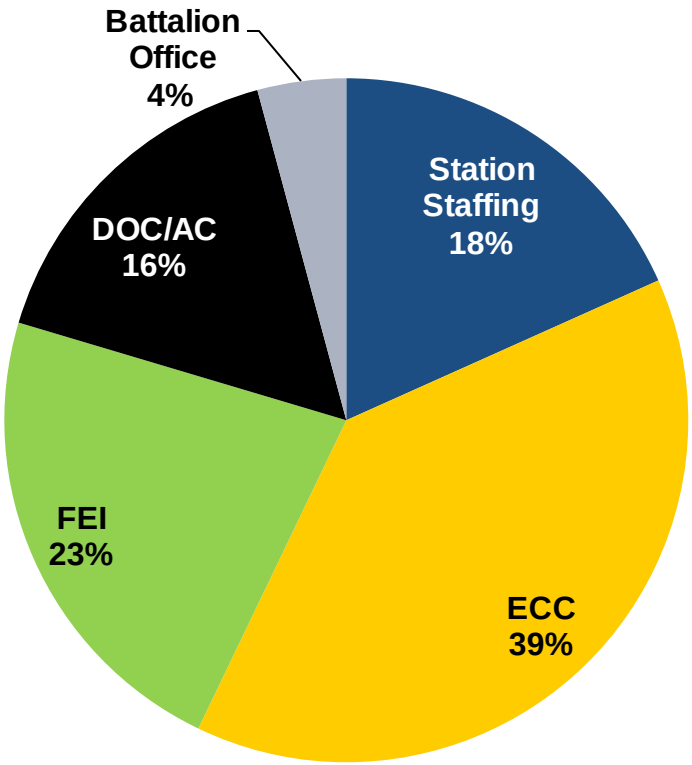
*Excludes outlier date of Saturday, October 5th, 2013

Force Holds in Operations (3/3) – Force Hold Hours by Assignment and Rank*

Force Hold Hours by Rank



Force Hold Hours by Assignment



Based on their proportion of MCFRS, there is heavy use of force holds in the Fire and Explosive Investigations Unit in MCFRS. There are eight investigator positions all at the rank of lieutenant.

*Excludes outlier date of Saturday, October 5th, 2013

Shift Imbalances (1/2)

- **Shifts can become unbalanced throughout the year due to varying factors such as:**
  - Vacant positions
  - Levels of qualification (driver status, specialty skill sets, etc.)
  - Levels of EMS (ALS vs. BLS) licensure

- **Each of the 3 shifts require 285 personnel during the weekday**
  - 251 personnel are required on nights and weekends, with the remainder made up by volunteers

Having the shifts balanced in the number of personnel and qualifications can avoid creating a leave and overtime imbalance.

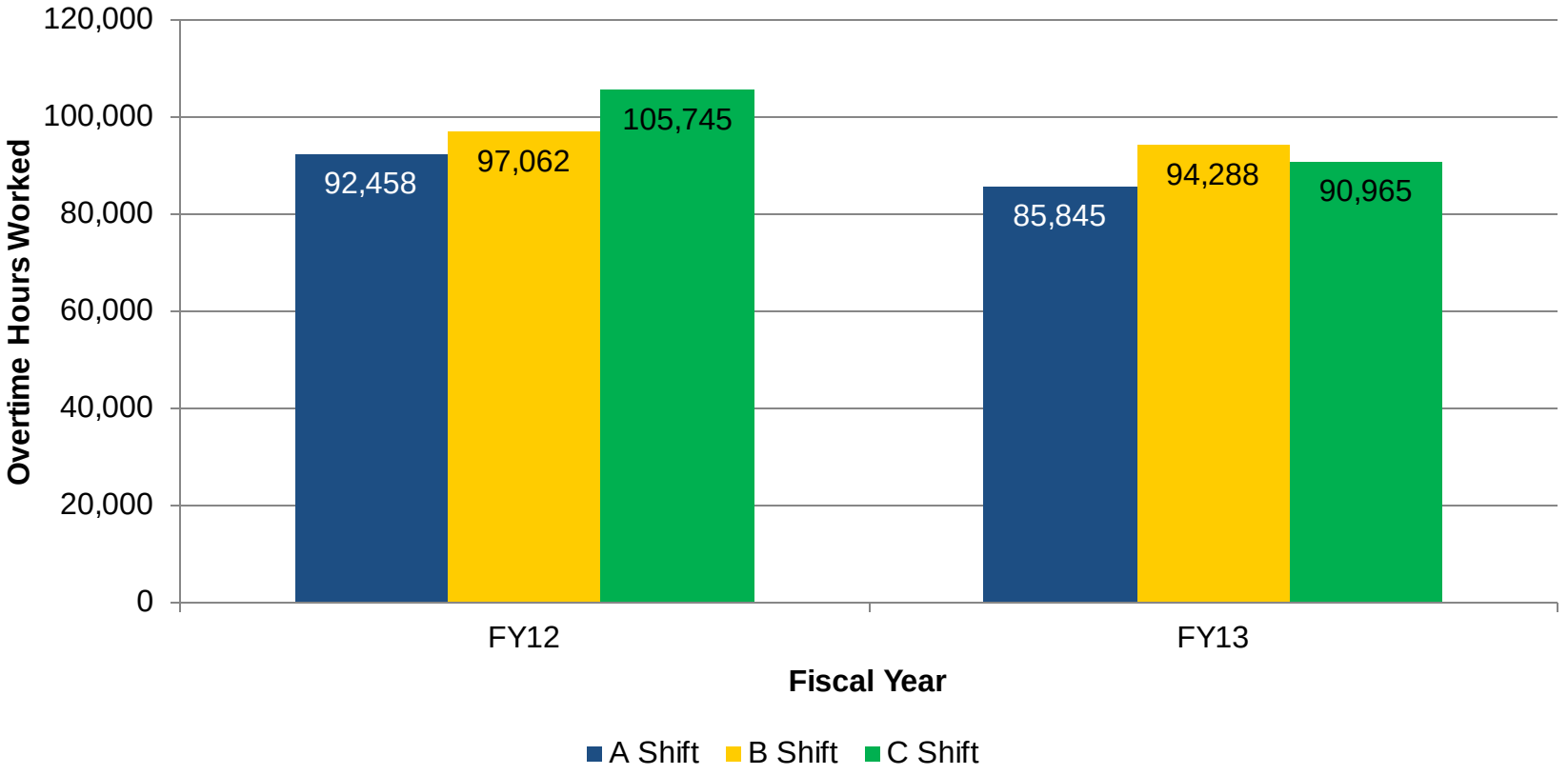
Shift Imbalances (2/2)

Rank/Qualification	# Needed for Min. Staffing during Weekday	A Shift	B Shift	C Shift
FFIII/Paramedics	29	31	33	32
MFF/Paramedics	18	16	14	14
Tractor-Drawn Aerial Truck Driver	12	51	38	43
Current Vacancies (All Ranks)	282	28	17	26

According to MCFRS's analysis, the qualification of MFF/Paramedic is currently below desired staffing levels. Having the desired level of staffing for paramedics is a challenge for EMS services across the nation. Total vacancies amongst the shifts is currently unbalanced with a difference of 11 positions between A and B shift. These imbalances and low staffing levels can result in extra overtime use and varying overtime between the shifts.

Source: Analysis performed by MCFRS based on staffing levels as of 7/22/14

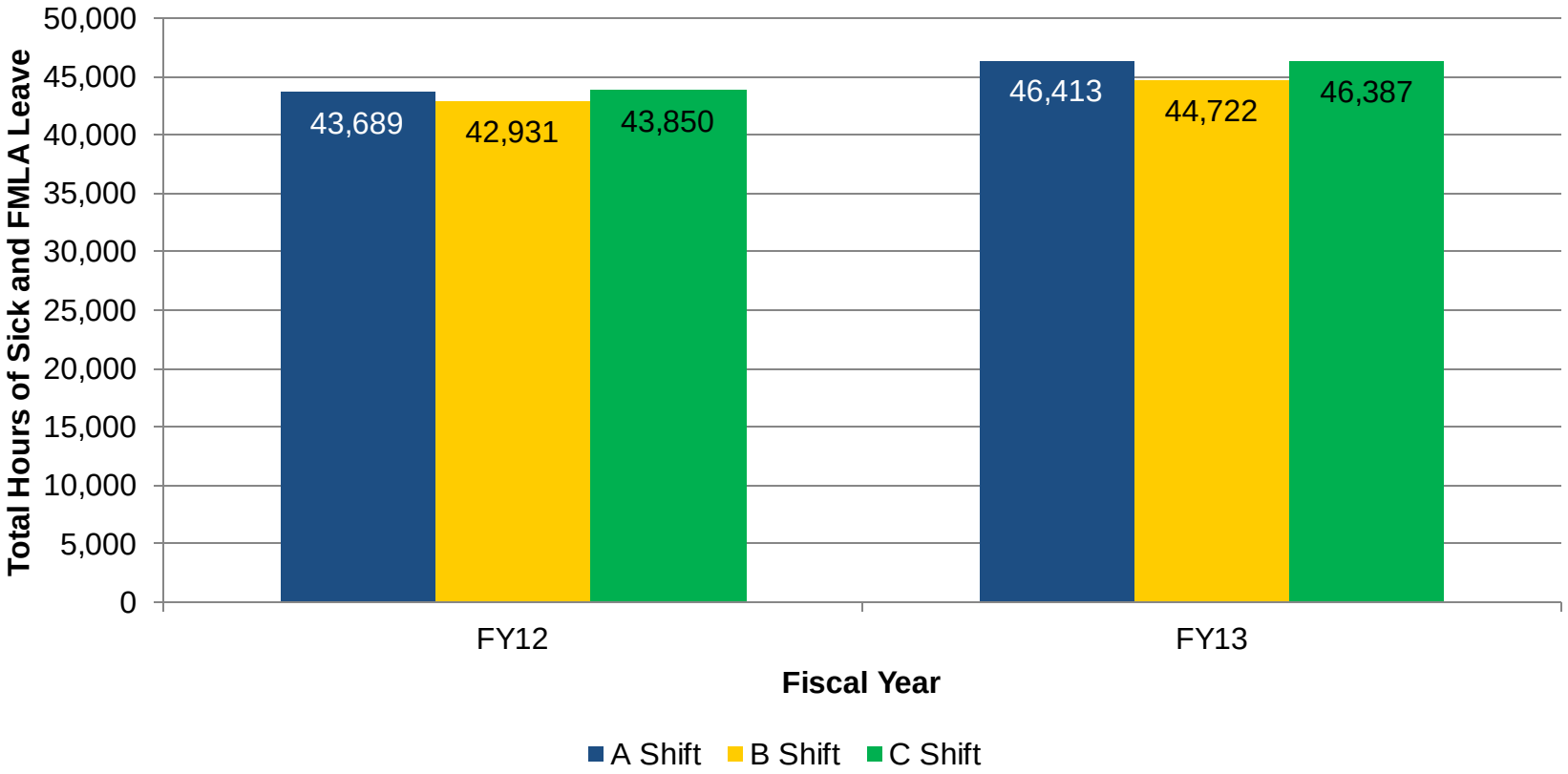
Overtime Worked by Shift



The variance in overtime worked between the three shifts was much greater in FY12 than in FY13. The largest difference in FY12 was 13,287 hours. The difference dropped to 8,443 hours in FY13. Total overtime hours worked in Operations also fell by 8% from FY12 to FY13. From June to September of 2012, MCFRS worked to rebalance staff between the three shifts.

Source: Telestaff. Chart includes regular overtime and upstaff overtime worked.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

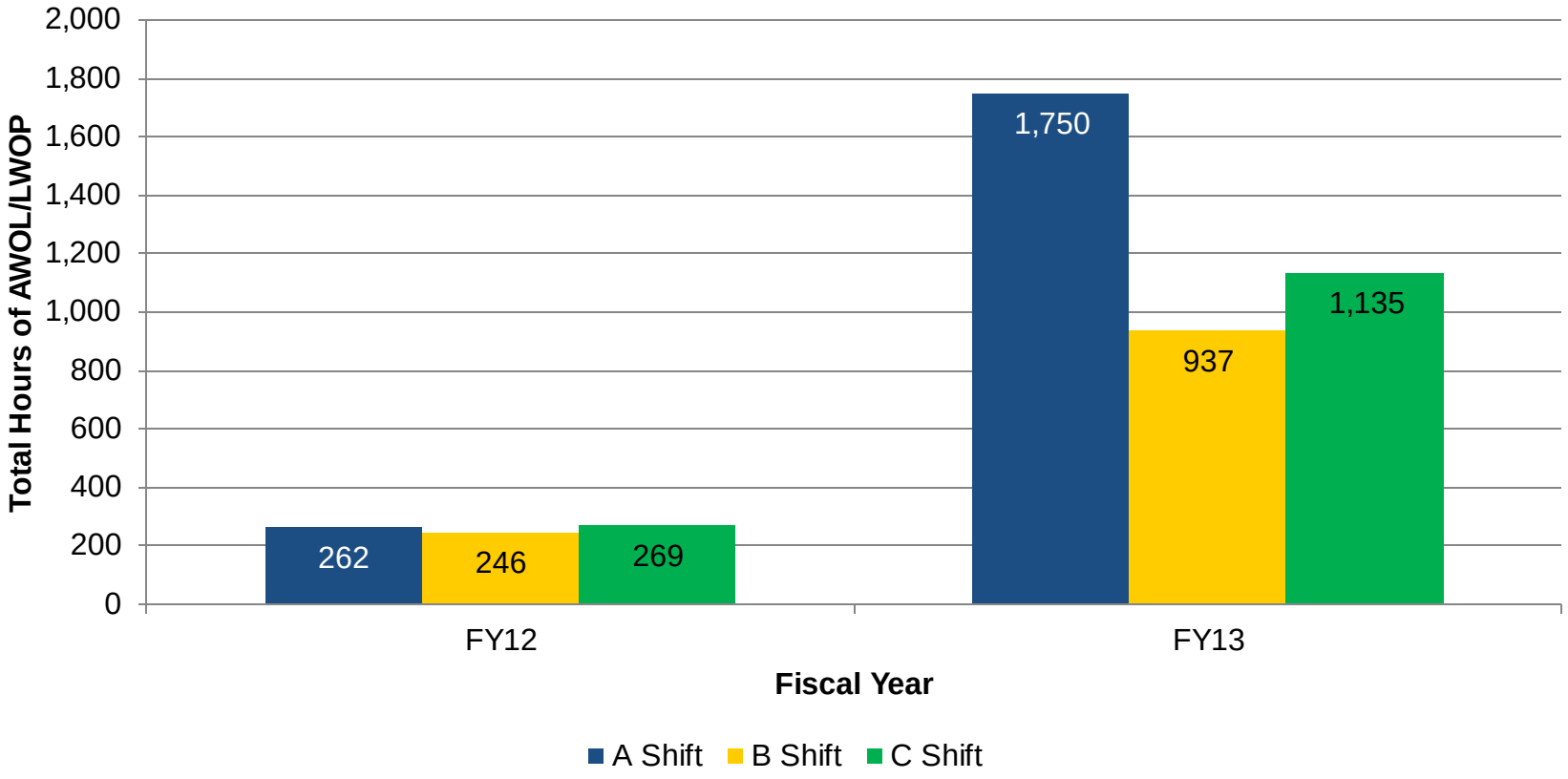
Sick* and FMLA Leave by Shift



The variance between the shifts increased from FY12 to FY13. The largest variances in FY12 and FY13 were 919 hours and 1,691 hours, respectively. Sick and FMLA use also increased by 5% from FY12 to FY13.

*Does not include parental leave
Source: Telestaff.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

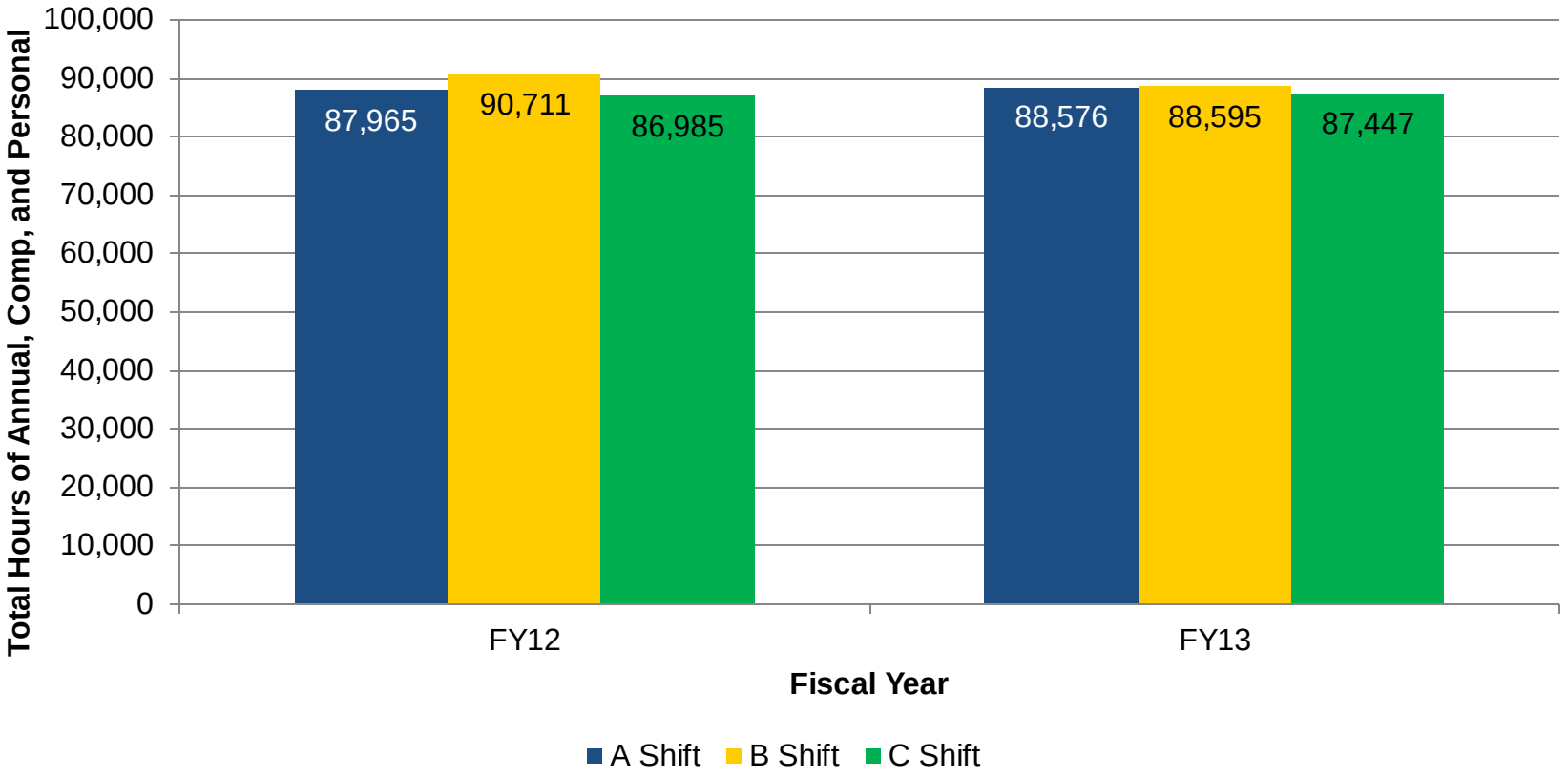
Leave without Pay (LWOP) and Absent without Leave (AWOL) Use by Shift



Use of AWOL/LWOP grew by 391% from FY12 to FY13. AWOL/LWOP use grew the most on A shift as it saw a 567% jump.

Source: Telestaff.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

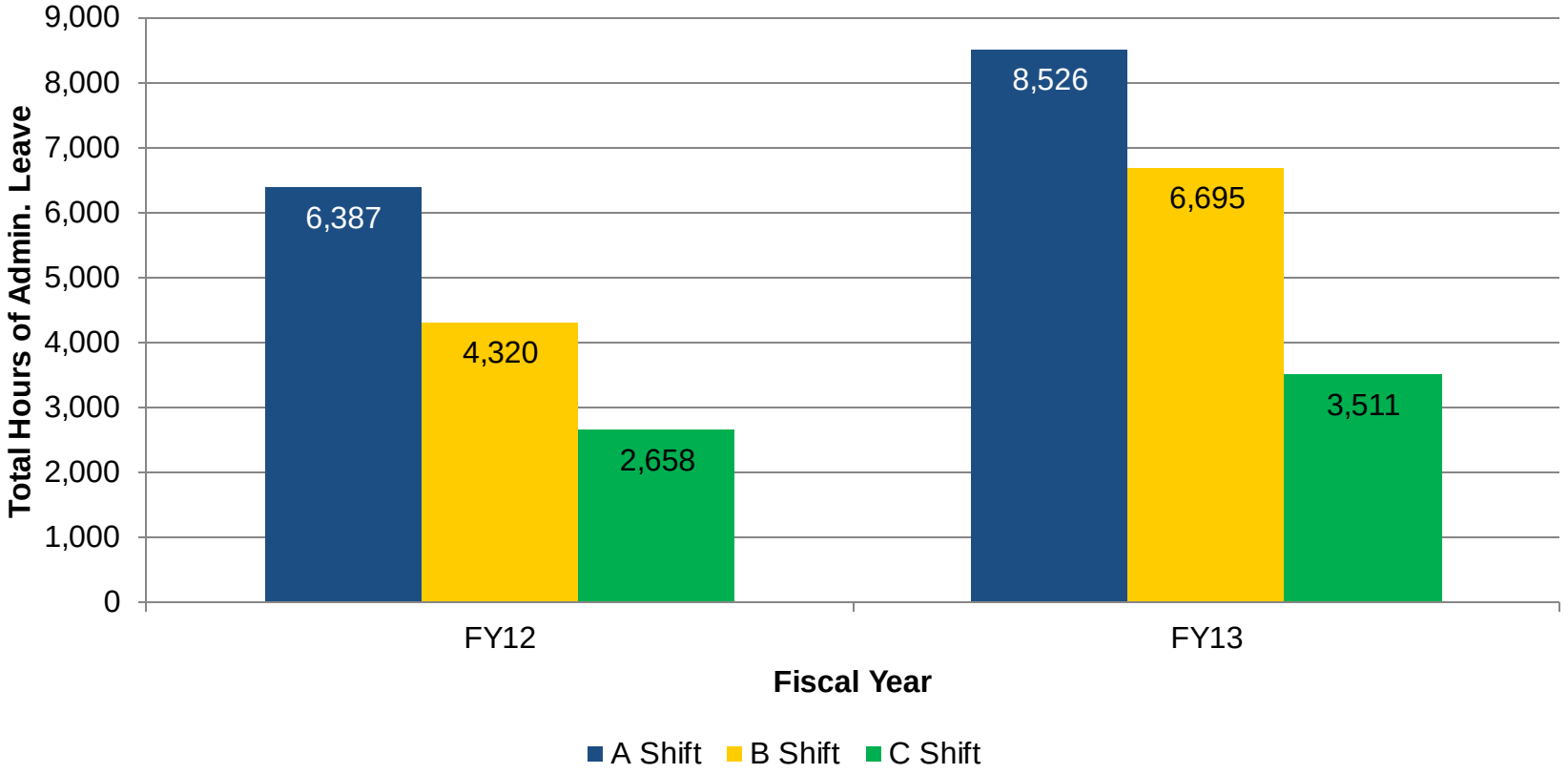
Annual, Compensatory, and Personal Leave Use by Shift



Use of vacation leave (annual, compensatory, and personal) remained fairly balanced between shifts each year. Overall use of vacation leave was consistent year-over-year.

Source: Telestaff.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

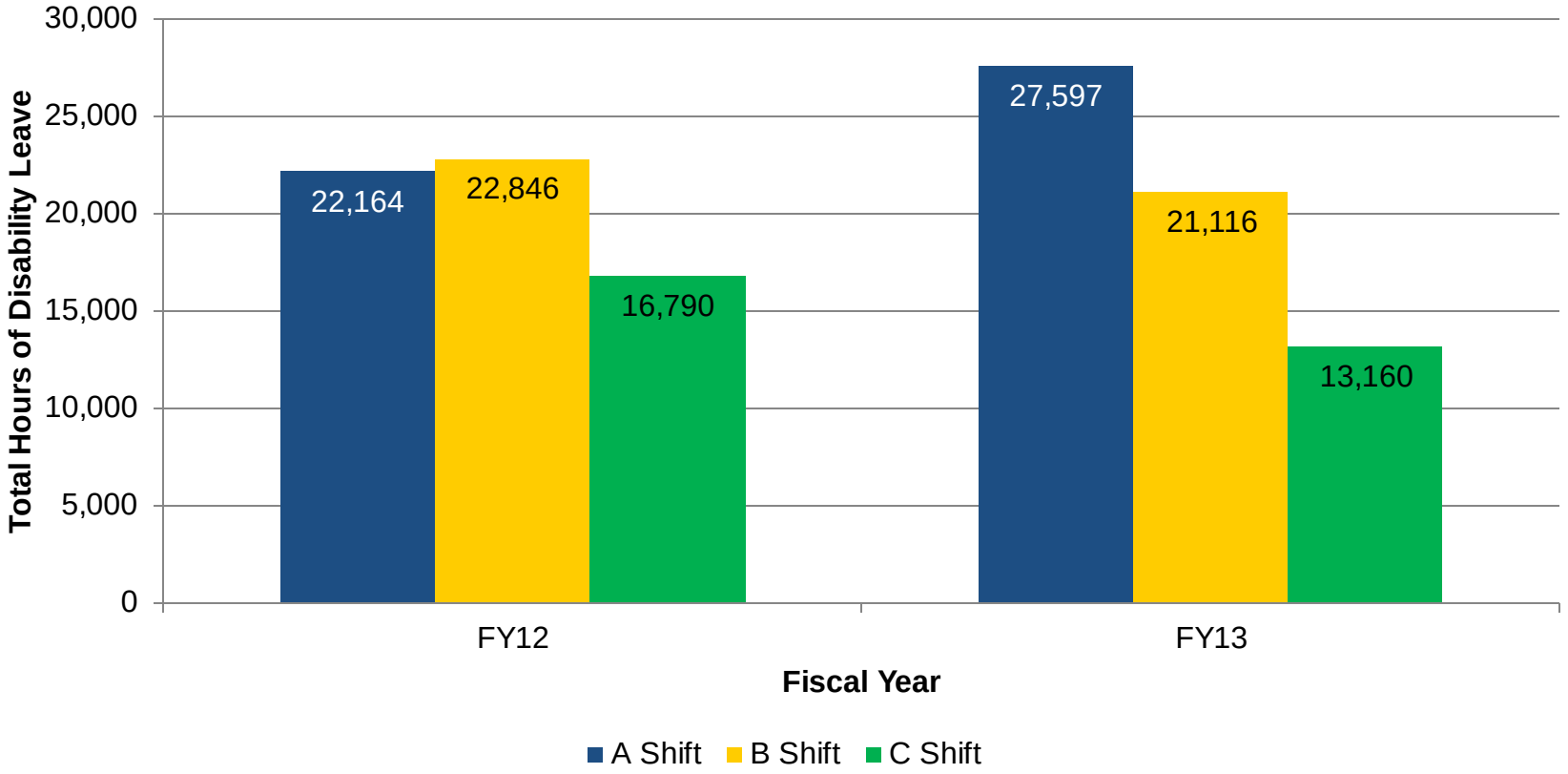
Use of Administrative Leave by Shift



Use of administrative leave increased by 40% from FY12 to FY13. In FY13, union negotiations accounted for 4,232 (23%) of all administrative leave. Use of the "IAFF – negotiation" and "AD4 – Union Business" administrative leave codes was highest by A shift. A shift used 55% of all union business hours and 47% of IAFF – negotiation hours.

Source: Telestaff.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

Disability Leave Use by Shift



Total use of disability leave was consistent year-to-year. F12 and FY13 used 61,800 hours and 61,873 hours, respectively.

Source: Telestaff.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

Sick and FMLA Use around County Holidays (1/2)

- **CountyStat examined sick and FMLA use 3 days before and after County holidays for FY12 and FY13 .**
  - Using 3 days before and after the holiday accounts for A, B, and C shifts.

- **The daily averages on the holiday and on either side of the holiday were compared against the yearly average to identify if sick and FMLA use were high or low.**
  - To determine if the difference was statistically significant, an unpaired t-test was utilized. The confidence interval was set at 95%.

- **Limitation: all holidays are treated equally for this examination. However, major holidays tend to draw more leave than minor holidays.**

Sick and FMLA Use around County Holidays (2/2)

Number of Days Before or After the Holiday	Average Daily Sick Leave Usage	Variance from Average Daily Sick Leave Use
3 Days Before Holiday	413 Hours	+45 Hours
2 Days Before Holiday	421 Hours	+53 Hours
1 Day Before Holiday	355 Hours	-13 Hours
Holiday	310 Hours	-58 Hours
1 Day After Holiday	354 Hours	-14 Hours
2 Days After Holiday	350 Hours	-18 Hours
3 Days After Holiday	313 Hours	-55 Hours
Daily Average for FY12-FY13	368 Hours	--

= Above Average Sick Leave Use at a Statistically Significant Level

= Below Average Sick Leave Use at a Statistically Significant Level

Sick and FMLA leave were highest 2 and 3 days before the holiday. Sick and FMLA use on the holiday itself was much lower than the daily average.

Source: Telestaff.
Only includes work in Operations: Battalions 1-5, EMS Duty and Duty Operations Chief

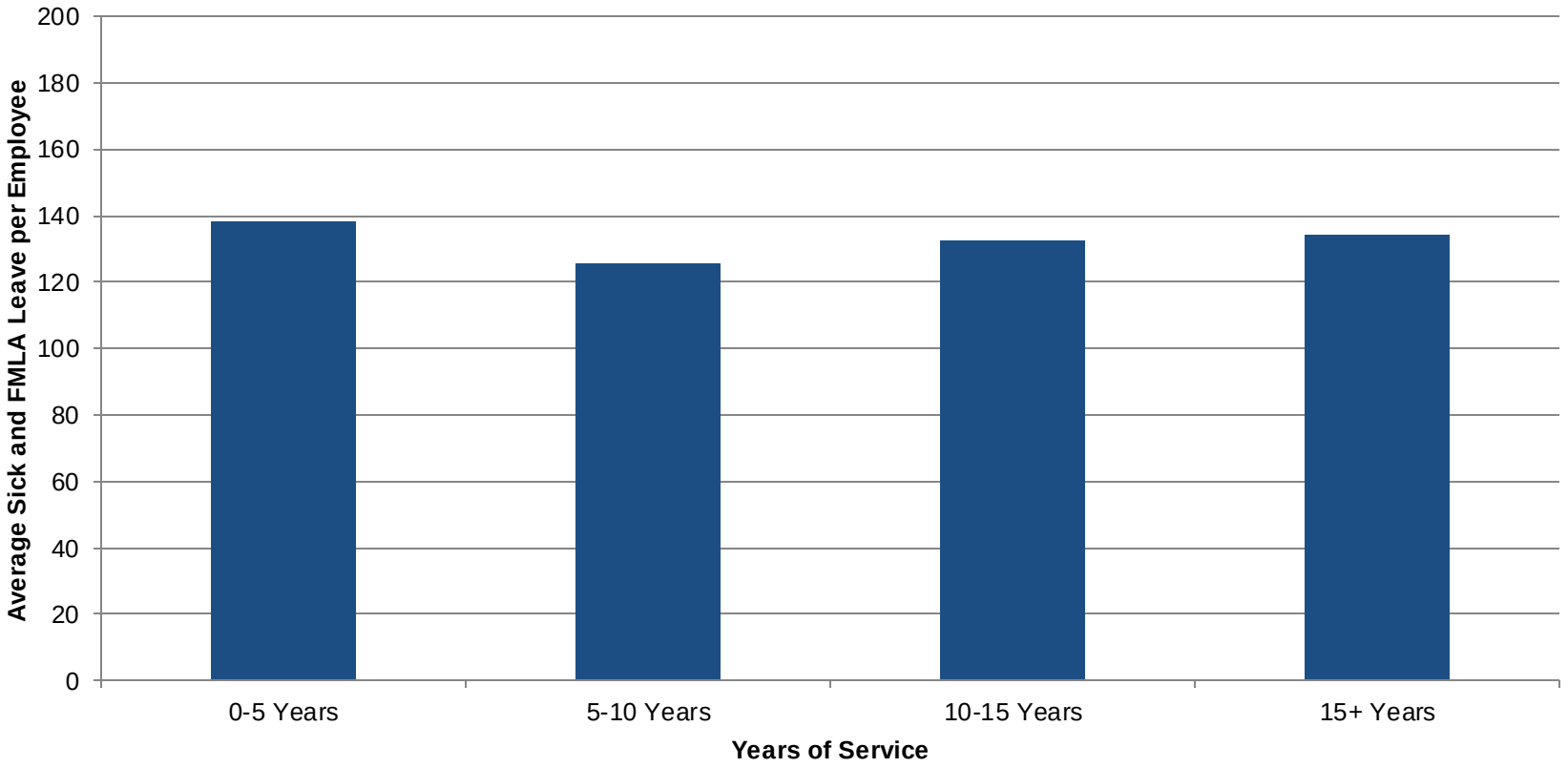
Relationship between Sick/FMLA Use and Years of Service

- **In the previous staffing study, sick leave patterns were found consistently across high and low uniformed ranks**
  - For example, sick leave use was higher than average on Saturdays for all uniformed personnel from Captains down to Firefighters I-III

- **Since many of the leave and overtime policies are based on seniority in FRS, CountyStat examined if these policies had an effect on how sick leave was used during a fiscal year**

- **The data presented in the next two slides are for FY's 12 & 13**
  - Sick and FMLA use is shown only for those employees that were in pay status at the beginning and the end of the fiscal year
  - The examination was limited to station staffing

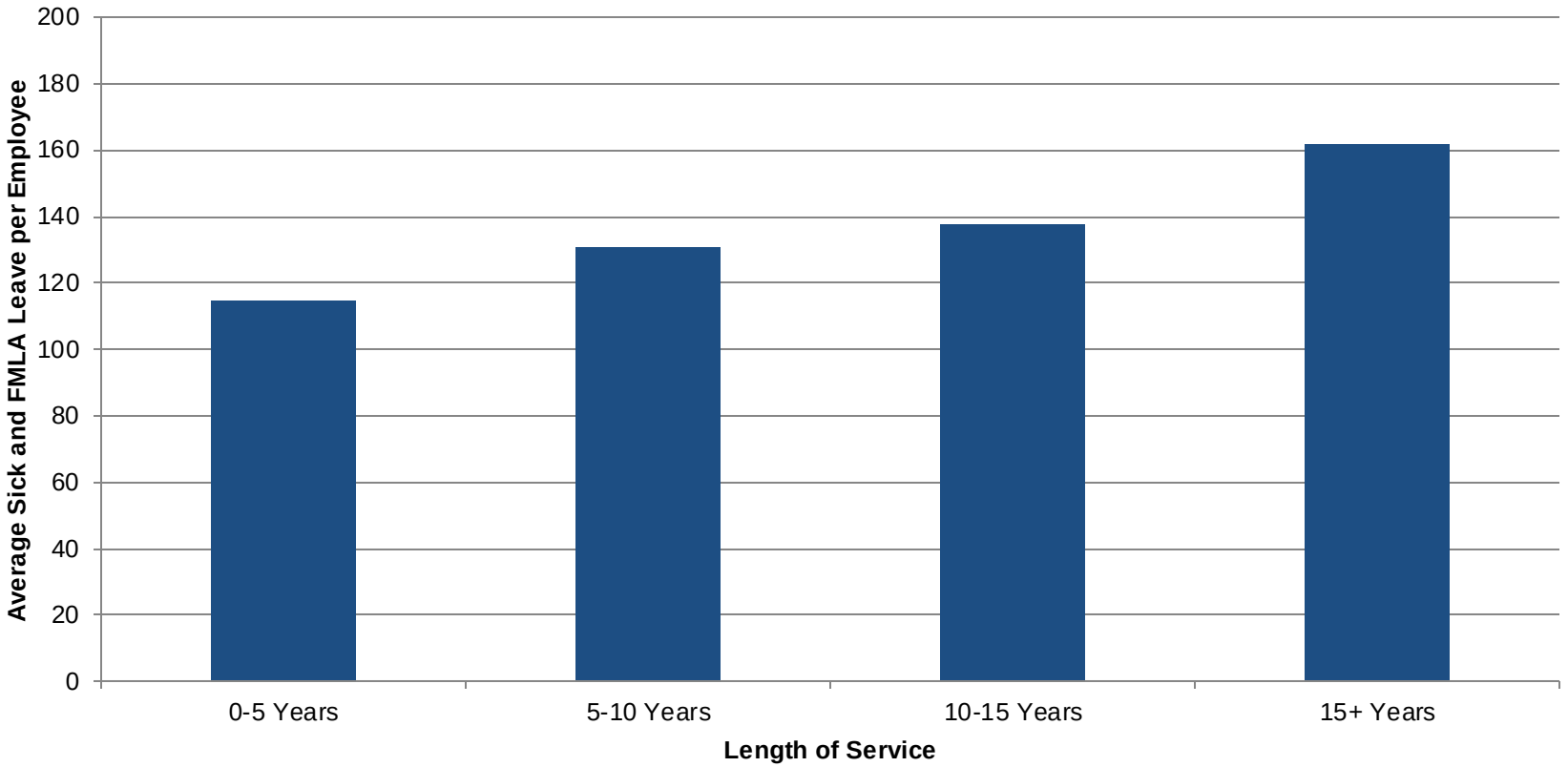
Sick and FMLA Use by Years of Service: FY12



For FY12, the relationship between length of service and sick/FMLA use was not statistically significant. Leave use was largely consistent across length of service.

Notes: Only includes employees that were in FRS for the entire fiscal year and worked in field operations.
Length of service was calculated at the end of the fiscal year.

Sick and FMLA Use by Years of Service: FY13



In FY13, the relationship between length of service and sick/FMLA use was statistically significant. Sick/FMLA use increased with length of service. The overall average hours of sick/FMLA leave also increased by 10 hours from FY12 to FY13 across all employees.

Notes: Only includes employees that were in FRS for the entire fiscal year and worked in field operations.
Length of service was calculated at the end of the fiscal year.

SUMMARY: Sick Leave Patterns in MCFRS

- **Sick leave use was highest, on average, on Saturdays across the uniformed ranks**
  - Sick leave use was also high on Fridays for Captains, Lieutenants, and Master FFs

- **Sick leave use peaked from May through September**

- **Sick leave use was more likely to be used 2 or 3 days prior to a county holiday. Leave was lower on the actual holiday.**

- **On average, sick leave did not vary significantly by length of service**

Part 4

HEADLINE PERFORMANCE MEASURES IN DETAIL

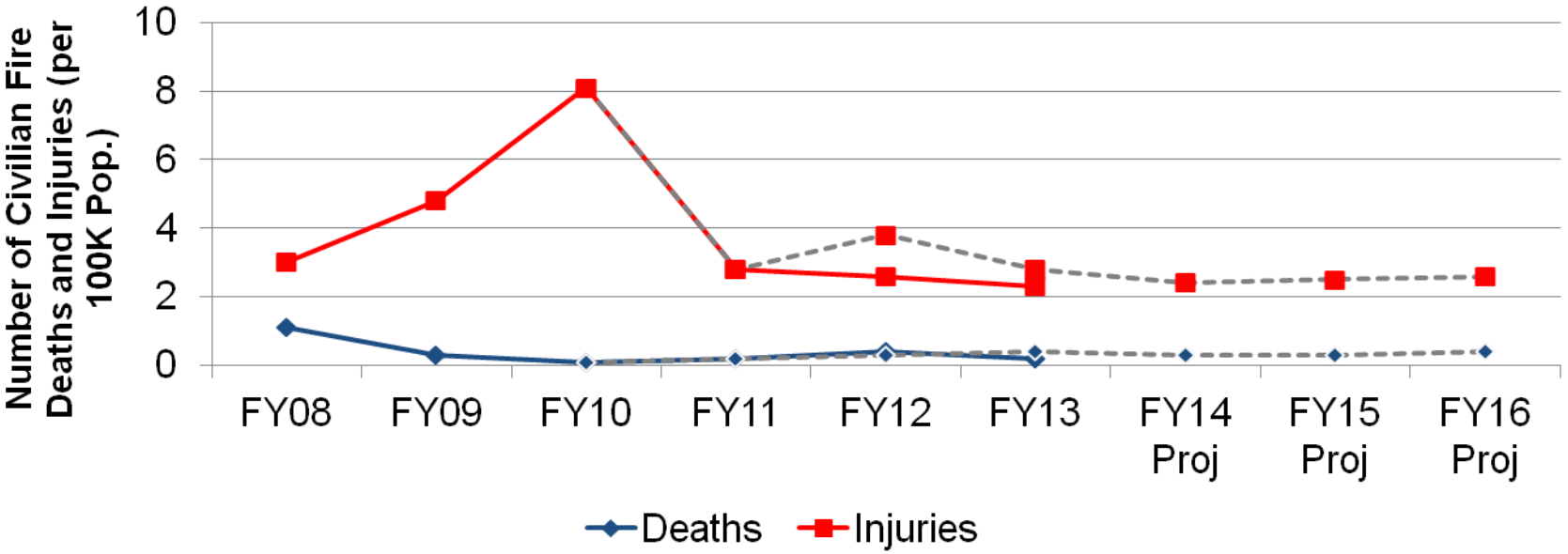
Overview of FY13 Headline Measure Performance (1/2)

Headline Measure	FY12	FY13	Change
1) Percent of residential structure fires confined to the room of origin	82%	78%	
2a) 90th Percentile For First Engine Arrival Time To Structure Fire (This means that 89% of first engine arrival times fall below this time): Metropolitan	--	8:20	NEW
2b) 90th Percentile For First Engine Arrival Time To Structure Fire (This means that 89% of first engine arrival times fall below this time): Urban	--	8:20	NEW
2c) 90th Percentile For First Engine Arrival Time To Structure Fire (This means that 89% of first engine arrival times fall below this time): Suburban	--	8:55	NEW
2d) 90th Percentile For First Engine Arrival Time To Structure Fire (This means that 89% of first engine arrival times fall below this time): Rural	--	11:10	NEW
3a) 90th Percentile For First Advanced Life Support Unit Arrival Time (This means that 89% of first ALS unit times fall below this time): Metropolitan	--	10:55	NEW
3b) 90th Percentile For First Advanced Life Support Unit Arrival Time (This means that 89% of first ALS unit times fall below this time): Urban	--	10:55	NEW
3c) 90th Percentile For First Advanced Life Support Unit Arrival Time (This means that 89% of first ALS unit times fall below this time): Suburban	--	11:45	NEW
3d) 90th Percentile For First Advanced Life Support Unit Arrival Time (This means that 89% of first ALS unit times fall below this time): Rural	--	12:20	NEW

Overview of FY13 Headline Measure Performance (2/2)

Headline Measure	FY12	FY13	Change
4) Number of residential fire deaths per 100,000 population	0.4	0.2	
5) Number of residential fire injuries per 100,000 population	2.6	2.3	
6) Emergency Medical Services - Cardiac care: Percentage of STEMI patients with door-to-balloon (D2B) time ≤ 90 minutes	93.7%	93.9%	
7) Percent of Commission on Fire Accreditation International (CFAI) Strategic Recommendations addressed	Accreditation was awarded for FY13. New cycle begins FY14		
8) Fire and injury prevention through community outreach	Under Construction		

Number of Civilian Residential Fire Deaths and Injuries per 100,000 Population (1/2)



	FY08	FY09	FY10	FY11	FY12	FY13	FY14 Projection	FY15 Projection	FY16 Projection
Deaths	1.1	0.3	0.1	0.2	0.4	0.2	0.3	0.3	0.4
Injuries	3.0	4.8	8.1	2.8	2.6	2.3	2.4	2.5	2.6

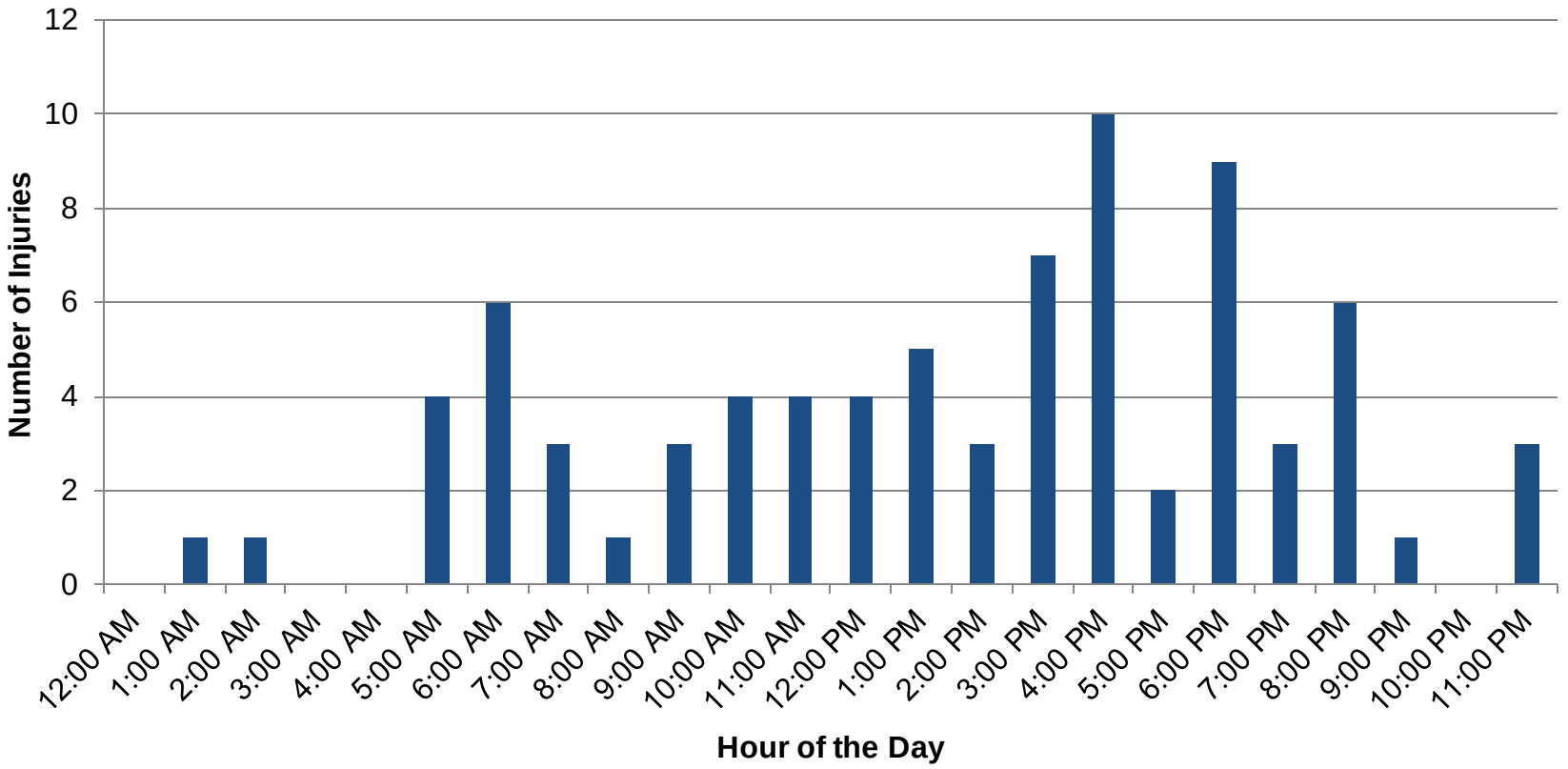
FY12 to FY13 Performance Change

Injuries and deaths in residential fires are down from FY12 to FY13. Injuries continue to decline from a peak in FY10.

Number of Civilian Residential Fire Deaths and Injuries per 100,000 Population (2/2)

- **Factors Contributing to Current Performance**
  - Community outreach emphasizing fire safety/prevention practices
  - Requirement for sprinkler systems in new residential construction
  - Free smoke alarms and batteries made available to families in need and installed by fire-rescue personnel
- **Factors Restricting Performance Improvement**
  - Occupant behavior resulting in fires
  - Occupant behavior during fires
  - Demographic factors – aging population, increased immigrant population
  - Careless use of smoking materials
  - Lack of functioning smoke alarms
  - Lack of sprinkler protection in legacy construction
  - Lightweight construction contributing to rapid fire growth/spread
- **Performance Improvement Plan**
  - Community outreach involving fire prevention and fire safety education targeting highest at-risk residents, including seniors, immigrants, and children
  - Continued implementation of recommendations of the Senior Citizens Fire Safety Task Force issued in their 2008 study/report
  - Implementation of new State law for smoke alarms having long-life, sealed-in batteries
  - Continued efforts to encourage sprinkler retrofitting of residential high-rises and garden apartments built before residential sprinkler systems were required by County Code
  - Hiring additional Community Outreach FTE to expand community outreach programs/events

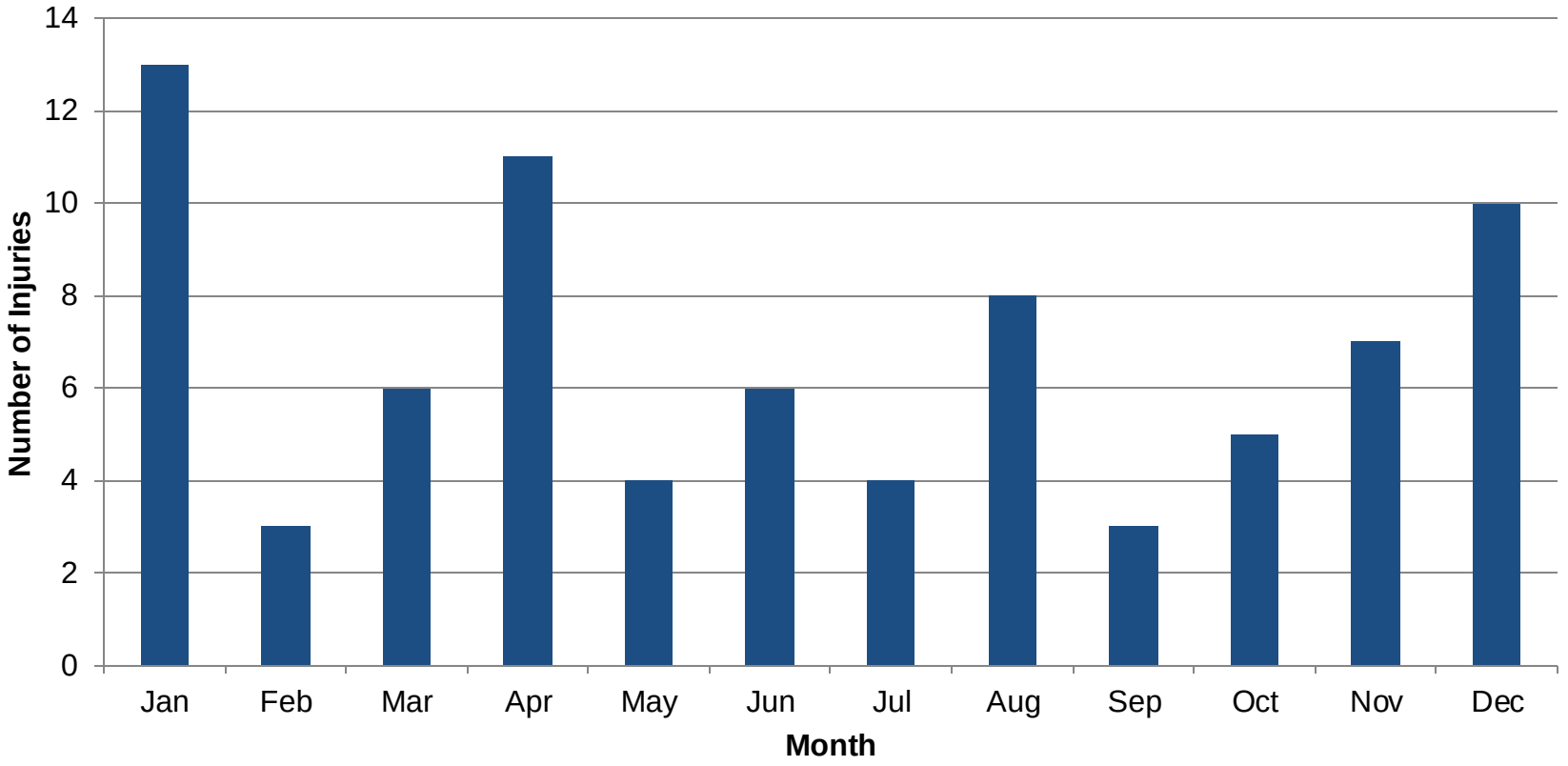
Injuries by Time of Day – FY13 and FY14



35% of all recorded fire injuries in Montgomery County occurred between 3PM and 6PM

Note: Injury totals are above what is shown on the performance measure as this data includes non-residential injuries.

Injuries by Time of Year – FY13 and FY14



37.5% of all fire injuries in FY13 and FY14 occurred in January, November, and December

Note: Injury totals are above what is shown on the performance measure as this data includes non-residential injuries.

FY13 and FY14 Injuries by Severity and Gender

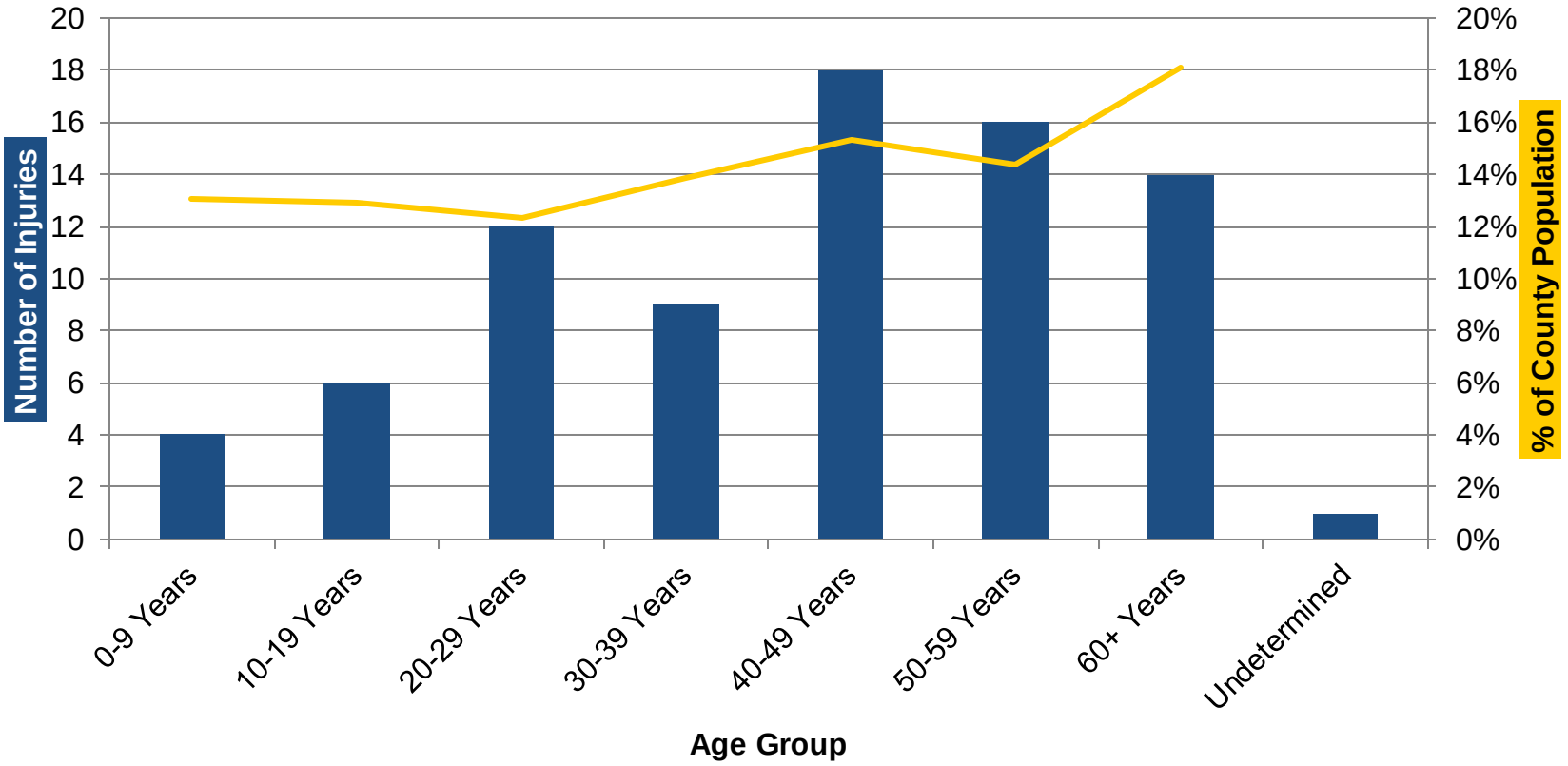
Severity	FY13	FY14	2-Year Total
Minor	19	31	50
Moderate	9	16	25
Severe	0	2	2
Undetermined	3	0	3
TOTAL	31	49	80

Gender	2-Year Total
Female	32
Male	48

For FY13 and FY14, only 2 severe injuries were recorded. 62.5% of all injuries were minor injuries. Of those minor injuries, 20 were related to thermal burns and 15 were due to smoke inhalation.
Males are slightly overrepresented in the number of fire injuries.

Note: Injury totals are above what is shown on the performance measure as this data includes non-residential injuries.

FY13 and FY14 Fire Injuries by Age



The ages 40-59 were slightly overrepresented in fire injuries as compared to the entire Montgomery County population. The 60+ age group, with 17.5% of all injuries, was close to its overall county representation of 18.1%.

Note: Injury totals are above what is shown on the performance measure as this data includes non-residential injuries.
Population estimates based off 2012 ACS 5-year estimates

Smoke Detector Presence and Injuries in Residence

Detector Present?	% of Injuries
Yes	78%
No	5%
Undetermined	17%

Detector Operation	% of Injuries
Operated	55%
Failed	19%
Fire too small to activate detector	13%
Undetermined	13%

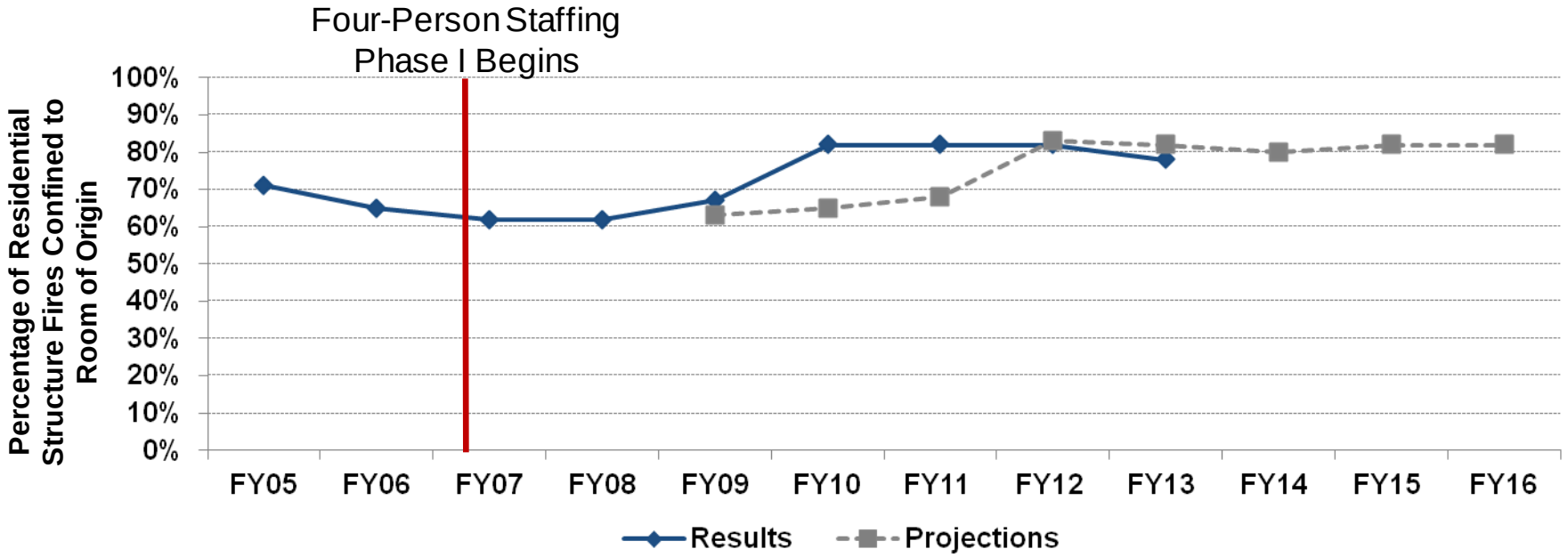
For those single and multi-family residences with a smoke detector present, the detector operated in the majority of fires that caused injuries.

Residential Injuries by Place in Home – FY13 and FY14

Area of Fire Origin	Number of Injuries
Cooking area, kitchen	31
Function areas, other	11
Bedroom	10
Multiple areas	4
Common room, den, family room, living room, lounge	2
Heating room or area, water heater area	2
Wall assembly, concealed wall space	2
Other	7

The plurality (44%) of injuries in single and multiple family dwellings occurred in the kitchen. Of those injuries in the kitchen, 7 were moderate and 1 was severe. 12 kitchen injuries were due to not actively watching the cooking equipment.

Percent of Residential Structure Fires Confined to the Room of Origin (1/2)



	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Results	71%	65%	62%	62%	67%	82%	82%	82%	78%			
Projections					63%	65%	68%	83%	82%	80%	82%	82%

FY12 to FY13 Performance Change

Residential structure fires contained to the room of origin has increased by 16 percentage points from FY07 to FY13. Performance has steadied around MCFRS' goal of 80% contained for the last four years.

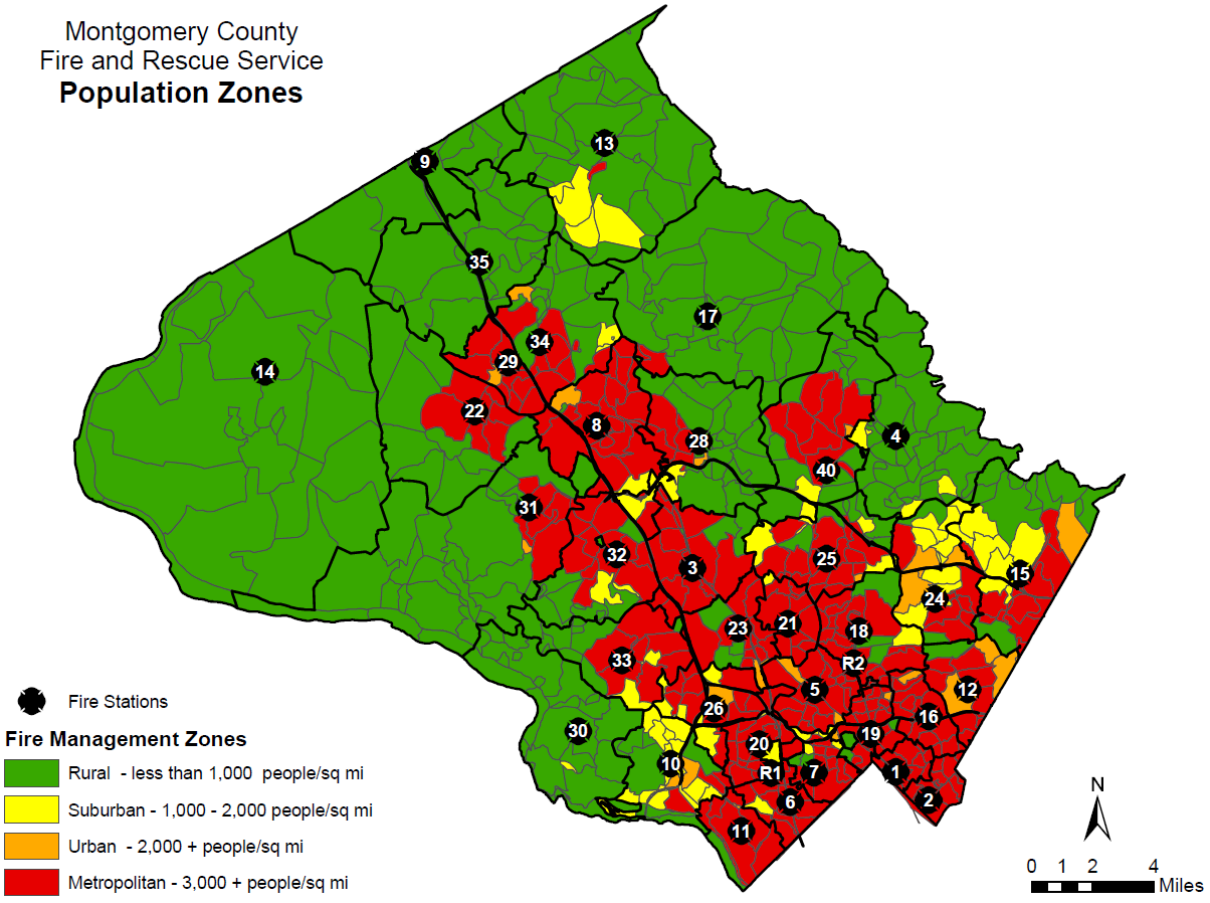
Percent of Residential Structure Fires Confined to the Room of Origin (2/2)

- **Factors Contributing to Current Performance**
  - Early fire detection and FD notification
  - Presence of residential sprinklers
  - Readily available and sufficient quantity of water for fire fighting
  - Four-person staffing on 24 of 34 engines during FY13
- **Factors Restricting Performance Improvement**
  - Unable to meet 6-minute response time benchmark goal in many cases, thus contributing to fire growth/spread beyond room of origin
  - Call processing times exceeding national standards
  - Lack of 4-person staffing on 30 primary suppression units
  - Need additional suppression resources to meet national standards
- **Performance Improvement Plan**
  - Reduce response time by: 1) implementing universal call-takers and new CAD and station alerting systems to improve call-processing/dispatch time, 2) improving turnout time
  - Continue implementation of 4-person staffing of engines, aerial units and rescue squads, beginning with Engines 704 (Sandy Spring), 709 (Hyattstown) and 713 (Damascus) during FY14.
  - Deploy 8th water tanker (former reserve tanker) at Damascus Station 13 during FY14.
  - Recognize high priority need for retrofitting unsprinklered residential high-rises.

MCFRS Call Types

Category 1	Category 2	Category 3	Description/Example
EMS	ALS	ALS1	Advanced Life Support incident requiring the response of one ALS provider (e.g., patient w/ decreased level of consciousness)
		ALS2	Advanced Life Support incident requiring the response of two ALS providers (e.g., patient in cardiac arrest)
	BLS	BLS	Basic Life Support incident (e.g., injured person from fall)
FIRE	FIRE	FULL ASSIGNMENT	Fire with full apparatus response based on level of risk (e.g., single-family house fire w/dispatch of 5 engines, 2 aerial units, rescue squad, EMS unit, and 2 command officers)
		HAZMAT	Incident involving hazardous materials (e.g., leaking railroad tank car)
		NON FULL ASSIGNMENT	Fire incident with adaptive response (e.g., dumpster fire w/dispatch of one engine)
		RESCUE	Rescue from water, confined space, building collapse, trench, rock face, rough trail, utility pole, scaffolding, etc. (e.g., occupied auto stranded in rising flood waters)
Non-Fire/ EMS (Other)	OTHER	SERVICE CALL	Emergency or non-emergency call for service not covered under other categories above (e.g., downed wires with no fire present; broken pipe flooding basement)

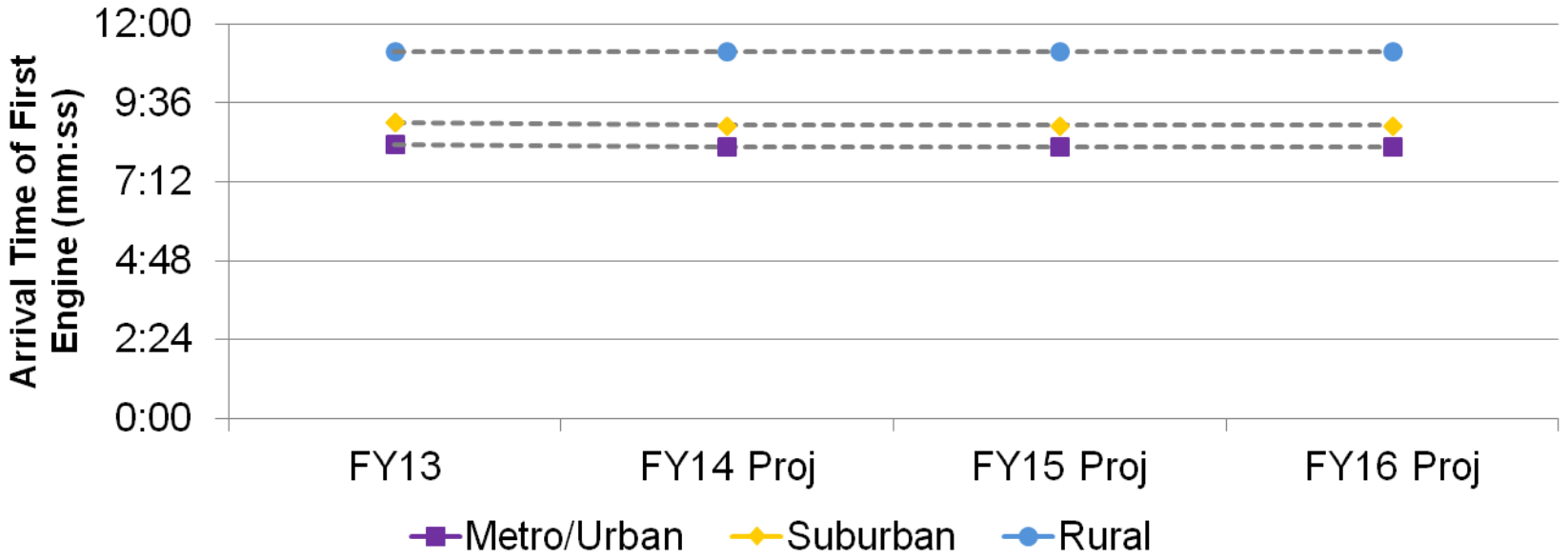
MCFRS Regional Zones



As part of MCFRS's accreditation, the department has created response time goals based on population density. Montgomery County has four population density zones ranging from Metropolitan (urban, downtown areas) to Rural (agricultural reserve).

Map courtesy of MCFRS

90th Percentile Arrival Time For First Engine To Structure Fire (1/2)



	Baseline Goal at 90th %tile (min:sec)	FY13	FY14 Projection	FY15 Projection	FY16 Projection
Metro/ Urban	9:00	8:20	8:15	8:15	8:15
Suburban	10:30	9:00	8:55	8:55	8:55
Rural	15:00	11:10	11:10	11:10	11:10

FY12 to FY13 Performance Change

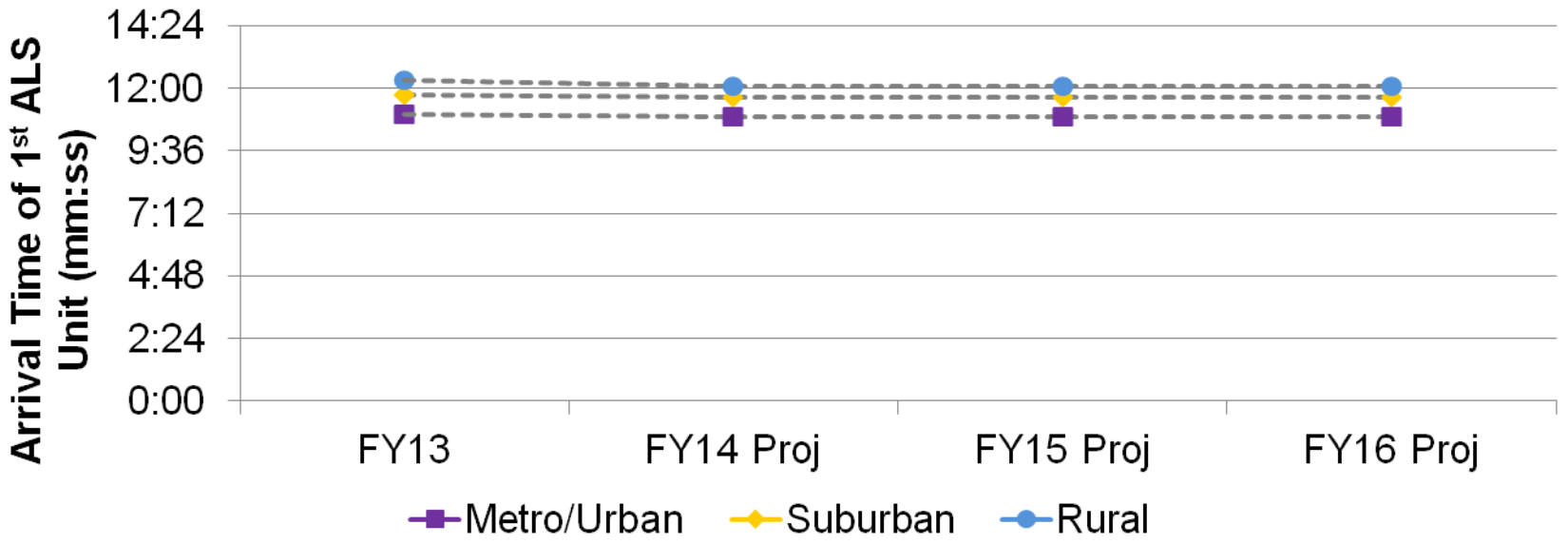
NEW

MCFRS has moved to reporting arrival times at the 90th percentile to align reporting with new accreditation standards.

90th Percentile Arrival Time For First Engine To Structure Fire (2/2)

- **Factors Contributing to Current Performance**
  - Station distribution within urbanized areas
  - Continued implementation of four-person staffing on frontline engines
- **Factors Restricting Performance Improvement**
  - Call processing times exceeding standards
  - Travel time impacted by weather, traffic, and/or traffic-calming devices
  - Lack of four-person ALS staffing on 30 primary suppression units
  - Need additional suppression resources to meet national standards
  - ISO has recommended 17 additional fire stations in urbanized areas of the County
- **Performance Improvement Plan**
  - Reduce response time by: 1) implementing universal call-takers and new CAD and station alerting systems to improve call-processing/dispatch time, 2) improving turnout time
  - Reduction in travel time through strategically placed stations/resources and, whenever practicable, use of response routes lacking traffic-calming devices
  - Continue implementation of 4-person staffing of engines, beginning with Engines 704 (Sandy Spring), 709 (Hyattstown) and 713 (Damascus) during FY14.
  - Use of technology that automatically records when a unit departs its station and arrives at incident

90th Percentile Arrival Time for First Advanced Life Support Unit (1/2)



	Baseline Goal at 90th %tile (min:sec)	FY13	FY14 Projection	FY15 Projection	FY16 Projection
Metro/ Urban	11:00	11:00	10:55	10:55	10:55
Suburban	12:30	11:45	11:40	11:40	11:40
Rural	16:00	12:20	12:05	12:05	12:05

FY12 to FY13 Performance Change

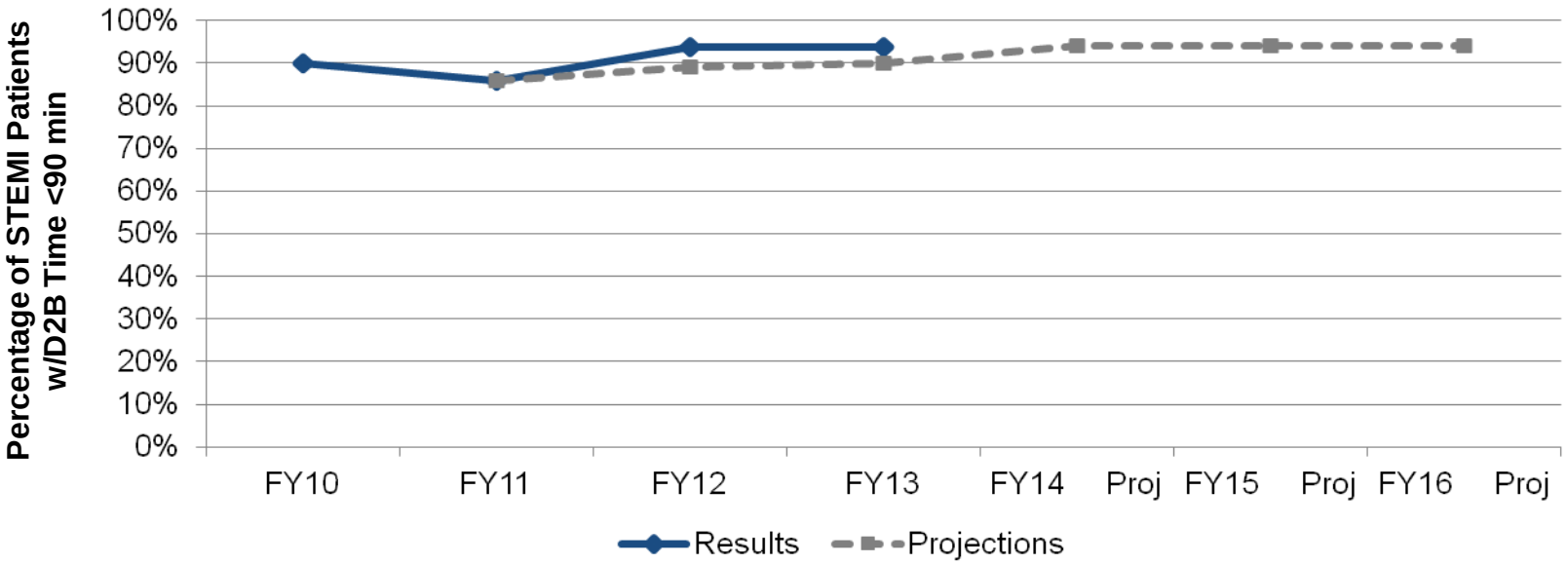
NEW

MCFRS has moved to reporting arrival times at the 90th percentile to align reporting with new accreditation standards.

90th Percentile Arrival Time for First Advanced Life Support Unit (2/2)

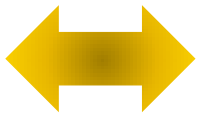
- **Factors Contributing to Current Performance**
  - Station distribution within urbanized areas
  - 24 of 34 engines in FY13 were 4-person paramedic engines; 3 of 34 engines in FY13 were 3-person paramedic engines
  - Continued implementation of four-person ALS staffing on engines
  - New roads, such as the ICC, offering more routes of travel that help to improve response time
- **Factors Restricting Performance Improvement**
  - Call processing times exceeding national standards
  - Travel time impacted by weather, traffic, and/or traffic-calming devices
  - Lack of 4-person ALS staffing on 30 primary suppression units
  - Lack of peak-demand ALS resources in high call load areas
- **Performance Improvement Plan**
  - Reduce response time by: 1) implementing universal call-takers and new CAD, station alerting, and EMS call-taking protocol systems to improve call-processing/dispatch time, 2) improving turnout time
  - Reduction in travel time through strategically placed stations/resources and, whenever practicable, use of response routes lacking traffic-calming devices
  - Continue implementation of 4-person ALS staffing of engines during FY14
  - Deploying additional BLS units to reduce the number of BLS incident responses by ALS units
  - Use of technology that automatically records when a unit departs its station and arrives at incident

Percentage of STEMI Patients with Door to Balloon Time <90 min (1/2)



	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Results	90.0%	85.9%	93.7%	93.9%			
Projections		85.9%	89%	90%	94%	94%	94%

FY12 to FY13 Performance Change



The percentage of STEMI patients with D2B time at 90 minutes or less remained consistent from FY12 to FY13.

Percentage of STEMI Patients with Door to Balloon Time <90 min (2/2)

- **Factors Contributing to Current Performance**
  - Emergency Medical Dispatch (EMD) protocol required by State
  - Rapid ALS care and transport
  - Use of 12-lead EKG monitors
  - Use of Lifenet© system to transmit first diagnostic EKG directly to the hospital to activate STEMI response system
  - Four catheterization labs in the County
  - Use of Electronic Patient Care Report
- **Factors Restricting Performance Improvement**
  - Behavior of individuals – ignoring the signs of a cardiac event; hesitating to call 9-1-1
  - Demographic factors – age, race/ethnicity, gender
  - Patient stability
- **Performance Improvement Plan**
  - Community outreach – educating the public on recognition of a cardiac event occurring; partnering with the Health Department to encourage cardiac-healthy lifestyles of County residents
  - Training of new ALS providers in basic 12-lead EKG recognition
  - Continued education for existing ALS providers in advanced 12-lead EKG recognition
  - Tracking EMS-to-balloon (E2B) time - vs. door-to-balloon (D2B) time - to better capture the EMS component of the joint EMS/hospital STEMI response system. E2B tracking is made possible through use of Lifenet©.

Percentage of Accreditation Related Strategic Recommendations Addressed (1/2)

	FY11	FY12	FY13	FY14	FY15	FY16
Results	N/A	N/A	N/A			
Projections	N/A	N/A	N/A	96.3% (79 of 82)	97.6% (80 of 82)	98.8% (81 of 82)

FY12 to FY13 Performance Change

MCFRS was re-accredited by CFAI in August 2013 for 5 years (FY14-FY18).

Percentage of Accreditation Related Strategic Recommendations Addressed (2/2)

- **Factors Contributing to Current Performance**
  - Leadership and oversight provided by the Accreditation Manager assigned to this grant funded position during FY12-13 was instrumental in MCFRS attaining this high-level achievement.
- **Factors Restricting Performance Improvement**
  - Part-time Accreditation Manager position during FY14 and possibly future years
  - No dedicated FTE assigned solely to accreditation maintenance actions
  - Lack of planning, data analysis, and administrative FTE to adequately address accreditation maintenance requirements
  - Personnel working on accreditation requirements as a collateral duty
  - Lack of technical writing expertise in FRS
- **Performance Improvement Plan**
  - Work on accreditation compliance/maintenance during the 5-year accreditation cycle (FY14-18) leading to the next re-accreditation assessment in FY18-Quarter 4. Each year, unmet core competencies will be addressed until all have been met
  - Prepare required Annual Compliance Report and submit to CFAI by July 15, 2014-2017. [ACR not required in 2018 – year of next peer assessment.]
  - Secure a FTE to serve as the dedicated Accreditation Manager
  - Secure FTEs to address planning, data analysis, and administrative needs of accreditation compliance
  - Through training, improve technical writing skills of personnel assigned accreditation responsibilities

Overview of MCFRS Prevention Outreach Data Collection

Home Visit Outreach

	FY10	FY11	FY12	FY13	% Change FY12-FY13
Home Visits	11,397	2,859	4,828	13,759	+185%
Smoke Alarms Installed	315	122	157	326	+108%
Batteries Installed	315	97	160	333	+108%

Web-Based Outreach

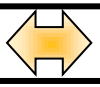
	FY09	FY10	FY11	FY12	FY13	% Change FY12-FY13
Twitter Followers	274	488	938	1,400	6,293	+350%
MCFRS Blog Visits	3,263	8,798	27,527	20,504	26,127	+27%
Facebook Likes	1,019	1,396	1,383	700	1,387	+98%
MCFRS Blog Posts	50	106	178	207	241	+16%
MCFRS YouTube Views	2,258	2,607	3,032	2,116	3,032	+43%
Scribd Views	n/a	n/a	n/a	8,368	12,752	+52%

MCFRS's outreach in homes and online have increased significantly from FY12 to FY13.

Part 5

RESPONSIVE AND SUSTAINABLE LEADERSHIP

Overview of Responsive and Sustainable Leadership

Area	Measure	FY12	FY13	Change
Effective and Productive Use of the Workforce/ Resources	Average overtime hours worked by all full-time, non-seasonal employees	12.98	11.95	
	Workforce availability for all full-time, non-seasonal employees	78.0%	77.6%	
Internal Control and Risk Management	Fully implemented audit report recommendations since issuance of the audit report	No Audit	0% (0 of 1)	N/A
	Number of work-related injuries	541	543	
Succession Planning	Percent of identified key position/ functions have developed and implemented long-term succession planning	N/A	22%	
Mandatory Employee Training	% of department's employees that have fulfilled mandatory County/ State/Federal training requirements	N/A*	N/A*	N/A*
MFD Procurement	% of dollars awarded to MFD firms	3.12%	2.96%	
Environmental Stewardship	Print and mail expenditures	$114,031	$226,740	
	Paper purchased	2,382,250	2,393,550	

*MCFRS did not provide data on the percentage of employees that have completed mandatory training.

Wrap-Up

- **Follow-Up Items**