



Six Sigma DMAIC Improvement Story

Black Belt Project Objective:
To Reduce the Time to Release Appropriate Defendants from Jail

Last Updated: 1-30-14

Team: ***The Justice League***

Amy Horton-Tavera (Team Leader)

Bill Busutil Mayra Morales Hamilton Davies Nessa Manten

Yvonne O'Caná Marie Jo Toussaint

Ray Scher, Chet Zerlin (Sponsors)



Identify Project Charter

The team developed a team Project Charter.

1. 2.

Project Charter	
Business Case	Project Name: To Reduce the Time to Release Appropriate Defendants from Jail
	Problem/Impact: Defendants who could potentially be released earlier remain in jail too long, increasing costs for Miami-Dade County Corrections
	Expected Benefits: Improvement will result in reduced costs and expedited justice
Objectives	Outcome Indicator(s) Q1- Avg # of Days from Booking to Release
	Proposed Target(s) Target = 22 days (overall inmate length of stay)
	Time Frame: July 2013 through December 2013
	Strategic Alignment: Supports the County's Strategic Plan
Scope	In Scope: Defendants who could potentially be released from jail
	Out-of-Scope: Defendants who should remain in jail due to public safety issues
	Authorized by: Jennifer Moon and Chet Zerlin
Team	Sponsor: Ray Scher and Chet Zerlin
	Team Leader: Amy Horton-Tavera
	Team Members: Bill Busutil, Mayra Morales, Hamilton Davies, Nessa Manten, Yvonne O'Caná, Marie Jo Toussaint
	Process Owner(s): Chet Zerlin
	Mgmt Review Team: Jennifer Moon
Schedule	Completion Date: 31-Dec-13
	Review Dates: Monthly and Final Review in December 2013
	Key Milestone Dates: See Action Plan

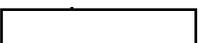


Develop Project Timeline Plan

The team developed a timeline plan to complete the Project. 4. 

Legend:	
	= Actual
	= Proposed

WHAT: Complete DMAIC Story Project by December 31, 2013

DMAIC Story Process Step	WHEN					
	2013					
	July	August	September	October	November	December
1. Define	 					
2. Measure		 				
3. Analyze			 			
4. Improve				 on going →		
5. Control					 on going →	



Monitor Team Progress

The Team and Management used a Checklist to monitor team progress.

DMAIC Story Checkpoints			
PLAN	Step 1 Define	Objective: Demonstrate the importance of improvement needs in measurable terms.	
		1. The stakeholders' need(s) were identified. ✓	
		2. The problem can be described as an "object" with a "defect" with unknown cause(s) that need to be identified. ✓	
		3. A line graph outcome indicator was constructed that appropriately measures the problem (or gap). ✓	
	Step 2 Measure	Objective: Investigate the features of the indicator, stratify the problem and set a target for improvement.	
		4. A schedule for completing the five DMAIC Story steps was developed. ✓	
		5. Data contained or directly linked to the indicator were stratified from various viewpoints (i.e., what, where, when and who) and a significant dataset was chosen. ✓	
		6. A target for improvement was established based on the stakeholders' need. ✓	
	Step 3 Analyze	Objective: Analyze the stratified data to identify and verify the root causes.	
		7. The impact of the target on the indicator was determined. ✓	
		8. A problem statement that describes the "remaining dataset" was developed. ✓	
		9. Cause and effect analysis was taken to the root level. ✓	
DO	Step 4 Improve	Objective: Develop and implement countermeasures to eliminate the verified root causes of the problem.	
		10. Potential causes most likely to have the greatest impact on the problem were selected. ✓	
		11. A relationship between the root causes and the problem was verified with data. ✓	
		12. The impact of each root cause on the gap was determined. ✓	
	Step 5 Control	Objective: Confirm that the countermeasures taken impacted the root causes and the problem; and that the target has been met.	
		13. Countermeasures were selected to address verified root causes. ✓	
		14. The method for selecting the appropriate countermeasures was clear and considered effectiveness and feasibility. ✓	
		15. Barriers and aids were determined for countermeasures worth implementing. ✓	
	CHECK	Step 1 Define	Objective: Demonstrate the importance of improvement needs in measurable terms.
			16. The action plan reflected accountability and schedule. ✓
			17. The effect of countermeasures on the root causes was demonstrated. ✓
			18. The effect of countermeasures on the problem (or indicator) was demonstrated. ✓
Step 2 Measure		Objective: Investigate the features of the indicator, stratify the problem and set a target for improvement.	
		19. The improvement target was achieved and causes of significant variation were addressed. ✓	
		20. The effect of countermeasures on the indicator representing the stakeholders' need was demonstrated. ✓	
		21. A method was established to document, permanently change, and communicate the revised process or standard. ✓	
Step 3 Analyze		Objective: Analyze the stratified data to identify and verify the root causes.	
		22. Responsibility was assigned and periodic checks scheduled to ensure compliance with the revised process or standard. ✓	
		23. Specific areas for replication were identified. ✓	
		24. Any remaining problems (or gaps) were addressed. ✓	
Step 4 Improve	Objective: Develop and implement countermeasures to eliminate the verified root causes of the problem.		
	25. Lessons learned, P-D-C-A of the Story process, & team growth were assessed & documented. ✓		
	26. Any remaining problems (or gaps) were addressed. ✓		
	27. Lessons learned, P-D-C-A of the Story process, & team growth were assessed & documented. ✓		
ACT	Step 1 Define	Objective: Demonstrate the importance of improvement needs in measurable terms.	
		28. Any remaining problems (or gaps) were addressed. ✓	
		29. Lessons learned, P-D-C-A of the Story process, & team growth were assessed & documented. ✓	
		30. Any remaining problems (or gaps) were addressed. ✓	
	Step 2 Measure	Objective: Investigate the features of the indicator, stratify the problem and set a target for improvement.	
		31. A method was established to document, permanently change, and communicate the revised process or standard. ✓	
		32. Responsibility was assigned and periodic checks scheduled to ensure compliance with the revised process or standard. ✓	
		33. Specific areas for replication were identified. ✓	
	Step 3 Analyze	Objective: Analyze the stratified data to identify and verify the root causes.	
		34. Any remaining problems (or gaps) were addressed. ✓	
		35. Lessons learned, P-D-C-A of the Story process, & team growth were assessed & documented. ✓	
		36. Any remaining problems (or gaps) were addressed. ✓	
Step 4 Improve	Objective: Develop and implement countermeasures to eliminate the verified root causes of the problem.		
	37. A method was established to document, permanently change, and communicate the revised process or standard. ✓		
	38. Responsibility was assigned and periodic checks scheduled to ensure compliance with the revised process or standard. ✓		
	39. Specific areas for replication were identified. ✓		
Step 5 Control	Objective: Confirm that the countermeasures taken impacted the root causes and the problem; and that the target has been met.		
	40. Any remaining problems (or gaps) were addressed. ✓		
	41. Lessons learned, P-D-C-A of the Story process, & team growth were assessed & documented. ✓		
	42. Any remaining problems (or gaps) were addressed. ✓		



Review Criminal Justice Process

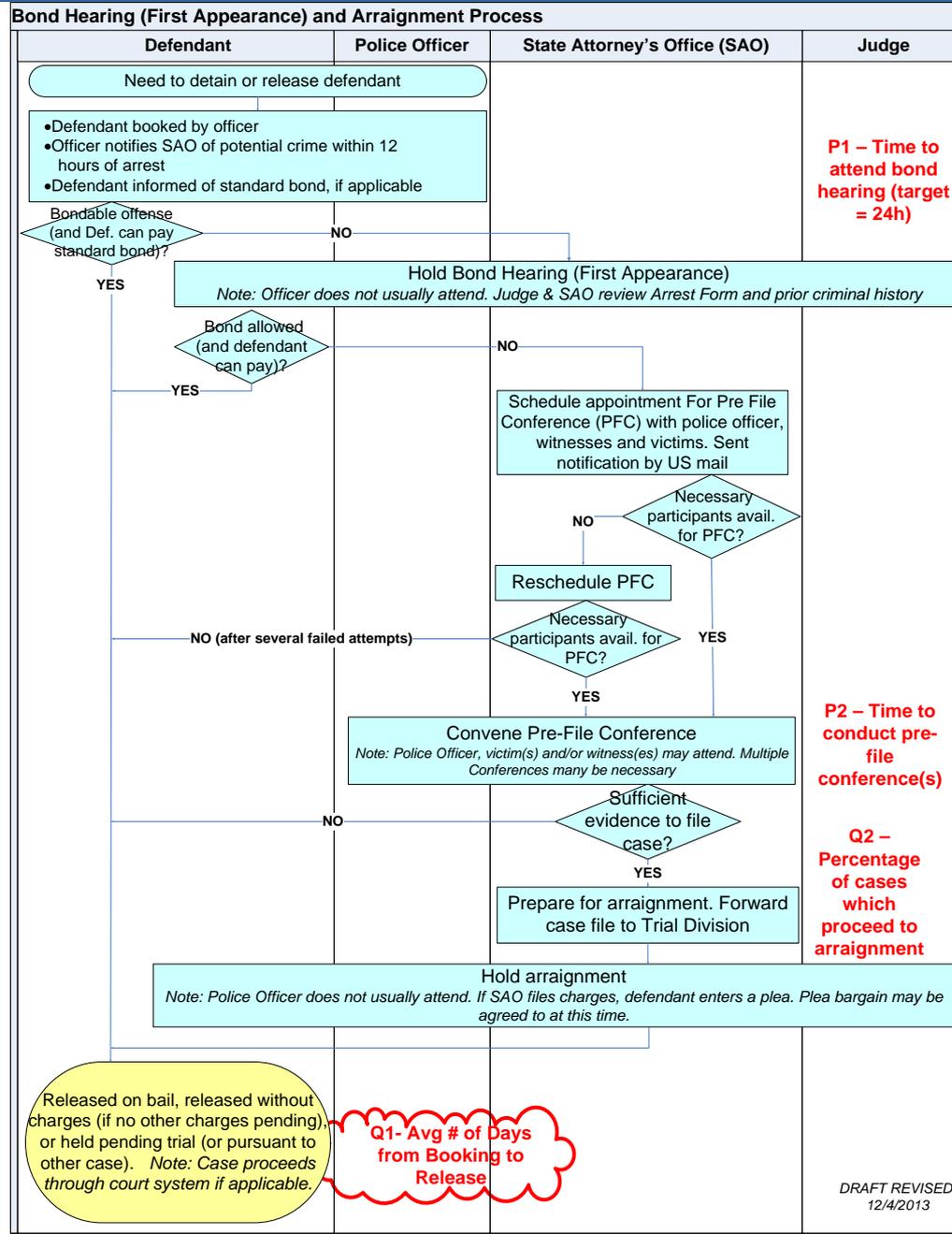


The team examined the criminal justice system at a high level. Next, the team honed in on the Bond Hearing and Arraignment process.



Review Process Flow Chart

The team constructed a Process flow chart describing the Process.



Identify Data Collection Needs

The team developed a data collection spreadsheet...each row is an *Felony Case*.

Case Number	Age (at Booking Date)	Sex	Race	Offense (description)	Booking Date	Release Date	Days from Booking to Release
F00037469	36	M	W	VEHICULAR HOMICIDE/OPERATE IN RECKLESS MANNER	4/24/2013	4/24/2013	0.00
F01022514	58	M	W	STOLEN PROPERTY/DEALING IN	3/27/2013	4/23/2013	27.00
F05039678	50	M	W	GRAND THEFT 2ND DEG/20K><100K	2/8/2013	2/11/2013	3.00
F09011820E	24	F	B	ACCESSORY AFTER THE FACT/CAPITAL OFFENSE	2/18/2013	6/14/2013	116.00
F09028735A	47	M	W	MONEY LAUNDERING/UNLAWFUL PROCEEDS/>100K	4/12/2013	7/15/2013	94.00
F09029625F	37	F	B	VOTER REGISTRATION/FALSE INFORMATION	3/13/2013	4/3/2013	21.00
F10015433B	44	M	W	ORGANIZED FRAUD/\$50,000 OR MORE	4/4/2013	7/9/2013	96.00
F11014487	31	M	W	UNEMPLOYMENT COMPENSATION FRAUD	4/9/2013	4/10/2013	1.00
F11026280F	44	F	W	INSURANCE CLAIMS/FALSE, FRAUDULENT	4/19/2013	5/30/2013	41.00
F11026959	53	M	B	UNEMPLOYMENT COMPENSATION FRAUD	3/20/2013	9/16/2013	180.00
F12009380C	59	M	B	COCAINE/SELL/MAN/DELIVER/POSSESS W/INTENT	2/7/2013	3/21/2013	42.00
F12016262B	38	M	W	COCAINE/SELL/MAN/DELIVER/POSSESS W/INTENT	4/13/2013	7/23/2013	101.00
F12016928C	39	M	W	INSURANCE FRAUD/STAGED ACCIDENT	2/27/2013	4/23/2013	55.00
F12016928D	40	M	W	INSURANCE FRAUD/STAGED ACCIDENT	3/1/2013	6/26/2013	117.00
F12020935C	39	F	B	ROBBERY/STRONGARM	4/22/2013	4/25/2013	3.00
F12021164	49	F	B	UNEMPLOYMENT COMPENSATION FRAUD	4/29/2013	5/2/2013	3.00

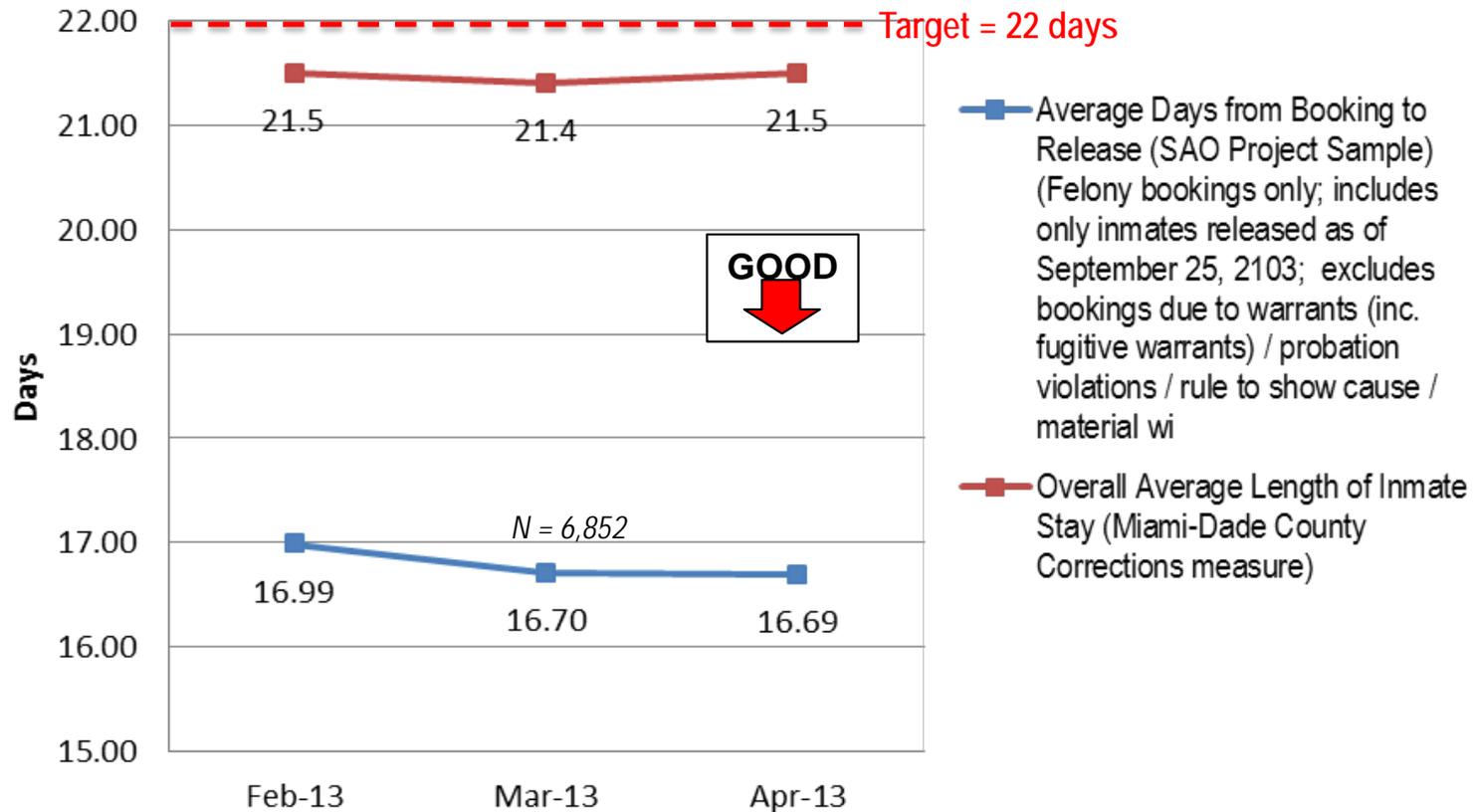


Review the Selected Indicator

The team collected indicator data and reviewed performance trends:

3. 

Average Days from Booking to Release (SAO Project Data Sample) and Overall Average Length of Inmate Stay (Miami-Dade Corrections measure)



Note: Miami-Dade County Corrections overall average length of inmate stay for FY 2012-13 was approx. 22.3 days



Factors Potentially Impacting Average Length of Inmate Stay

- Defendant's financial / personal circumstances
- Defendant's criminal history and other active cases, if any
- Statutes and ordinances
- Sentencing guidelines
- Use of Alternatives to incarceration / pre-trial diversion programs / etc.
- Public Defender Early Release initiative
- State Attorney recommendations and filing decisions
- Etc.



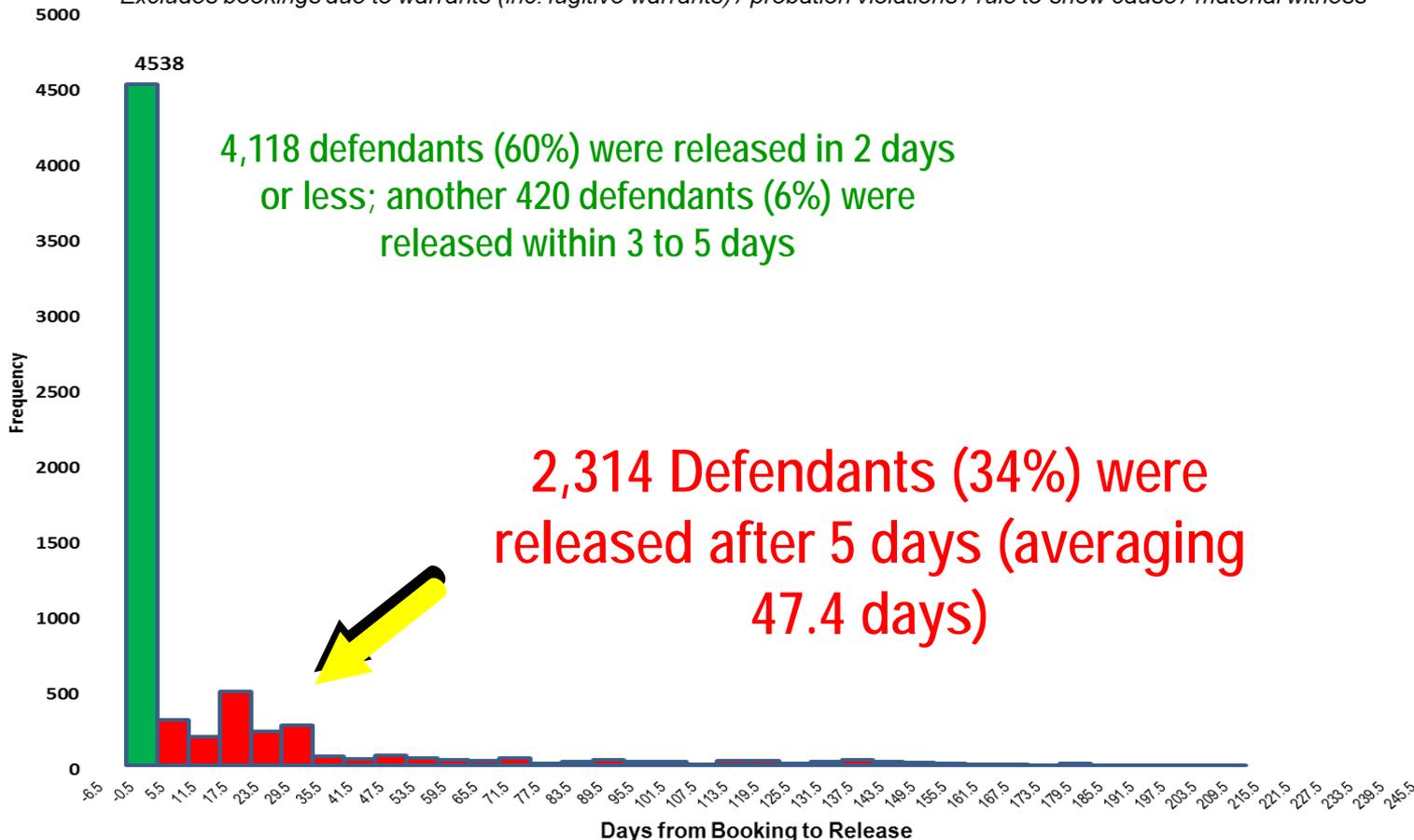
Stratify the Problem

The team Stratified the data using a histogram and found

5. 

Felony Cases Booked in February - April 2013 Resulting in a Release as of September 25, 2013

**Excludes bookings due to warrants (inc. fugitive warrants) / probation violations / rule to show cause / material witness*



The team then looked closer at 2,314 cases in which the defendant stayed in jail more than 5 days

n = 6,852



Stratify the Problem

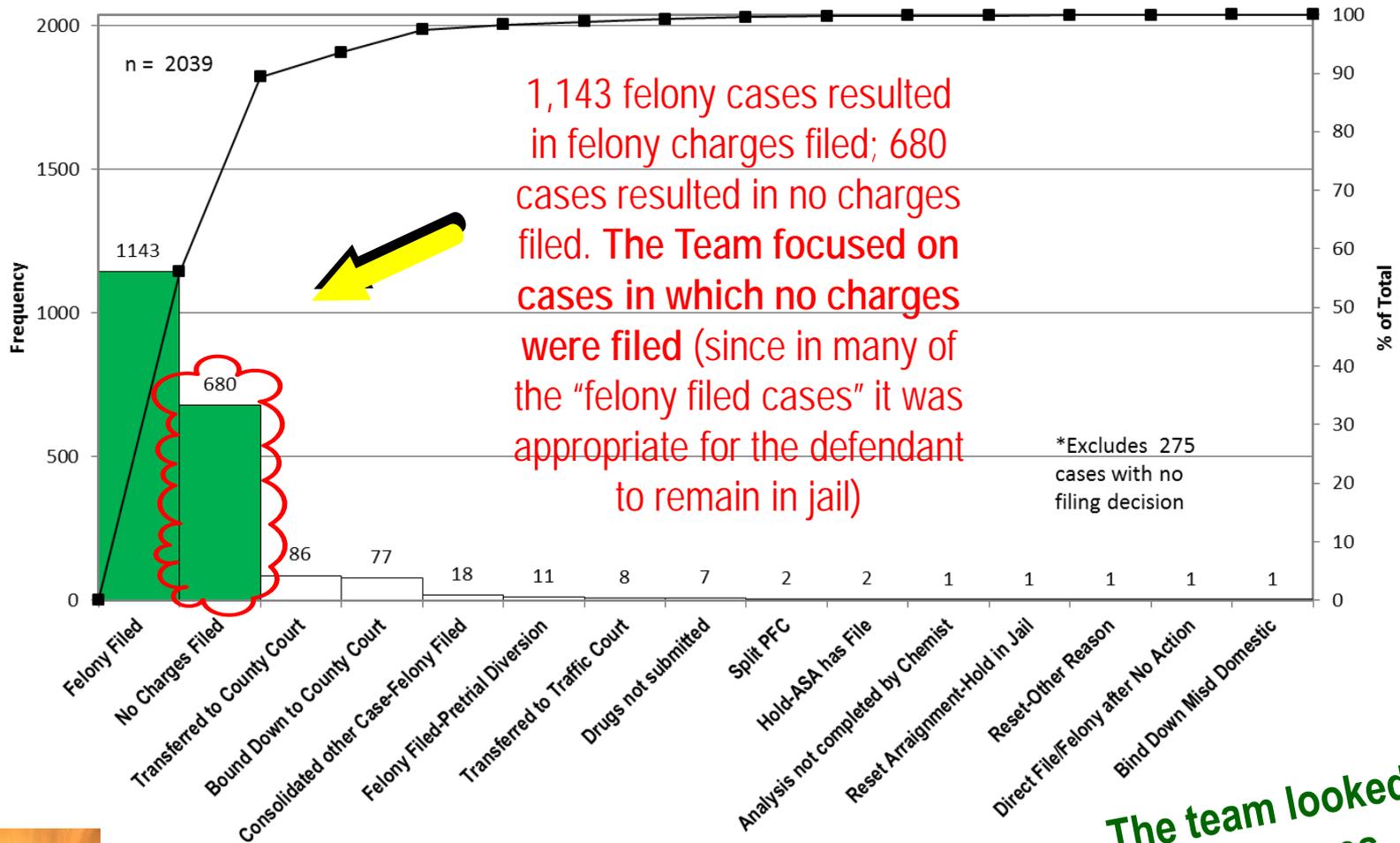
The team stratified the data and found...

Felony Cases Booked in February - April 2013 Resulting in a Release as of September 25, 2013

5.

*Excludes releases 0-5 days after booking

**Excludes bookings due to warrants (inc. fugitive warrants) / probation vltns. / rule to show cause / mat. witness



The team looked closer at these cases...



SAO Case Disposition

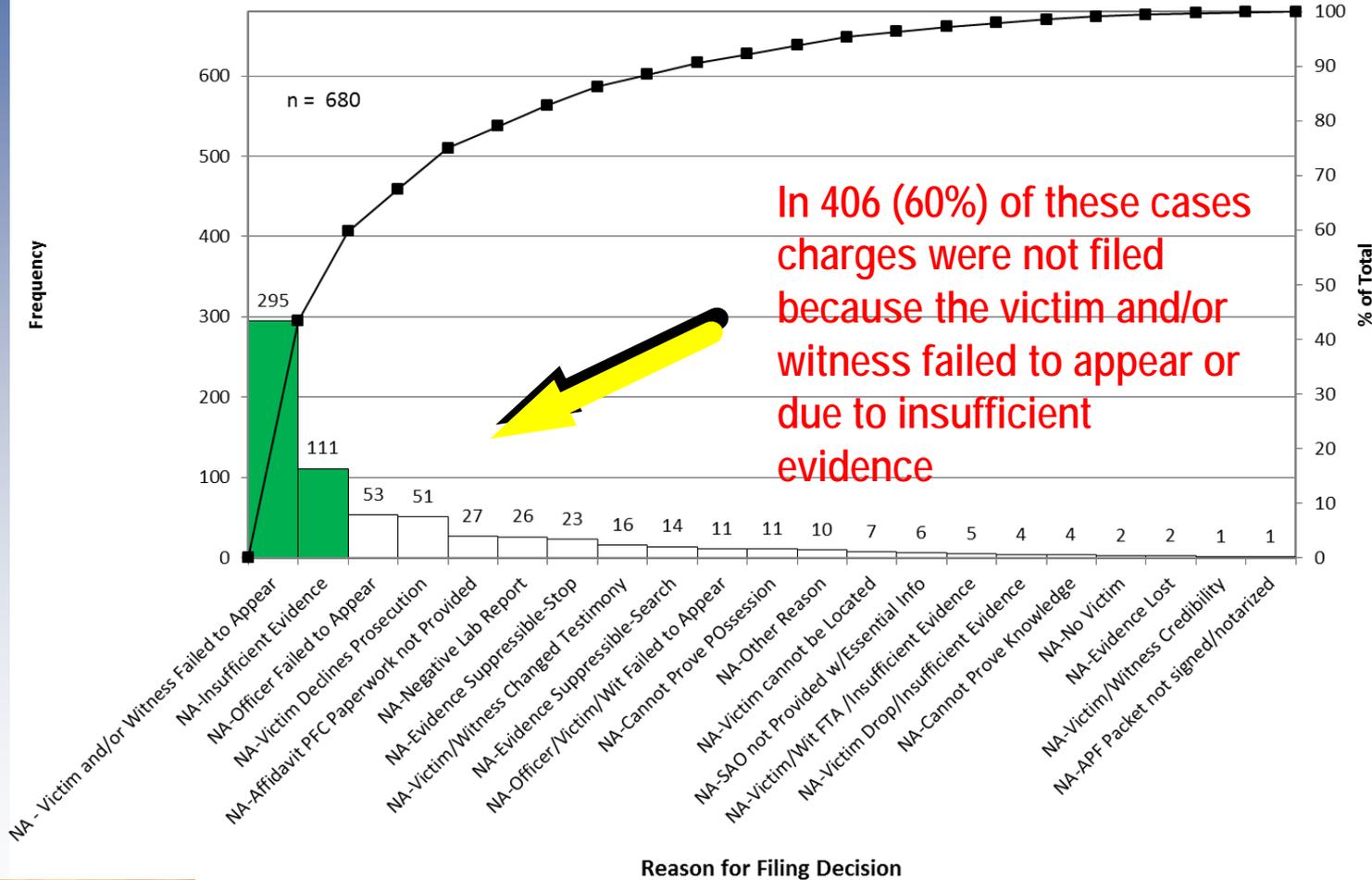


Stratify the Problem

The team stratified the 680 cases in which no charges were filed and found...

5.,8.

Felony Cases Booked in February - April 2013 Resulting in a Release as of September 25, 2013
in Which Felony Charges Were Not Filed



- *Excludes releases 0-5 days after booking
- excludes bookings due to warrants (inc. fugitive warrants) / probation vltns. / rule to show cause / mat. witness

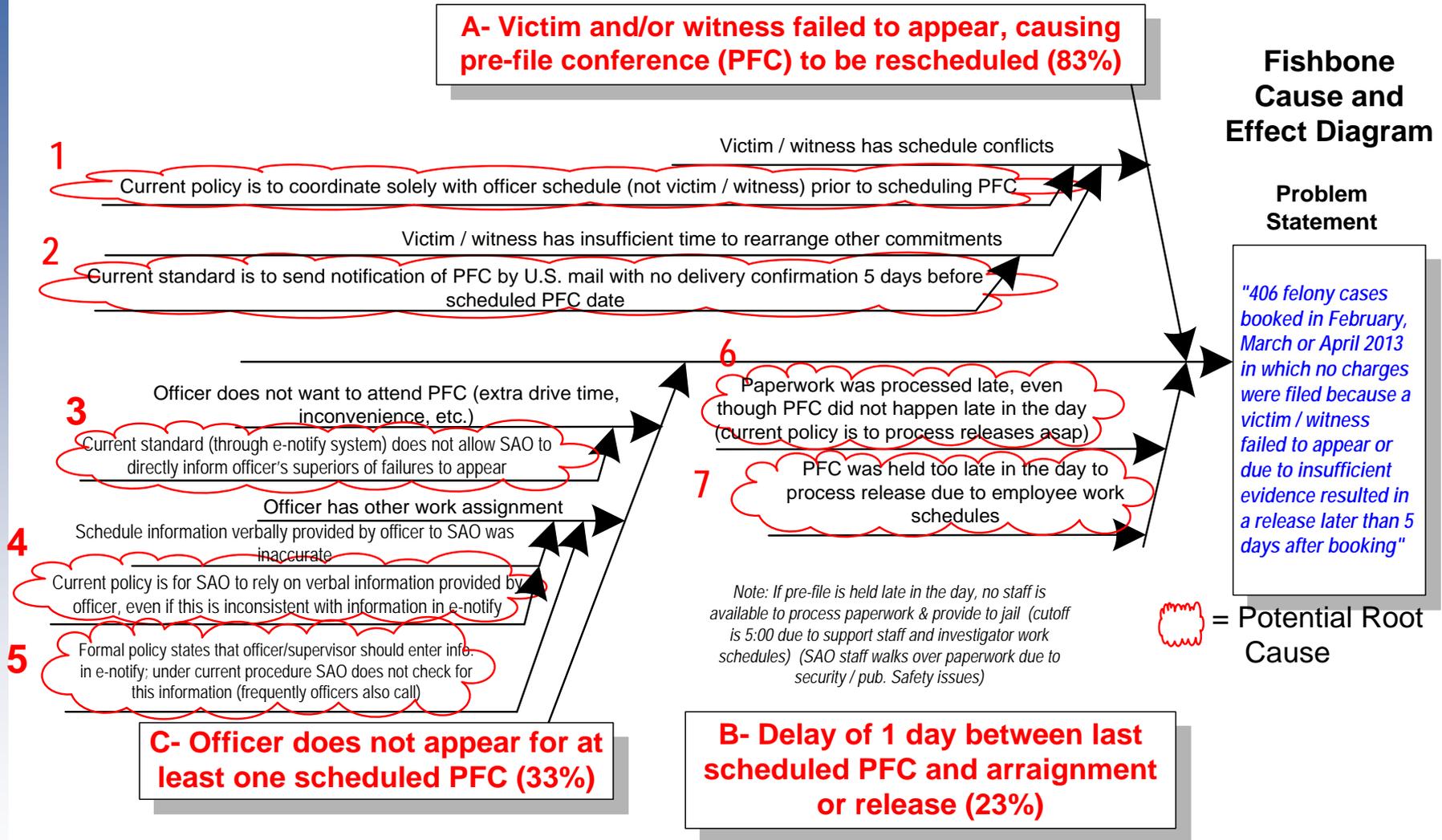
Problem Statement:

"406 felony cases booked in February, March or April 2013 in which no charges were filed because a victim / witness failed to appear or due to insufficient evidence resulted in a release later than 5 days after booking"

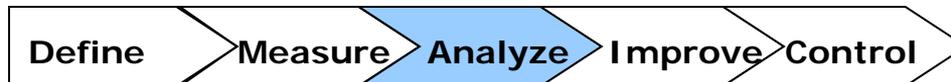


Identify Potential Root Causes

The team completed Cause and Effect Analysis and found...



The team next looked to verify these Potential Root Causes.



Verify Root Causes

The team collected data to verify the 7 root causes and found... **11.,12.** 

Root Cause Verification Matrix		
Potential Root Cause	How Verified?	Root Cause or Symptom
1 Current policy is to coordinate solely with officer schedule (not victim / witness) prior to scheduling PFC	Team verified current standards	Root Cause
2 Current standard is to send notification of PFC by U.S. mail with no delivery confirmation 5 days before scheduled PFC date	Team verified current standards	Root Cause
3 Current standard (through e-notify system) does not allow SAO to directly inform officer's superiors of failures to appear	Team verified current system capabilities	Root Cause
4 Current policy is for SAO to rely on verbal information provided by officer, even if this is inconsistent with information in e-notify	Team verified current policies and procedures	Root Cause
5 Formal policy states that officer/supervisor should enter info. in e-notify; under current procedure SAO does not check for this information (frequently officers also call)	Team verified current policies and procedures	Root Cause
6 Paperwork was processed late, even though PFC did not happen late in the day (current policy is to process releases asap)	Team verified current policies and procedures	Root Cause
7 PFC was held too late in the day to process release due to employee work schedules (current PFCs scheduled 6am-7pm - often evening shift officers are needed)	Team verified current work schedules	Root Cause

...all potential root causes were validated.



Statistical Root Cause Validation

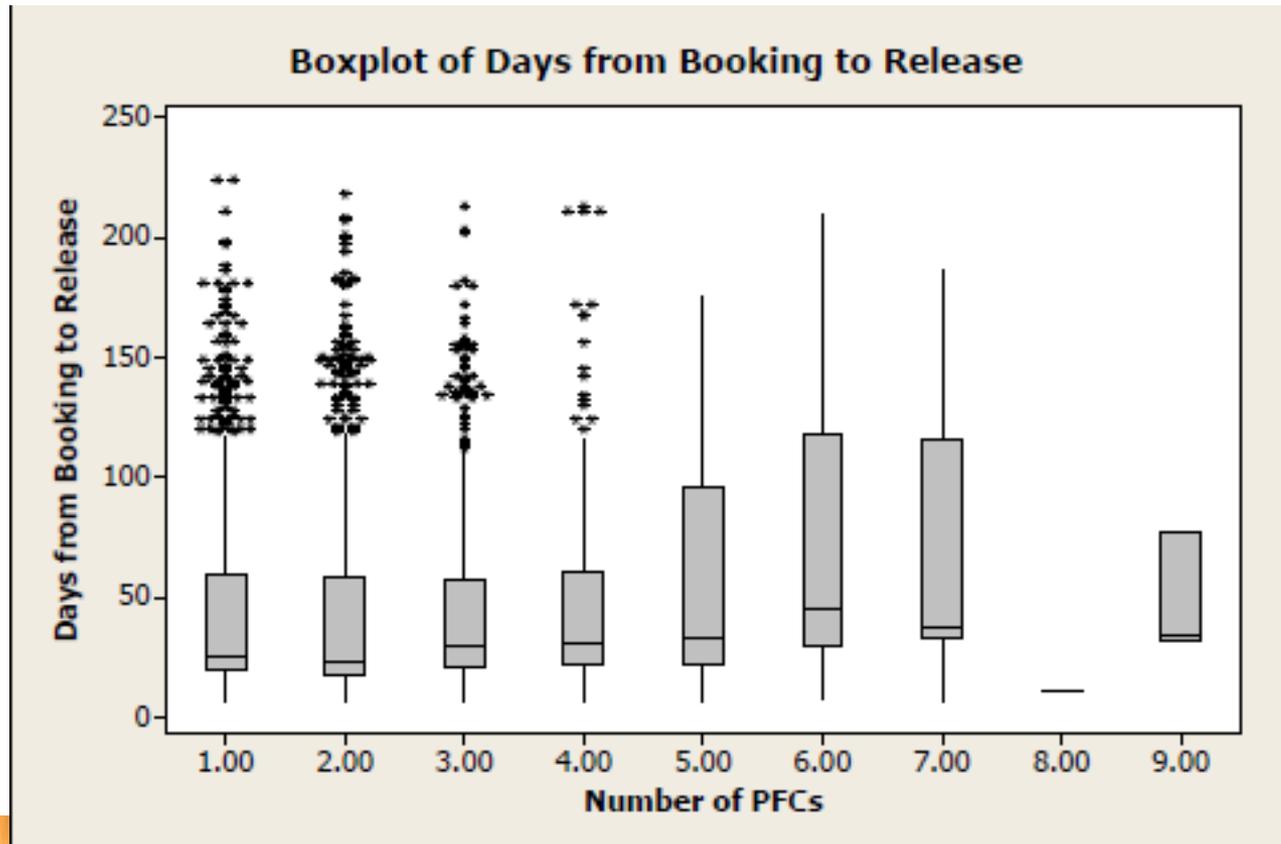
The team performed regression analysis and used box plots to visualize the relationship between the number of scheduled pre-file conferences and time to release defendants... ..

11.,12. ✓

Results of regression analysis:

$$r = .063$$

$$p = .004$$



This indicates a **positive (but weak) relationship** between the number of PFCs and the time to release.



Identify and Select Countermeasures (1 of 2) 13.,14.

The team brainstormed many countermeasures and narrowed them down to these for evaluation:

Problem Statement:

"406 felony cases booked in February, March or April 2013 in which no charges were filed because a victim / witness failed to appear or due to insufficient evidence resulted in a release later than 5 days after booking"

Verified Root Causes	Countermeasures	Approx. Cost	Additional Benefits	Legend:				
				5-Extremely		3-Moderately		
				4-Very		2-Somewhat		
Ratings					Overall	Take Action? Yes/No		
Effectiveness	Feasibility	Affordability						
1 Current policy is to coordinate solely with officer schedule (not victim / witness) prior to scheduling PFC (Note: all countermeasures would also address root cause #2)	1a - Use automated call-out system to confirm appts., with option to reschedule		Savings in attorney time due to fewer no-shows & split PFCs; quicker criminal justice process; improved victim / witness cooperation, leading to more successful prosecutions (applies to all items under # 1 and #2)	3	3	4	36	TBD
	1b - Use text messaging to communicate with victims / witnesses (already collect cell # but technical hurdles exist)			3	2	3	18	No
	1c - Work with police depts. to have officer collect e-mail addresses (not currently a separate field on a-form, but SAO system is capable of sending emails)			3	4	5	60	TBD Team recommends
	1d - Assign staff to call victim / witness prior to scheduling PFC		For certain cases, paralegal could take testimony immediately upon initial call	4	5	3	60	TBD
2 Current standard is to send notification of PFC by U.S. mail with no delivery confirmation 5 days before scheduled PFC date	2a - Use process servers to deliver PFC notices (as subpoenas)			4	4	1	16	TBD

...the team selected **4 countermeasures for management consideration.**



Identify and Select Countermeasures (2 of 2) 13.,14.

The team brainstormed many countermeasures and narrowed them down to these for evaluation:

Problem Statement:

"406 felony cases booked in February, March or April 2013 in which no charges were filed because a victim / witness failed to appear or due to insufficient evidence resulted in a release later than 5 days after booking"

Verified Root Causes	Countermeasures	Approx. Cost	Additional Benefits	Legend:				
				5-Extremely		3-Moderately		2-Somewhat
				4-Very			1-Little or None	
Ratings								
				Effectiveness	Feasibility	Affordability	Overall	Take Action? Yes/No
3	Current standard (through e-notify system) does not allow SAO to directly inform officer's superiors of failures to appear		Savings to SAO in attorney time; faster criminal justice process; possible savings to police departments in reduced overtime; increased officer accountability	5	3	5	75	Yes
	3a - Coordinate with police departments to ensure court liaisons are checking e-notify reports (kiosk check-in report and no-show report) of failures to appear			3	1	1	3	No
4	Current policy is for SAO to rely on verbal information provided by officer, even if this is inconsistent with information in e-notify		Savings to SAO in attorney time; faster criminal justice process; possible savings to police departments in reduced overtime; increased officer accountability	5	3	5	75	Yes
	4a - Coordinate with police departments to ensure e-notify is up-to-date and revisit policies regarding officer availability adjacent to days off			3	5	5	75	Yes
5	Formal policy states that officer/supervisor should enter info. in e-notify; under current procedure SAO does not check for this information (frequently officers also call)		Savings to SAO in attorney time; faster criminal justice process	4	5	5	100	Yes
5a - Revisit current procedures for checking e-notify for conflicts after PFC has been set								
6	Paperwork was processed late, even though PFC did not happen late in the day (current policy is to process releases asap)			2	5	5	50	Yes
6a - Remind staff of importance of processing jail release memos timely								
7	PFC was held too late in the day to process release due to employee work schedules (current PFCs scheduled 6am-7pm - often evening shift officers are needed)			5	2	2	20	TBD - team does not recommend
7a - Adjust SAO Investigations / support staff / attorney supervisor work schedules to allow jail releases in later evening (if MDCR concurs)								

...the team selected **5 countermeasures for implementation.**



Identify Barriers and Aids

The team performed Barriers and Aids analysis on the selected Countermeasures.

Countermeasure(s): **Implement 5 or More Countermeasures to Decrease Time to Release Appropriate Defendants from Jail**

Barriers		Aids
Impact (H, M, L)	Forces against Implementation	Forces For Implementation
M	1) Police cooperation is needed <i>(Supported by Aid: A,B)</i>	A) All parties have already agreed to use e-notify system
H	2) Limited resources to implement changes <i>(Supported by Aid: B,C,D)</i>	B) Everyone wants project benefits (including more successful prosecutions)
		C) Management supportive of team's efforts
		D) Countermeasures could result in cost savings (in attorney time) to SAO

The team next sought to incorporate this analysis into the team's Action Plan.



Develop and Implement Action Plan

Legend:
 = Actual
 = Proposed

The team implemented an Action Plan for the team's Countermeasures.

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WHAT: Implement Countermeasures to Reduce Time to Release Defendants

HOW	WHO	WHEN									
		2013	2014								
		Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
1. Develop Countermeasures:											
1a, 1c, 1d, 2a - Secure initial management approval of countermeasures and refine Action Plan to incorporate selected items	Team			2/1/14							
3a, 4a - Develop communication strategy for working with police departments	Marie Jo			2/1/14							
3b - Revise e-notify access for scheduling staff	Hamilton					3/31/14					
5a - Review and adjust as appropriate procedures for checking e-notify for conflicts after PFC has been set	Marie Jo			2/1/14							
6a - Work with supervisors to remind staff of importance of processing releases	Marie Jo			2/1/14							
2. Implement Countermeasures (including training / communication with staff) when approved	Team					3/31/14					
3. Establish on-going responsibilities and standardize countermeasures into operations	Process Owner							On-going			



Standardize Countermeasures

The team Developed a Process Control System (PCS) with suggested performance measures

Process Control System					
Process Name: Bond Hearing and Arraignment Process		Process Owner: State Attorney / Chief Judge / Miami-Dade County Corrections Director			
Process Customer: Criminal justice community / Community at large / All adults arrested in Miami-Dade County		Critical Customer Requirements: Timely processing; appropriate case disposition; low costs			
Process Purpose: Release appropriate defendants from jail timely / Pursue prosecution of offenders as appropriate		Current Sigma Level: TBD		Outcome Indicators: Q1, Q2, Q3	
Process and Quality Indicators		Checking / Indicator Monitoring			
Process Indicators	Control Limits	Data to Collect	Timeframe (Frequency)	Responsibility	
And	Specs/ Targets	What is Checking Item or Indicator Calculation	When to Collect Data?	Who will Check?	
Quality Indicators					
P1	Time to attend bond hearing	24 hours	(Date/Time Bond hearing)-(Date/Time defendant Booked)...(Hours)	By Event	Judge, SAO, Public Defender / private attorney
P2	Time to conduct pre-file conference(s) (PFC)	Prior to arraignment (20 or 29 days)	(Date/Time PFC conducted)-(Date/Time defendant Booked)...(Days)	By Event	SAO
Q1	Avg # of Days from Booking to Release	22 days	(Date/Time defendant released)- (Date/Time defendant Booked)...(Days)	By Event	Miami-Dade County Corrections; Judge, SAO, Public Defender / private attorney
Q2	Percentage of cases which proceed to arraignment	TBD by SAO mgmt.	Number of cases proceeding to arraignment / total number of cases * 100	Monthly or as determined by SAO mgmt.	SAO
Q3	Percentage of defendants released within 15 days	75%	Number of defendants released within 15 days / total number of defendants * 100	By Event	Miami-Dade County Corrections; Judge, SAO, Public Defender / private attorney

The team looked ahead to the future.



Lessons Learned

- 1) Root cause verification was an essential tool in this project, which involved a highly complex process with numerous “moving parts”
- 2) Root Cause verification helped the team determine that countermeasures were not likely to result in significant savings for Miami-Dade County Corrections, and so should not be considered a “failure”
- 3) Countermeasures may have many additional benefits other than addressing the problem that was the initial focus of the project
- 4) Collaboration between SAO and County staff was instrumental in completing the project

Next Steps

- 1) Continue to monitor the countermeasures and performance results. OMB is available to assist the SAO with implementation



Appendix A: Statistical Analysis of Bond Amount

The team performed regression analysis to examine the relationship between bond amount* and time to release defendants and found

*Excludes cases with no bond allowed

Results of regression analysis:

$$r = -.033$$
$$p = .130$$

This indicates that bond amount does not have an impact on time to release defendants.



Appendix B: Hidden Cost of Defendants unnecessarily held in jail

The team identified costs associated with Defendants held in jail unnecessarily. 5. ✓

EXAMPLE:

Miami-Dade County Corrections cost per inmate day	\$ 148
Approximate Monthly Bookings	7,000
Monthly impact of a 1 day increase / decrease in average inmate length of stay	\$ 1,036,000
Annual impact of a 1 day increase / decrease in average inmate length of stay	\$ 12,432,000

DISCLAIMER: Figures include both fixed costs, which are incurred by the County irrespective of the number of inmates, and variable costs. Actual savings from a decrease in average inmate length of stay would be less than the numbers shown in the table above. Exact figures are not available at this time.

