

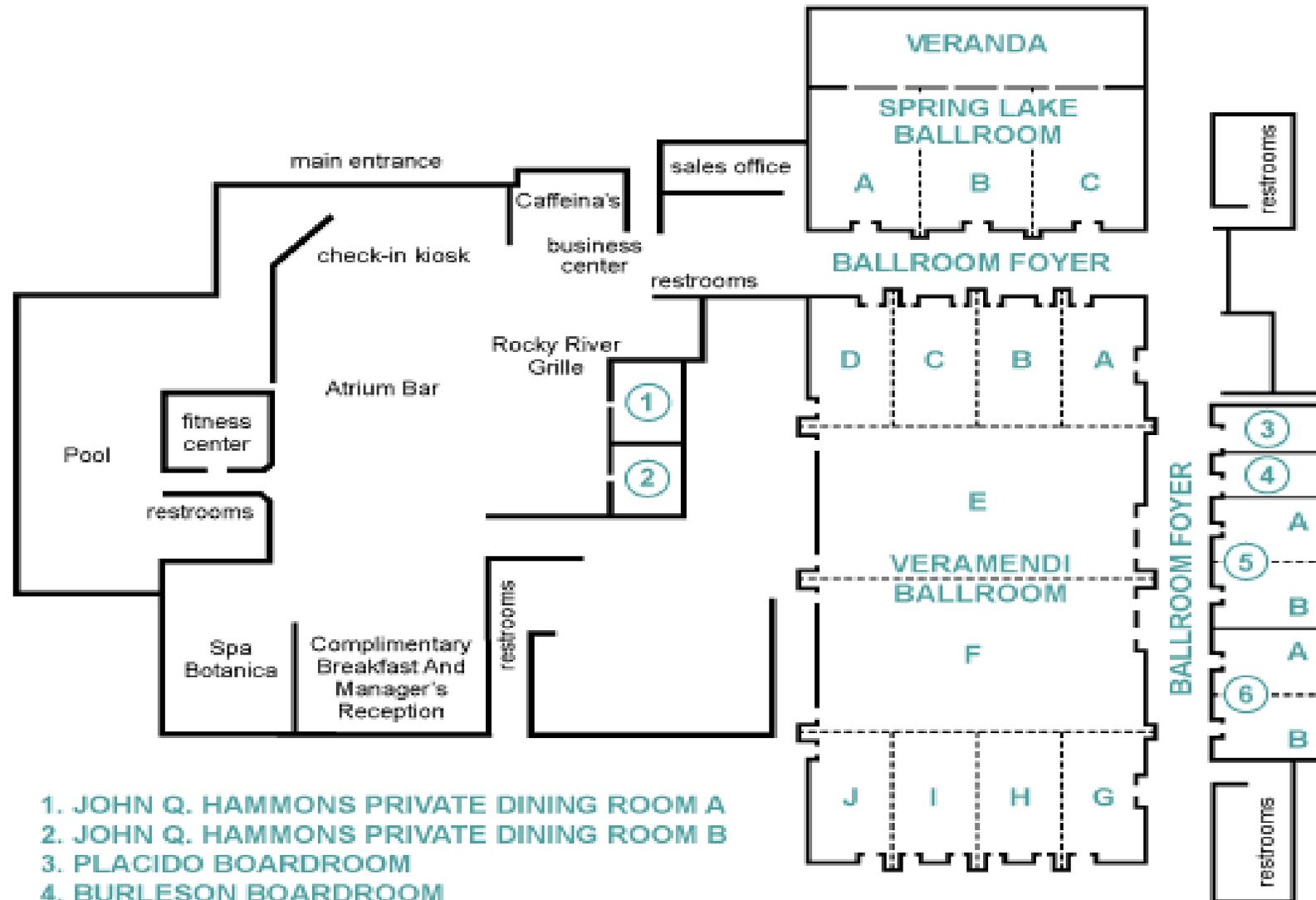


Data Coordinators' Conference 2016

Announcements

- Going paperless
- Wi-Fi
- Conference Evaluation
- Certification of Credit

EMBASSY SUITES SAN MARCOS - CONVENTION CENTER



1. JOHN Q. HAMMONS PRIVATE DINING ROOM A
2. JOHN Q. HAMMONS PRIVATE DINING ROOM B
3. PLACIDO BOARDROOM
4. BURLESON BOARDROOM
5. CHAUTAUQUA
6. SAN MARCOS RIVER

Ice Breaker Activity



Imagine
With all
your mind.
Believe
With all
your heart.
Achieve
With all
your might.

Recognition



TJJD Research and Planning Division

- Pernilla Johansson, Director
- Lory Alexander, Juvenile Justice Research Program Administrator
- Carolina Corpus-Ybarra, Research Specialist
- Freya Gaertner, Research and Planning Specialist
- Daniel Gunter, Research Specialist
- Chara Heskett, Research Specialist
- Cyndy Karras, Research Specialist
- Jocelyn Lewis, Research Specialist
- Glenn Like, Research Specialist

Lory Alexander



Questions

- How much are juvenile probation and supervision officers paid?
- What are turnover rates among juvenile probation department employees?
- To what extent do salaries and turnover vary by department size, geographic region, and officer tenure?
- How do probation and supervision officer salaries compare to salaries for similar positions?
- Is low salary a driver of high turnover?
- How can employee recruitment and retention at county probation departments be improved?

Data Sources

■ Annual Resource Survey

- *# personnel, average salary, recruiting, hiring, retention*
- *Response rate 97%*

■ Integrated Certification Information System (ICIS)

- *Certification date*
- *Termination date*

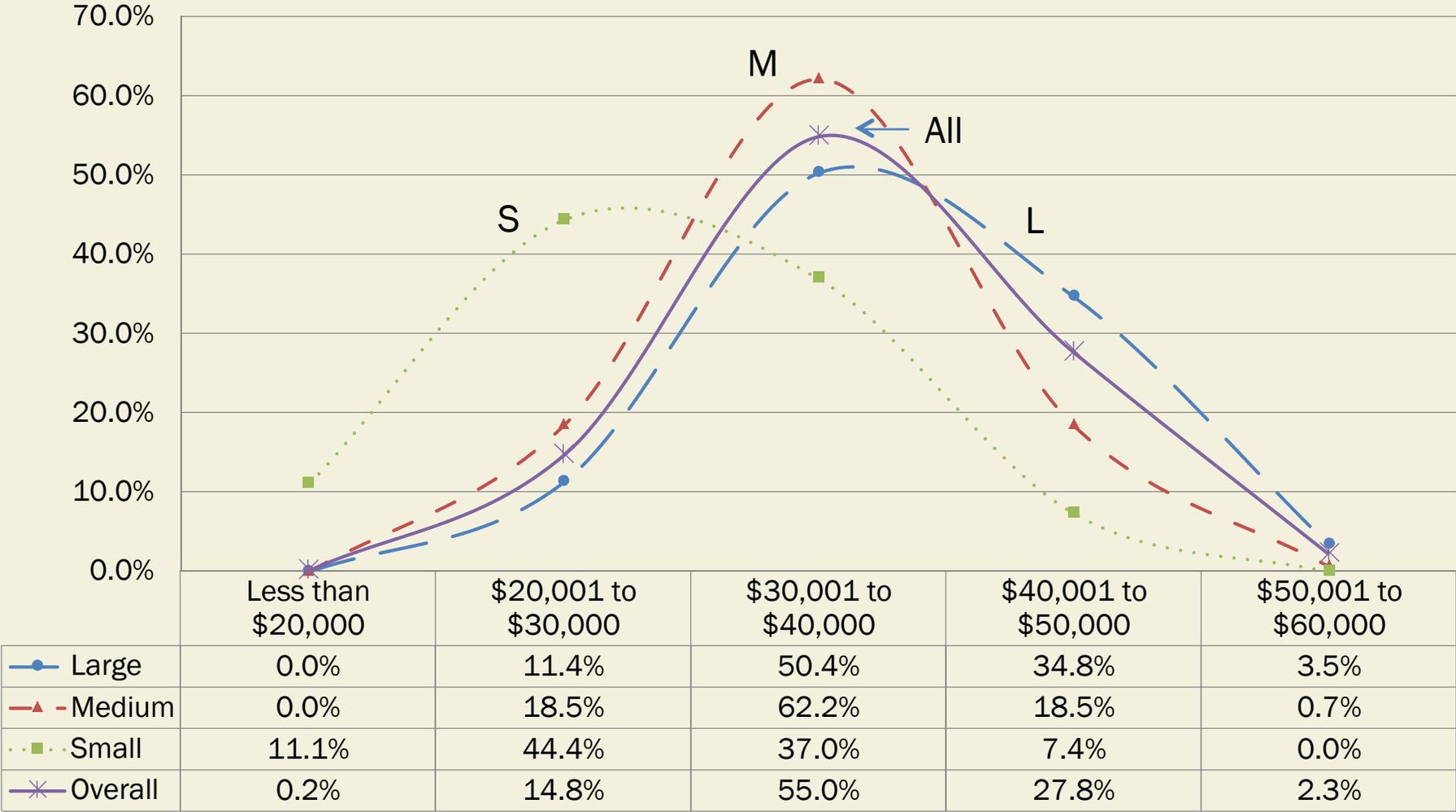
■ October 1, 2015 Sample

- *Officers employed, department start date, salary*
- *Response rate 70%*

■ Supplemental Survey

- *Starting salary*
- *Benefits*

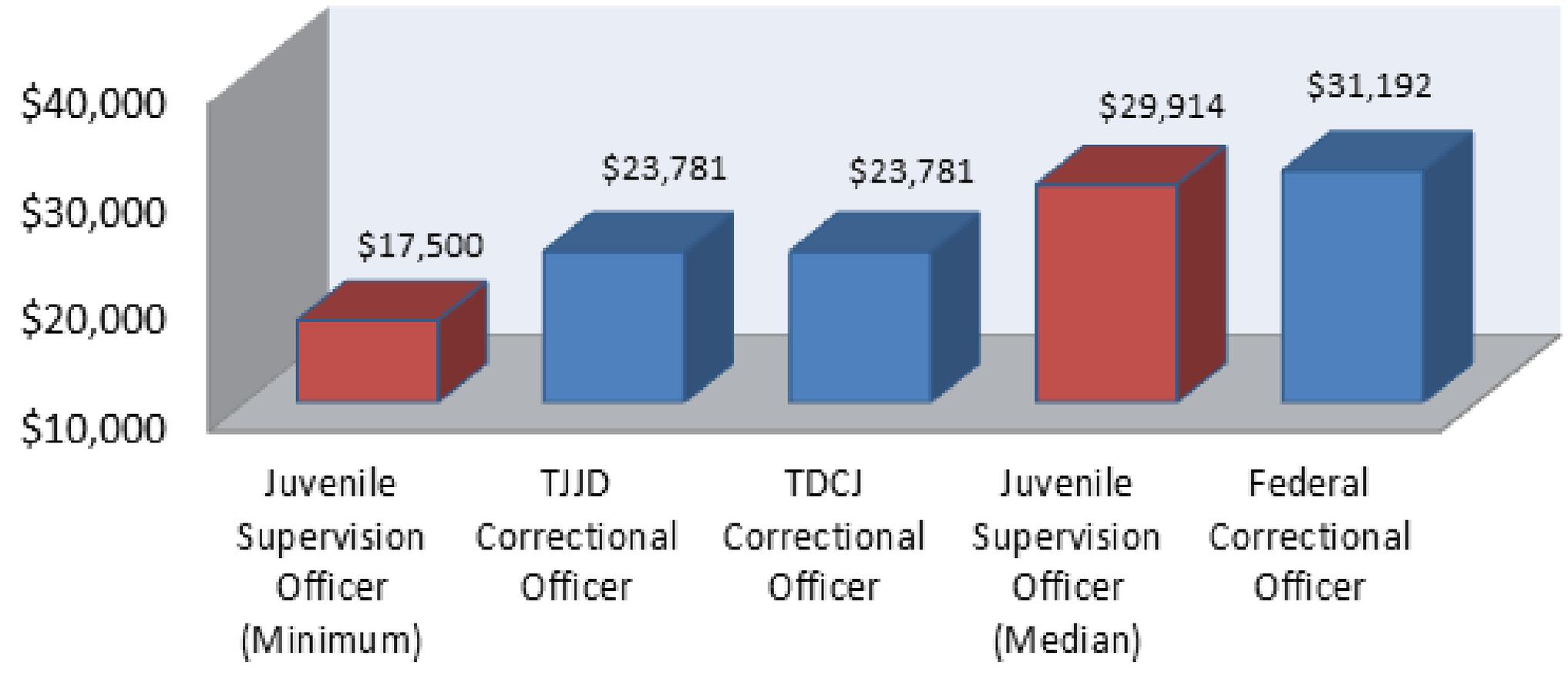
JSO Full-Time Officer Salary



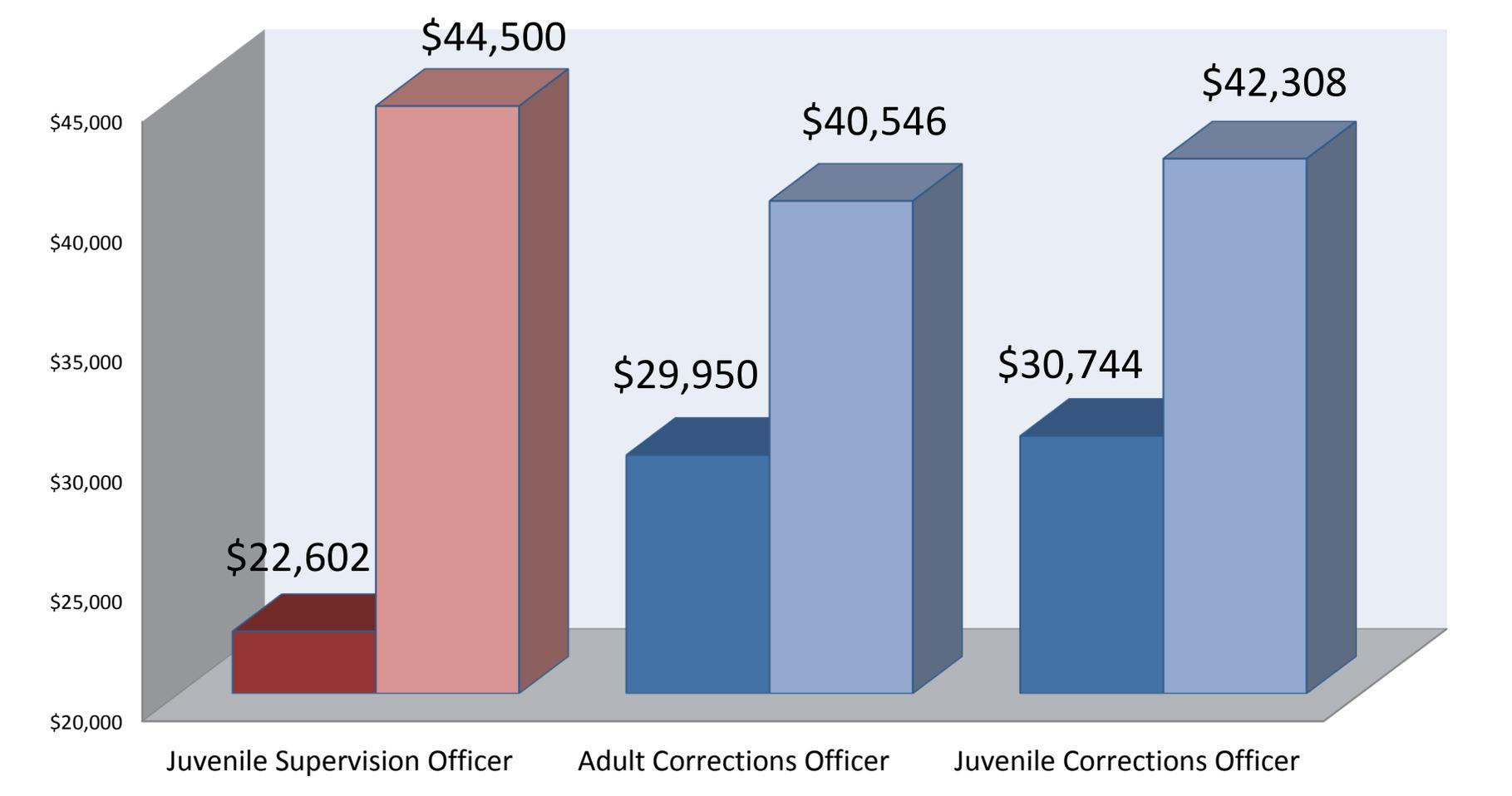
JSO Full-Time Officer Turnover

	Median Salary	Median Tenure	Turnover
Large	\$36,610	6.79	21.1%
Medium	\$33,694	3.33	31.2%
Small	\$25,563	3.33	25.4%
North	\$42,094	7.33	14.9%
Panhandle	\$38,382	3.25	29.7%
Southeast	\$38,337	6.67	22.7%
West	\$34,739	7.13	21.2%
Central	\$33,516	3.25	29.2%
South	\$32,716	2.67	29.5%
Northeast	\$28,254	3.13	36.7%
Total	\$36,120	4.42	25.5%

JSO Full-Time Salary Range Minimum



JSO Actual Min/Max 0-36 Months Tenure

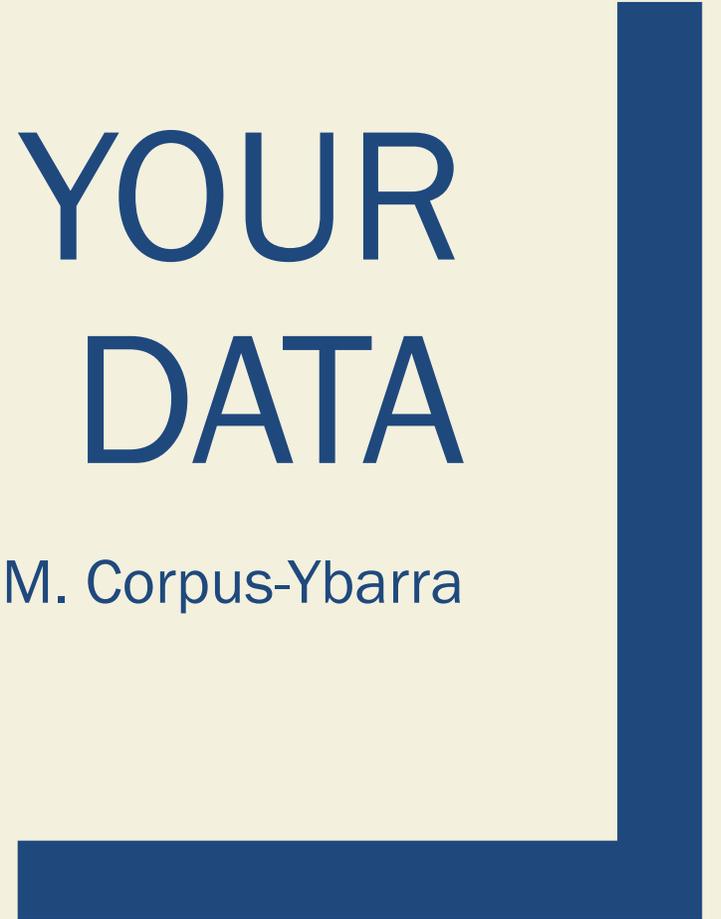


LAR 2018-2019 Exceptional Item #7

- Chiefs cite position salaries as a cause of turnover
- Salary survey showed
 - *Significant diversity across the state*
 - *Need to improve the competitiveness of salaries*
- Request funding to support 3% ↑ for JPOs & JSOs
\$5,220,000

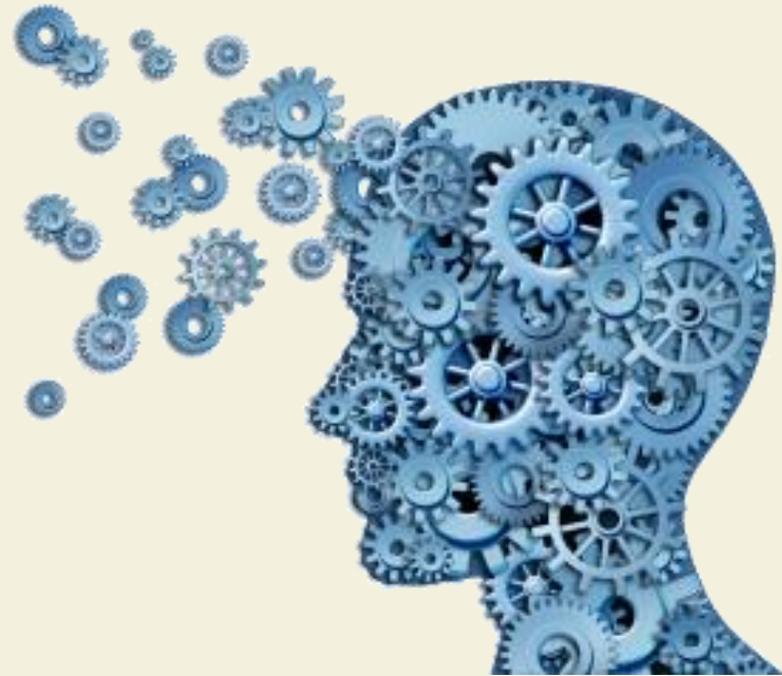
THINKING ABOUT YOUR DATA

Carolina M. Corpus-Ybarra



Thinking About Your Data

- **Be Curious**
- **Be Investigative**
- **Be Informed**



Thinking About Your Data

- Where is your data located?
- How do you currently use your data?
- How have your data practices lead to achievements?
- What are the shortcomings or challenges to your data and data related practices?
- Who is using your data?
- How is your data being used?

Higher Education - Dissertation

CY 2013 Statewide Individual Females Detained with an Identified Special Handicapping Condition by Race

SpecEducHandicap	Race				Total
	African American	Hispanic	White	Other	
Not Applicable	1635	2784	1751	72	6242
Emotional Disturbance	54	56	39	1	150
Learning Disability, Specific	81	113	55	1	250
Mental Retardation	1	3	4	0	8
Other Health Impairment	0	2	0	0	2
Other Disorder	16	19	17	0	52
Physical Disability	3	2	0	0	5
Unknown	14	9	8	0	31
State Total	1804	2988	1874	74	6740

Higher Education - Research Project

CY 2014 Statewide Child Community Placement Type & Offense Type							
ChildLivesWith	OffenseSeverity						Total
	Felony	Misdemeanor	VOP	Status	CINS	Contempt	
Missing	973	2062	475	470	86	157	4223
Blended	1787	3615	1238	436	161	163	7400
Both	2505	5912	1406	742	315	262	11142
Father	955	2228	724	264	117	107	4395
Foster Family	98	181	46	59	7	5	396
Friend	27	51	21	5	5	2	111
Guardian	150	297	102	74	23	13	659
Grandparents	1015	1908	924	298	91	100	4336
Group Home	389	505	274	185	28	17	1398
Mother	5758	13632	4615	1670	932	719	27326
Other	115	217	100	42	4	18	496
Relative	412	842	370	142	41	27	1834
Self	16	6	4	0	0	0	26
Spouse	8	4	1	8	0	0	21
Unknown	31	126	13	90	7	4	271
Total	14239	31586	10313	4485	1817	1594	64034

Thinking **Critically** About Your Data

- What does your data show?
- What does your data not tell you?
- Does your data answer your questions?
- If not, how can your questions be answered?
- What are the implications for your results or the lack there of?

Advocacy Group Inquiry

CY 2015 Mental Health Needs by department size and age

			Age							Total	
			10	11	12	13	14	15	16		17
Large	Mental Health Needs	Yes	62	158	399	908	1577	2382	3168	792	9446
		No	56	185	494	1089	1722	2627	3608	705	10486
		Unknown	25	65	174	329	426	604	861	48	2532
Medium	Mental Health Needs	Yes	74	153	325	578	954	1294	1485	261	5124
		No	63	203	548	1042	1739	2274	2984	431	9284
		Unknown	22	49	117	226	320	405	451	65	1655
Small	Mental Health Needs	Yes	25	48	95	172	246	257	328	47	1218
		No	42	83	183	338	612	735	1021	134	3148
		Unknown	5	11	26	43	87	97	134	13	416
Total			374	955	2361	4725	7683	10675	14040	2496	43309

Legislative Budget Board Report

FY16 Dispositions by Disposition Type							
Quarter/Year	Certified to Adult Court	TJJD	Adjudicated Probation	Deferred Prosecution	Supervisory Caution	Dismissed	Total Dispositions
Sep-15	11	83	1229	1175	899	1159	4556
Oct-15	13	85	1314	1183	862	1186	4643
Nov-15	9	72	1138	1116	813	1073	4221
Dec-15	13	62	1089	1002	903	972	4041
Jan-16	7	59	1184	1208	887	1230	4575
Feb-16	11	66	1128	1261	952	1152	4570
Mar-16	20	61	1403	1320	932	1314	5050
Apr-16	17	72	1260	1188	958	1180	4675
May-16	13	72	1233	1274	978	1171	4741
Jun-16	19	78	1401	1336	915	1150	4899
Jul-16							0
Aug-16							0

What's Next?

- Should any changes be made?
- What are additional data related possibilities?
- Are there other questions that should be asked?

P AIRING
A CHIEVEMENT
W ITH
S ERVICE



“Changing lives through relationships.”

PAWS Program Activities

- PAWS is an animal-assisted therapy program. Participants are paired with a single dog for at least 12 weeks.
- Youth are responsible for their dogs 24/7.
 - *Hygiene*
 - *Grooming*
 - *Feeding*
 - *Training*
 - *Housing*
- Youth train dogs on the “Canine Good Citizen” (CGC) elements from the American Kennel Club.
- After passing an evaluation by a certified CGC evaluator, dogs are adopted as pets.

Background

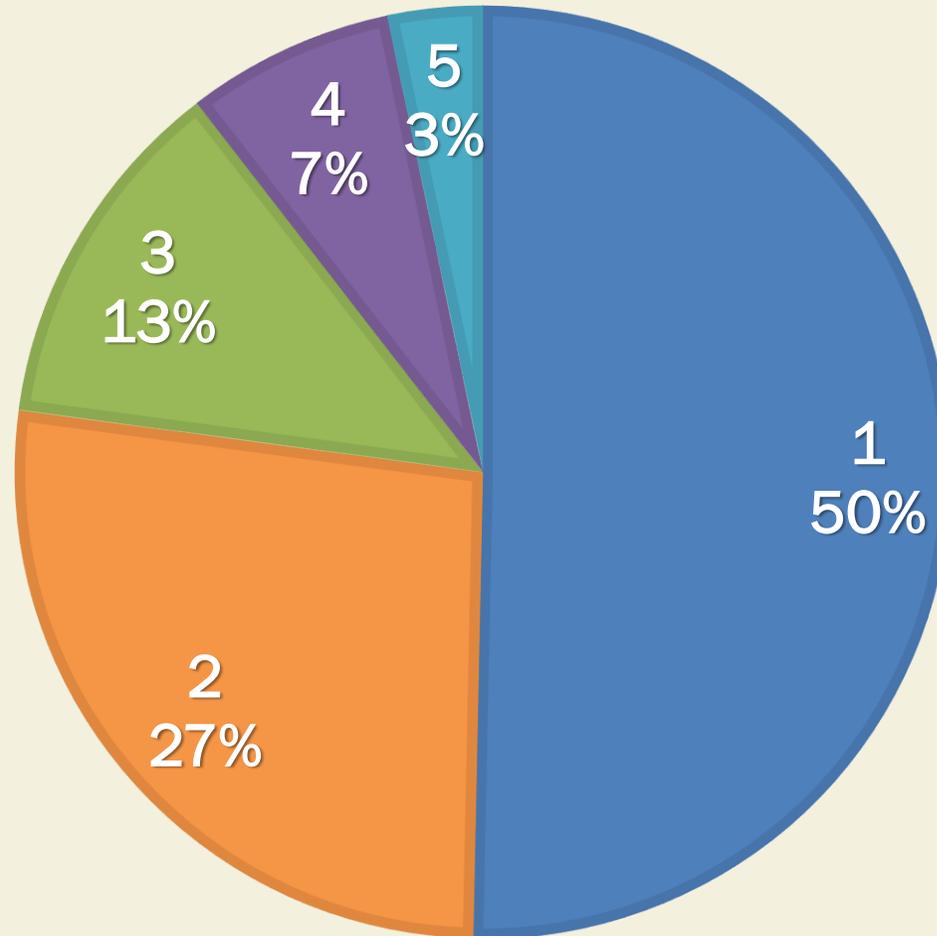
- Gonski (1985) and Ross (1992) showed animal-assisted therapy helps children regulate their behavior and develop empathy toward other living things.
- Certain bio-chemicals associated with social bonding increase, while those associated with stress decrease, when people interact with dogs. (Odenall 2000)
- Children with ADHD and Conduct Disorder who participated in an animal-assisted education program showed:
 - *Increased attendance*
 - *Increased knowledge and skills*
 - *Decreased anti-social and violent behaviors* (Katcher and Wilkens 2000)

PAWS Program Profile

- There are currently 20 youth enrolled in the PAWS program at two TJJD facilities.
- Enrolled since 1/14/10
 - *156 girls*
 - *12 boys*
 - *147 dogs*
- Most supplies, food, toys, and veterinary care have been donated by the community.
- Staffing ratios are lower and staff receive special training to work on PAWS dorms.

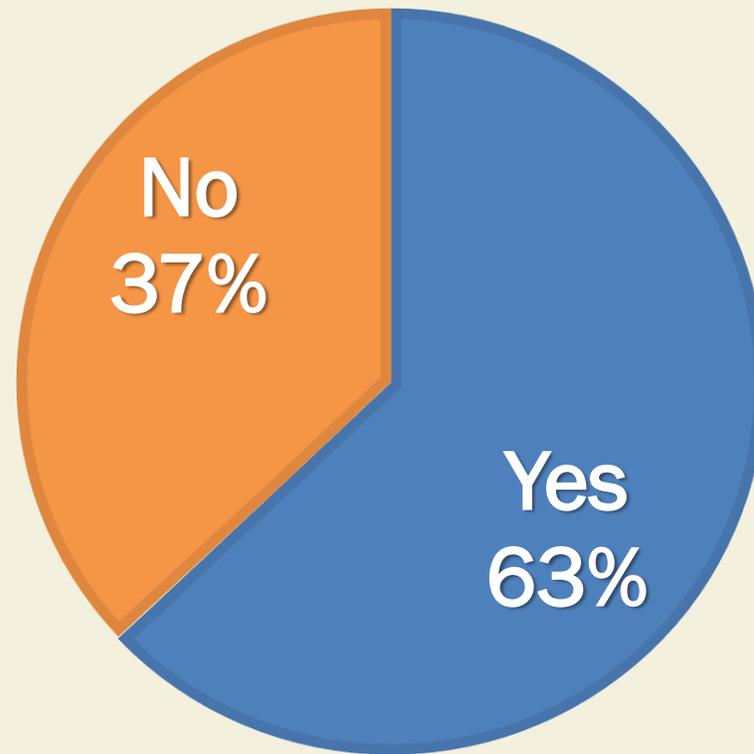
PAWS Participant Profile

NUMBER OF ADJUDICATIONS PRIOR TO TJJD COMMITMENT



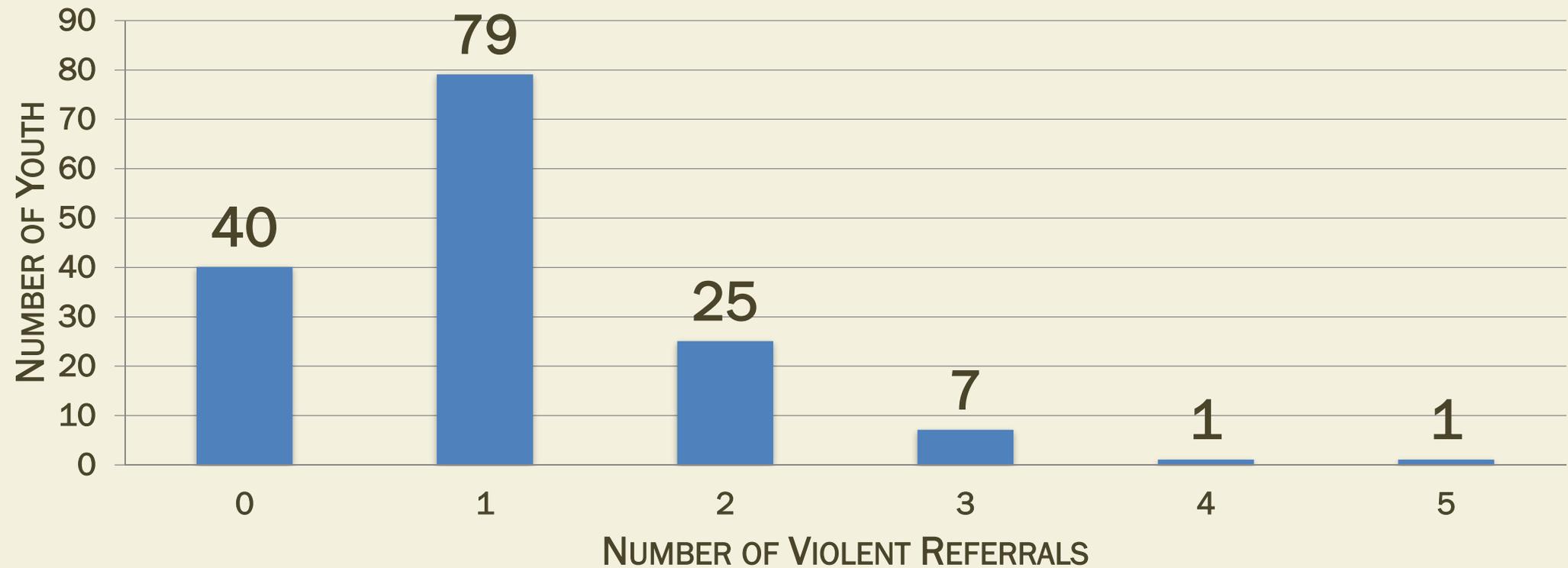
PAWS Participant Profile

RESIDENTIAL PLACEMENT PRIOR TO TJJD COMMITMENT



PAWS Participant Profile

PRIOR VIOLENT REFERRALS



PAWS Participant Profile

YOUTH WITH SPECIALIZED TREATMENT NEEDS		
	# of Youth	% of Youth
Mental Health	109	67
Sexual Behavior	9	6
Violent Offender	82	50
Alcohol & Other Drug	101	62

What's Next for the PAWS Program?

- Continued expansion
- A new partnership with Service Dogs, Inc. Two PAWS dogs are currently in training to be certified mobility or hearing alert dogs.
- **PROGRAM EVALUATION!!!**

“I see my victim in my dog’s eyes.
When I look at him I know I can’t go
out and hurt someone again.”

“When you give of yourself to
another being, you provide a new
way to see the good in others as
well as yourself.”

“The K-9s teach us we are better at
doing good things than bad things.
Our K-9s reflect our personalities
and they are happy.”



Cris Burton, M.Ed.

CRIS.BURTON@TJJD.TEXAS.GOV

Daniel Gunter

- A **survival analysis** is used to analyze data in which the time until the event is the area of interest.
 - *The outcome can be any binary event, in this case recidivate or not recidivate.*

Daniel Gunter

■ QUESTIONS:

- *Of the youth who recidivate, whether for technical violations or new offenses, what is the length of time between their release and the recidivistic event?*
- *Do youth released to parole typically recidivate faster than those that are discharged directly from residential?*
- *Do youth who commit technical violations recidivate faster than those who are arrested for a new offense?*

Daniel Gunter

- Cohort of youth released to parole and youth discharged directly from residential (for age of majority)
- If youth had a new commitment with an offense level of 'NA' and a commitment type of revocation, then they were placed in the revocation cohort and the recidivism date was the earliest of the revocation or arrest (if both were present).
- If the youth had multiple arrest dates then the earliest arrest date occurring after the youth's move to parole was used.
- If we revoke a youth, and that youth is also arrested for a new offense, how do we classify him or her?
 - *Just have to pick an approach and stick to it.*
 - *Arrest data can be very convoluted.*

Months to Recidivism – Release Type

RELEASES FROM TJJD													
Months to First Recidivistic Event													
Released FY 2012 - 2015	Months												
	0	1	2	3	4	5	6	7	8	9	10	11	12
Total N	583	27	56	48	62	63	50	65	44	63	36	27	42
Total %		4.6%	9.6%	8.2%	10.6%	10.8%	8.6%	11.1%	7.5%	10.8%	6.2%	4.6%	7.2%
Cumulative %		4.6%	14.2%	22.5%	33.1%	43.9%	52.5%	63.6%	71.2%	82.0%	88.2%	92.8%	100.0%
Total Recidivism Survival	100.0%	95.4%	85.8%	77.5%	66.9%	56.1%	47.5%	36.4%	28.8%	18.0%	11.8%	7.2%	0.0%
Parole N	492	24	47	43	52	56	45	58	34	50	28	22	33
Parole %		4.9%	9.6%	8.7%	10.6%	11.4%	9.1%	11.8%	6.9%	10.2%	5.7%	4.5%	6.7%
Cumulative %		4.9%	14.4%	23.2%	33.7%	45.1%	54.3%	66.1%	73.0%	83.1%	88.8%	93.3%	100.0%
Parole Recidivism Survival	100.0%	95.1%	85.6%	76.8%	66.3%	54.9%	45.7%	33.9%	27.0%	16.9%	11.2%	6.7%	0.0%
Discharge N	91	3	9	5	10	7	5	7	10	13	8	5	9
Discharge %		3.3%	9.9%	5.5%	11.0%	7.7%	5.5%	7.7%	11.0%	14.3%	8.8%	5.5%	9.9%
Cumulative %		3.3%	13.2%	18.7%	29.7%	37.4%	42.9%	50.5%	61.5%	75.8%	84.6%	90.1%	100.0%
Discharge Recidivism Survival	100.0%	96.7%	86.8%	81.3%	70.3%	62.6%	57.1%	49.5%	38.5%	24.2%	15.4%	9.9%	0.0%

Months to Technical Violation

RELEASES FROM TJJD

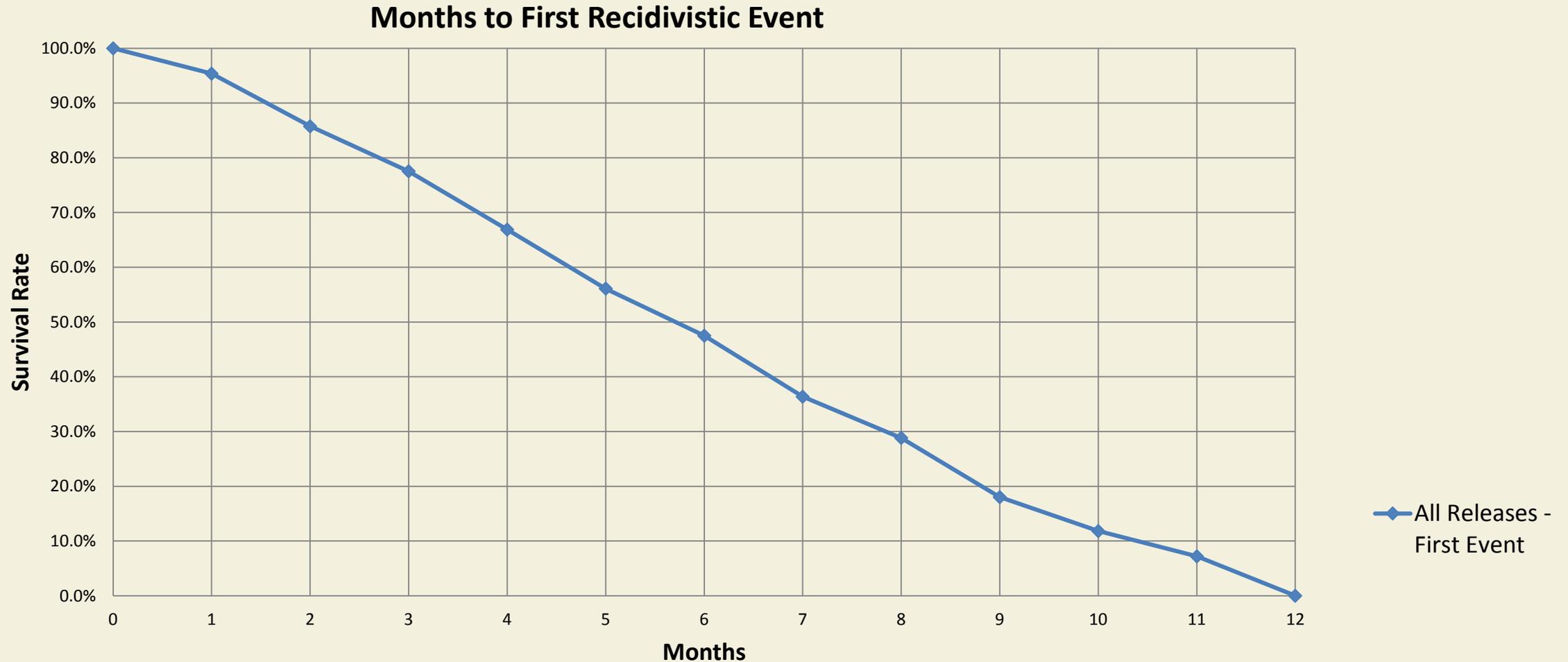
Months to Technical Violation (Revocation)

Released FY 2012 - 2015	Months												
	0	1	2	3	4	5	6	7	8	9	10	11	12
N	102	6	9	13	16	8	14	13	7	10	5	1	0
Secure %		5.9%	8.8%	12.7%	15.7%	7.8%	13.7%	12.7%	6.9%	9.8%	4.9%	1.0%	0.0%
Cumulative %		5.9%	14.7%	27.5%	43.1%	51.0%	64.7%	77.5%	84.3%	94.1%	99.0%	100.0%	100.0%
Secure Misd B Recidivism	100.0%	94.1%	85.3%	72.5%	56.9%	49.0%	35.3%	22.5%	15.7%	5.9%	1.0%	0.0%	0.0%

Months to Misdemeanor B or Higher

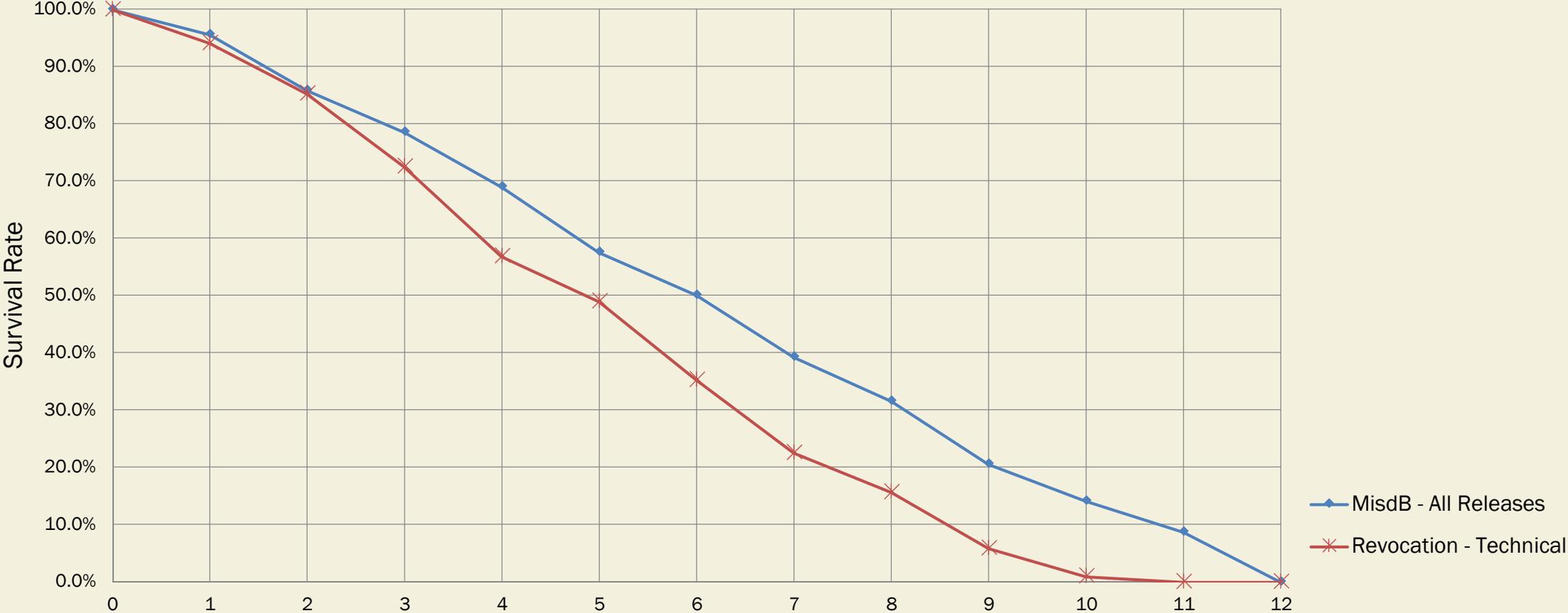
RELEASES FROM TJJD													
Months to Misdemeanor B or Higher													
Released FY 2012 - 2015	Months												
	0	1	2	3	4	5	6	7	8	9	10	11	12
N	481	21	47	35	46	55	36	52	37	53	31	26	42
Secure %		4.4%	9.8%	7.3%	9.6%	11.4%	7.5%	10.8%	7.7%	11.0%	6.4%	5.4%	8.7%
Cumulative %		4.4%	14.1%	21.4%	31.0%	42.4%	49.9%	60.7%	68.4%	79.4%	85.9%	91.3%	100.0%
Secure Misd B Recidivism	100.0%	95.6%	85.9%	78.6%	69.0%	57.6%	50.1%	39.3%	31.6%	20.6%	14.1%	8.7%	0.0%

Survival – Months to First “Recidivistic Event”



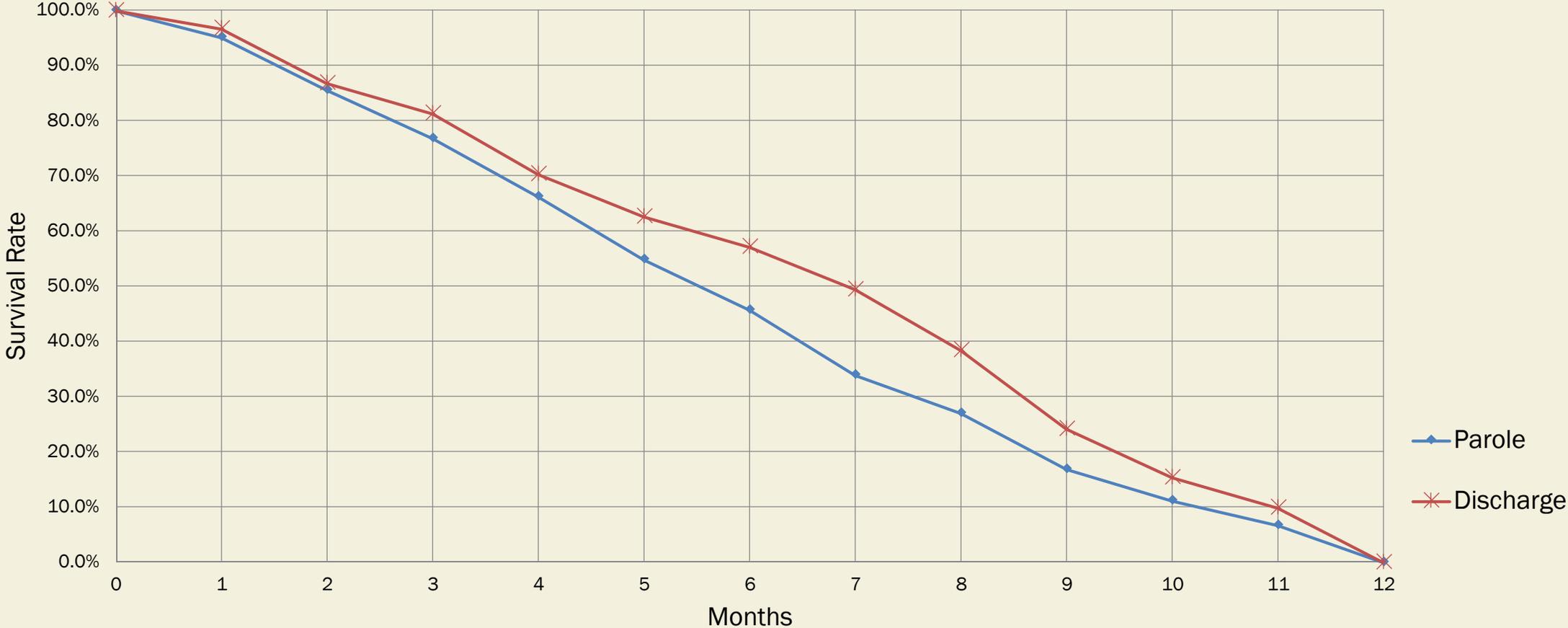
Survival – Revocations vs. Misd B

Revocation vs. Misd B - All Release Types



Survival – Parole vs. Discharge

Months to First Recidivistic Event - Parole vs. Discharge



Daniel Gunter

■ FINDINGS:

- *Youth revoked for a technical offenses recidivate at a faster rate than those arrested for a new offense.*
- *Youth released to parole recidivate at a faster rate than those who are discharged directly from residential.*

■ FURTHER QUESTIONS:

- *How does the state of being on parole impact a youth's probability to recidivate?*
- *What variables influence a youth's survivability?*
- *Can we identify what's different about our "survivors?"*

Chara Heskett

- Referrals & Dispositions Fiscal Year to Date Analysis:

- *Often asked if there is an increase or decrease in referrals and dispositions between fiscal years*

- Informative to determine:

- *If we should expect increases or decreases in referrals in the next fiscal year overall or based on offense type*
- *Cause of increase in new admissions to TJJD based on referral and disposition patterns*
 - Increase in felony offense referrals
 - Increase in TJJD commitment dispositions

Referrals Fiscal Year to Date Analysis:

- Referrals:
 - *TJJD Category (from Stat Report)*
 - *Offense Category*
 - E.g. felony, misdemeanor, violation of court order
 - *Current month totals*
 - *Fiscal Year 2014 – 2015 percent change*
 - *Fiscal Year to Date 2015 – 2016 percent change*
 - *Completed for State and Regional totals*

TJJD Monthly Referrals by Offense Category

May 2016

Formal Referrals

TJPC Category		Current Month	FY 2014	FY 2015	FY 14-15 % Change	FYTD 2016	FYTD 2015	YTD 15-16 % Change
1	Homicide	3	39	48	→ 23%	41	41	0%
2	Attempt. Homicide	0	8	1	-88%	3	1	→ 200%
3	Sexual Assault	121	1375	1326	-4%	1021	971	→ 5%
4	Robbery	80	862	1020	→ 18%	908	759	→ 20%
5	Assaultive	368	2926	3231	→ 10%	2640	2671	-1%
6	Other Violent	4	29	40	→ 38%	16	31	-48%
7	Burglary	226	3002	2711	-10%	2048	1924	→ 6%
8	Theft	161	1482	1942	→ 31%	1335	1378	-3%
9	Other Property	73	1207	1167	-3%	708	895	-21%
10	Drug offenses	129	1398	1328	-5%	1090	1132	-4%
11	Weapons Offenses	48	388	382	-2%	362	333	→ 9%
12	Other Felony	134	1191	1203	→ 1%	1133	897	→ 26%
13	Misd. Weapons Offenses	32	239	279	17%	247	204	21%
14	Misd. Assaultive	894	8646	8827	2%	7183	7193	0%
15	Misd. Theft	371	6606	6263	-5%	3426	4818	-29%
16	Misd. Other Property	247	2507	2555	2%	1887	1887	0%
17	Misd. Drug Offenses	643	8315	7063	-15%	5811	6038	-4%
18	Other Misdemeanor	555	5477	5752	5%	4514	4510	0%
19	Contempt of Magistrate	12	1679	1280	-24%	130	1156	-89%
20	Violation of Court Order	761	10205	10254	0%	7121	7929	-10%
21	Truancy	0	911	903	-1%	13	759	-98%
22	Runaway	299	3190	3310	4%	2482	2479	0%
23	Alt. Ed. Expulsion	25	312	247	-21%	241	228	6%
24	CINS Property (was theft)	8	111	83	-25%	71	69	3%
25	CINS Disorderly Conduct	3	67	49	-27%	25	37	-32%
26	CINS Drugs	1	55	39	-29%	24	35	-31%
27	CINS Liquor Laws	3	62	58	-6%	22	51	-57%
28	CINS Sex Offenses	1	13	25	92%	4	16	-75%
29	Other CINS	42	1448	1115	-23%	498	971	-49%
00	Crisis Intervention	30	330	266	-19%	240	195	23%

	Current Month	FY 2014	FY 2015	FY 14-15 % Change	FYTD 2016	FYTD 2015	YTD 15-16 % Change
Violent Felony	576	5239	5666	→ 8%	4629	4474	→ 3%
Other Felony	771	8668	8733	→ 1%	6676	6559	→ 2%
Misdemeanor	2754	33469	32019	-4%	23198	25806	-10%
VOP	761	10205	10254	0%	7121	7929	-10%
Status	324	4413	4460	1%	2736	3466	-21%
Other CINS	88	2086	1635	-22%	884	1374	-36%
Grand Total	5274	64080	62767	-2%	45244	49608	-9%

Dispositions Fiscal Year to Date Analysis:

- Dispositions
 - *Disposition type*
 - *Current month totals*
 - *Fiscal Year 2014 – 2015 percent change*
 - *Fiscal Year to Date 2015 – 2016 percent change*
 - *Completed for State and Regional totals*

TJJD Monthly Dispositions by Type

May 2016

Formal Referrals

Disposition Type	Current Month	FY 2014	FY 2015	FY 14-15 % Change	FYTD 2016	FYTD 2015	YTD 15-16 % Change
Dismissed	1127	13951	14795	→ 6%	10330	11087	-6.8%
Supv. Caution	951	13801	13139	-5%	8097	9744	-16.9%
Deferred	1271	16266	16029	-1%	10736	12009	-10.6%
Probation	1221	16685	16067	-4%	10966	11891	-7.8%
TJJD	72	801	826	→ 3%	619	627	-1.3%
Cert. Adult	13	143	115	-20%	114	83	→ 37.3%
Grand Total	4655	61647	60971	-1%	40862	45441	-10.1%

Indeterminate Commitment Dispositions

Fiscal Year Change by Month Indeterminate Commitments					
		FYTD 2015	FYTD 2016	% Change Indeterminate	Actual Change Indeterminate
FYMonth	September	55	64	16%	9
	October	71	74	4%	3
	November	58	57	-2%	-1
	December	42	49	17%	7
	January	52	54	4%	2
	February	55	58	5%	3
	March	67	45	-33%	-22
	April	69	58	-16%	-11
	May	66	63	-5%	-3
	June				
	July				
	August				
Total		535	522	-2%	-13

Determinate Commitment Dispositions

Fiscal Year Change by Month Determinate Commitments					
		FYTD 2015	FYTD 2016	% Change Determinate	Actual Change Determinate
FYMonth	September	12	13	8%	1
	October	10	10	0%	0
	November	8	15	88%	7
	December	0	13	#DIV/0!	13
	January	9	5	-44%	-4
	February	14	5	-64%	-9
	March	11	15	36%	4
	April	10	12	20%	2
	May	18	9	-50%	-9
	June				
	July				
	August				
Total		92	97	5%	5

Jocelyn Lewis

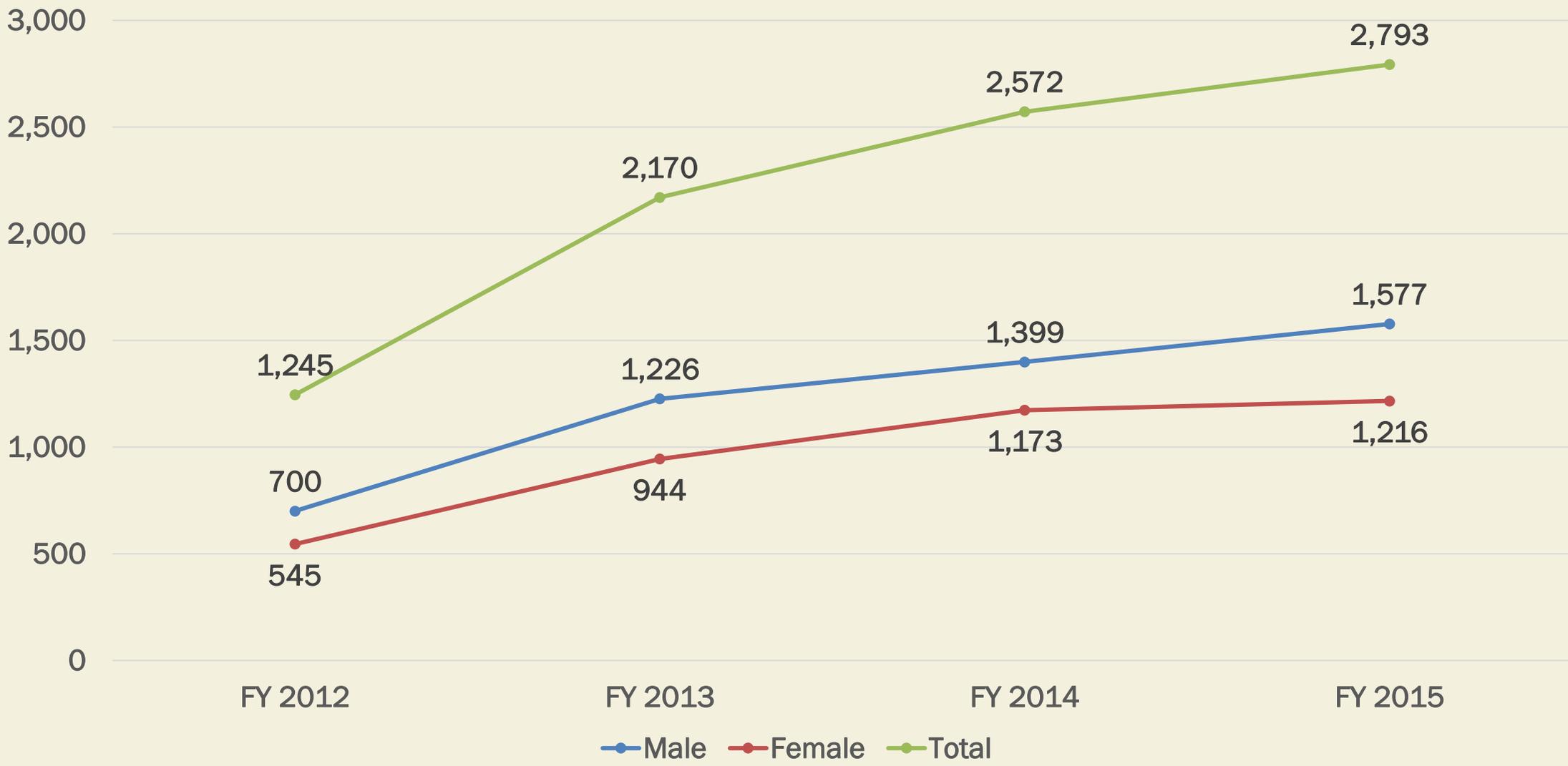
TJJD Prevention/Intervention Grants

- To provide funding for programs and services to prevent or intervene in at-risk behaviors that lead to delinquency, truancy, and later referral to the juvenile justice system.
 - *Grant S = Prevention and Intervention Demonstration Project*
 - *Grant T = School Attendance Improvement Project*
- Departments receiving Grant S and/or Grant T need to track youth participating in these grant funded prevention and intervention programs.

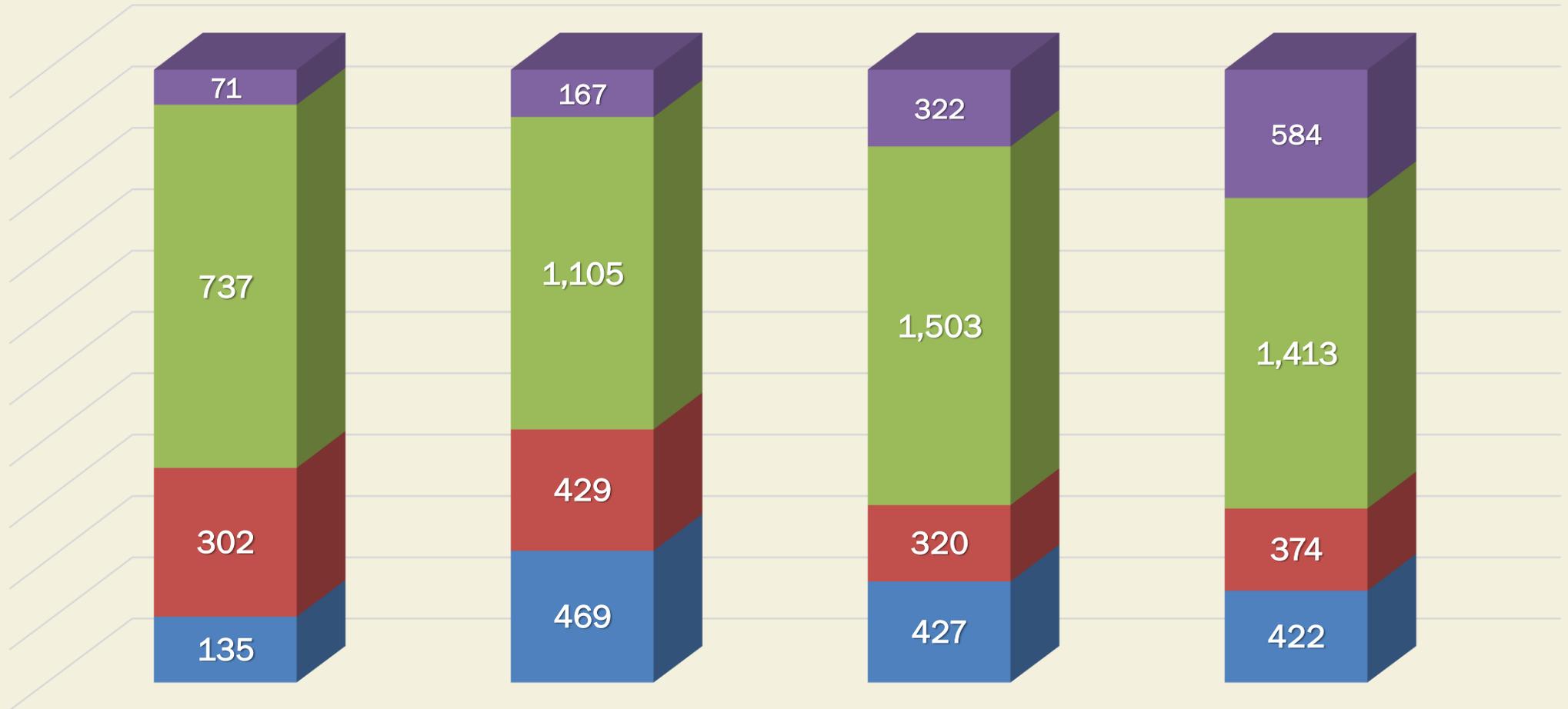
Eligible population:

- At-risk youth ages 6-17 and their families
- Not currently under jurisdiction of the juvenile court
- Not under active supervision of the juvenile probation department
- No pending formal referrals
- No prior referrals for a felony offense

Youth Starting Grant S or T Funded Prevention/Intervention Programs



Youth Starting Grant S or T Funded Prevention/Intervention Programs



FY 2012 N = 1,245

FY 2013 N = 2,170

FY 2014 N = 2,572

FY 2015 N = 2,793

■ White ■ Black ■ Hispanic ■ Other

Average Age at Referral Date

- FY 2012 = 10.7 years
- FY 2013 = 11.8 years
- FY 2014 = 11.3 years
- FY 2015 = 11.6 years

Outcome Performance Measures

Completion Rate

- FY 2012 – 96%
- FY 2013 – 91%
- FY 2014 – 92%
- FY 2015 – 91%

Re-Referral Rate

- FY 2012 – 4.1% re-referral within one year
- FY 2013 – 5.6% re-referral within one year
- FY 2014 – 4.4% re-referral within one year

Other Outcome Performance Measures

- School Attendance
- School Disciplinary Referrals

Reminders

- Send signed consent forms quarterly to Amy.Miller@tjjd.texas.gov or mail to TJJD Probation and Community Services, Attn: Prevention and Intervention Services
- End of Year Program Summary Reports for Grant S and Grant T are due October 1st to Amy.Miller@tjjd.texas.gov or mail to TJJD Probation and Community Services, Attn: Prevention and Intervention Services

Glenn Like

Projections

- An Overview

What is a Projection?

- A mathematical extension of ongoing or developing conditions into the future.
- Excel gives you some easy-to-use basic projection options.
- “Easy-to-use” doesn’t always mean “right” or “best fit.” You may find that you need to use more complicated projections.

TJJD Does Use Projections and So Could Your Agency

- The LBB and TJJD use projections for :
 - *Budget process: total amount of resources (staff and beds) that will be necessary based on how many juveniles will be in our system,*
 - *Management/resource allocation: if the number of juveniles referred for robbery is expected to increase, we can shift resources to programs that juveniles referred for robbery have traditionally taken, and*
 - *Evaluation purposes: Part of how we can judge a program is by comparing what we thought was going to happen before the program was implemented with what did happen when the program was implemented.*
- *Your agency could use projections for similar purposes.*
- *You could also use them to estimate program impact, which is particularly useful for grant applications or budget requests. Doing so is similar to the evaluation use, but you assume the difference was caused by the program.*

How You Should Use Projections

- Ideally you will create a couple of different projections, called scenarios. These can and should have different assumptions.
- You will work with probation staff and management to figure out which scenario seems best and reflects what is likely to happen (such as legislative or demographic changes). You may have to build a new scenario.
- This should be part of a regular process (annually, biannually, quarterly, or monthly based on your needs).

Considerations

- Short-term projections are almost always better than long-term ones, because things change over time.
- You should have a really good reason to expect a big change.
- If you are projecting the average # of youths, you may need to consider the maximum # of youths as well.
- The simple projections we will talk about shortly will only get you so far. More complicated projections will require training and possibly more advanced software or the services of a consultant/arrangement with a university.

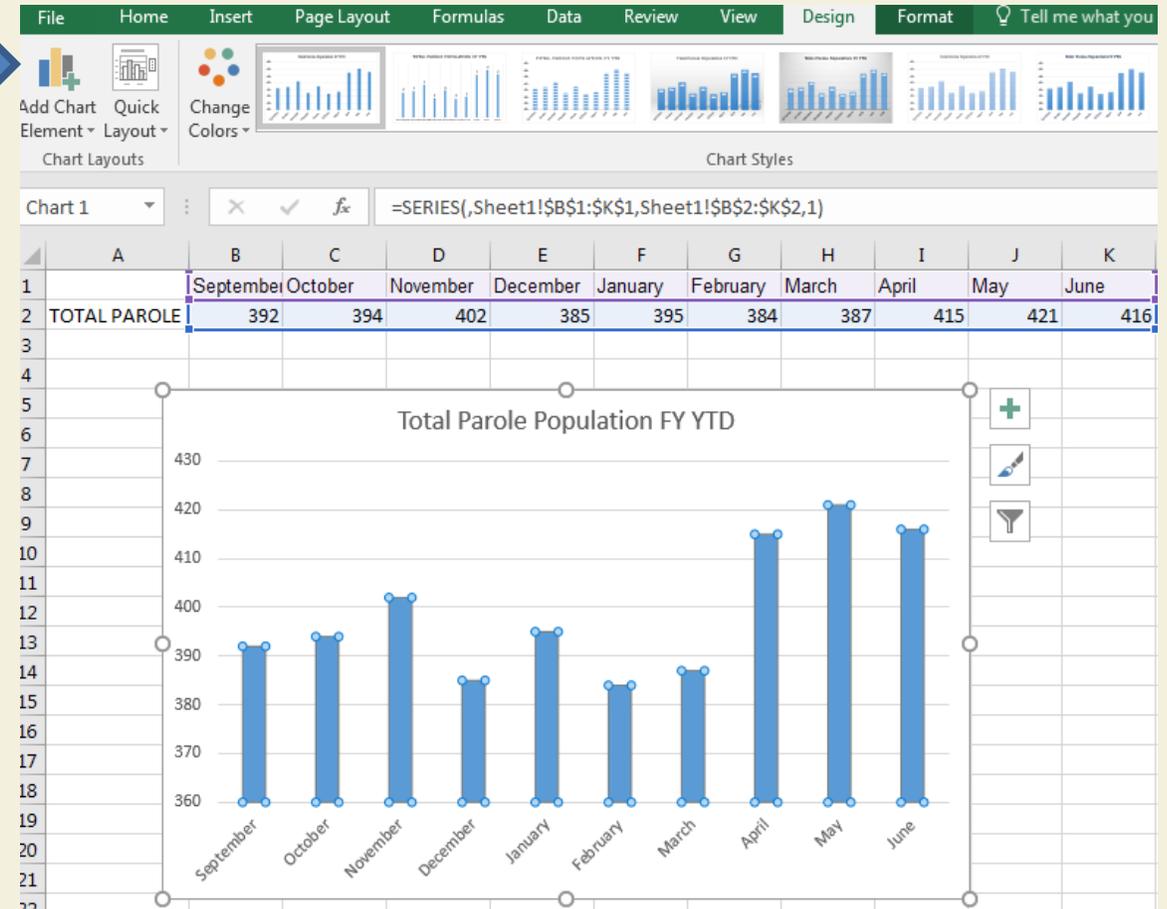
Build a Projection



- Start by creating a bar or line graph. If you would like to know more about creating graphs in Excel, come to the Beginners Use of Excel for Analysis Session.

- Click somewhere on the graph. You will see Design and Format added to the top level (the one that has File, Home, and Insert on it). Click on Design.

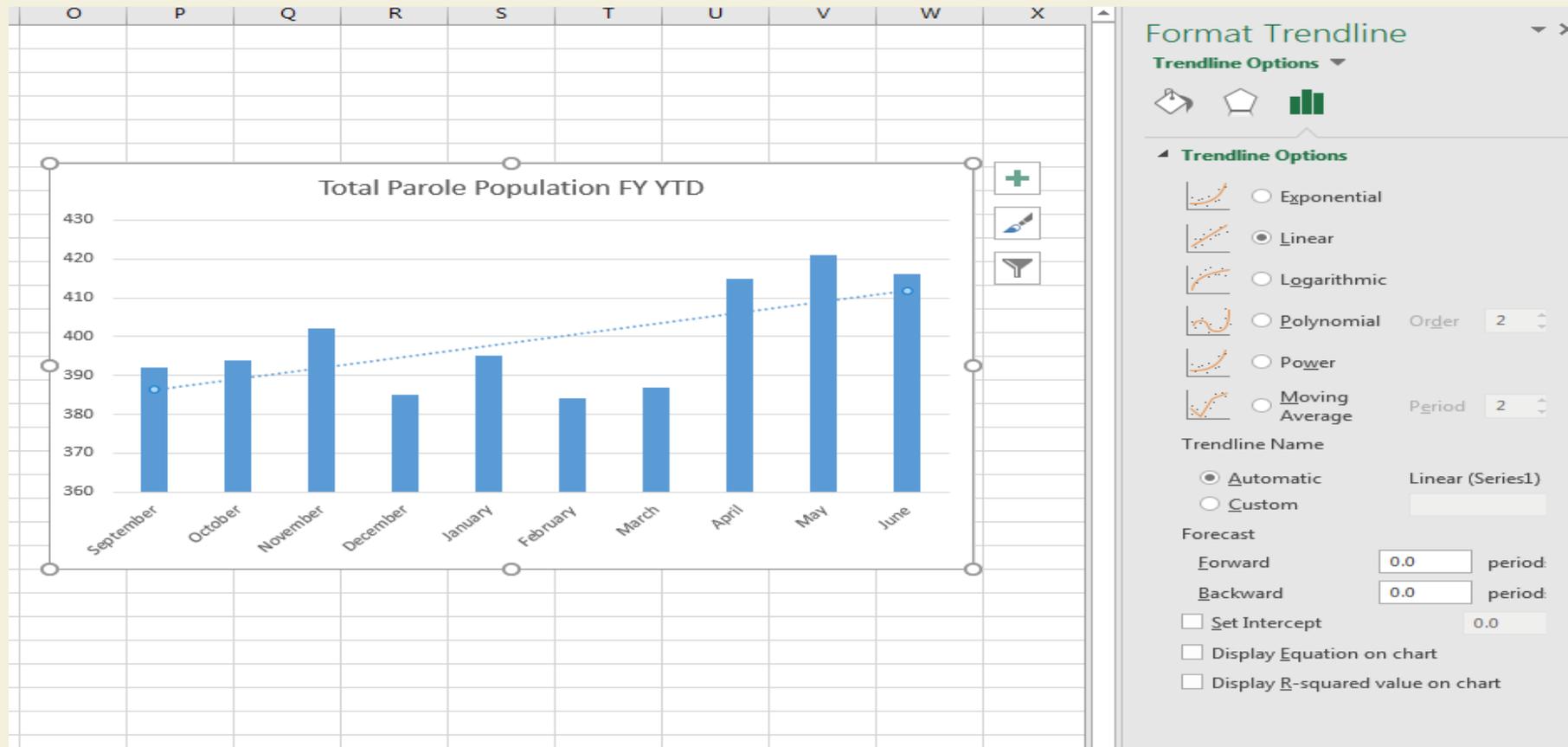
- Click on Add Chart Elements in the top left corner.



Trendlines

- One of the options you will see will be Trendline.
- Click on that. Click on any of the options except for None. You will probably end up playing around with them, so the first one doesn't matter.
- A line will show up on your graph. Right click on it.
- A new section of the screen will open up.

Format Trendline Screen Shot



R-squared

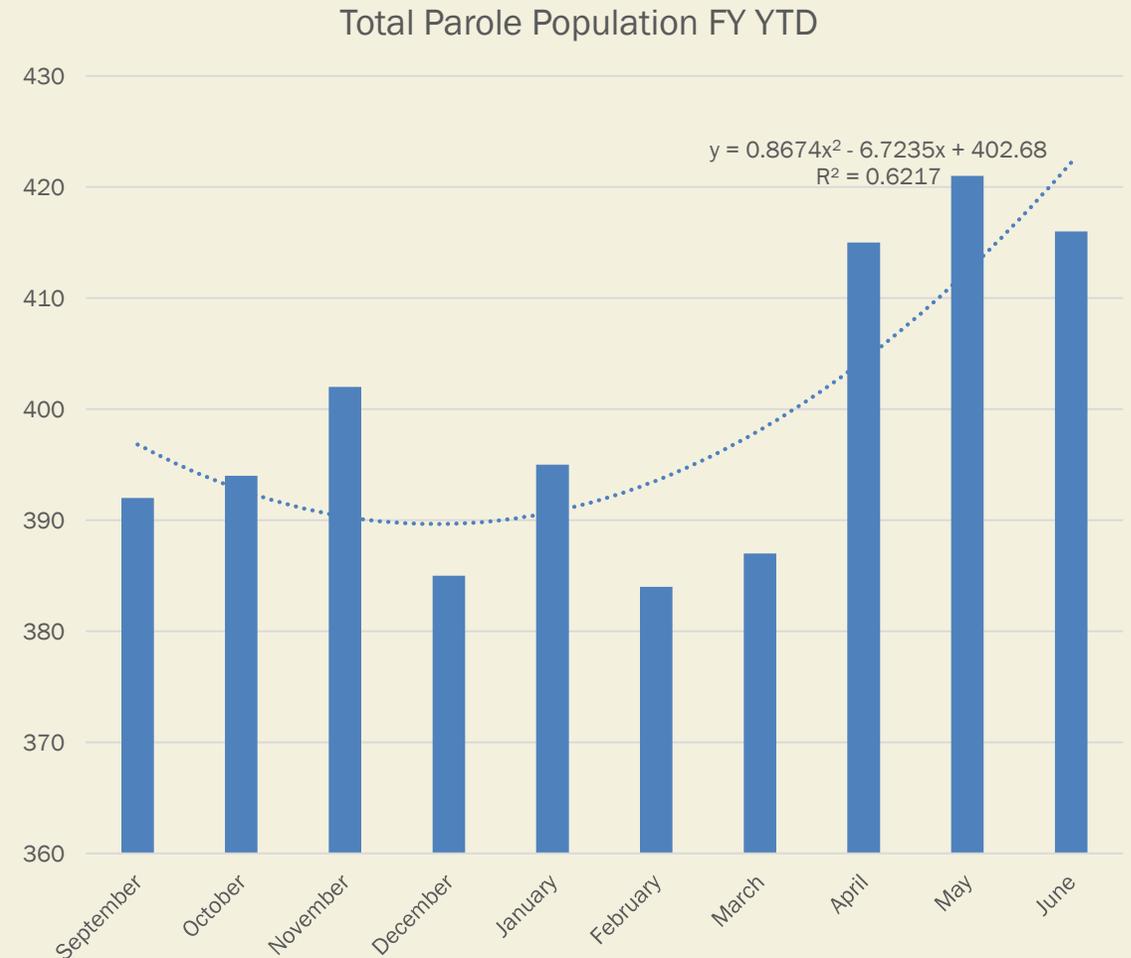
- Towards the bottom of the page is Display R-squared value on chart.
- R-squared varies from 0 to 1, and the closer to 1 the better.
- Ideally your scenarios should all be pretty close to 1. Remember the biggest R-squared might not be the best. If they are all less than 0.5, then you should probably think about an advanced projection.

Trendline Options

- You might have noticed that there are a bunch of different options for the trendline. For the most part, you should stick to:
 - *Linear: gives you a line.*
 - *Polynomial: gives you curves, either one that eventually resembles a bowl (either goes up then down or goes down then up) if you pick 2 or one that eventually resembles a lightning bolt (goes up, weird stuff around zero, then keeps going up or goes down, weird stuff around zero, then keeps going down) if you pick 3.*

I Picked a Good Trendline, What Now?

- Click Display Equation on Chart. This will give you the equation that Excel has calculated for the trendline.
- You would enter $=0.8674*11*11-6.7235*11+402.68$ into an Excel cell to estimate July's number (Excel is counting the instances, so September=1, October=2, etc., and July would be the 11th instance).



Data-Informed Decision-Making

