



# Changes in Latent Print Examinations as a Result of Technical Review

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# Background

- Re-Worked an Erroneous Identification case
- What other types of errors are made by latent examiners and potentially never caught?
- Studies approaching case work – training, proficiency
- ISP – 100% technical review

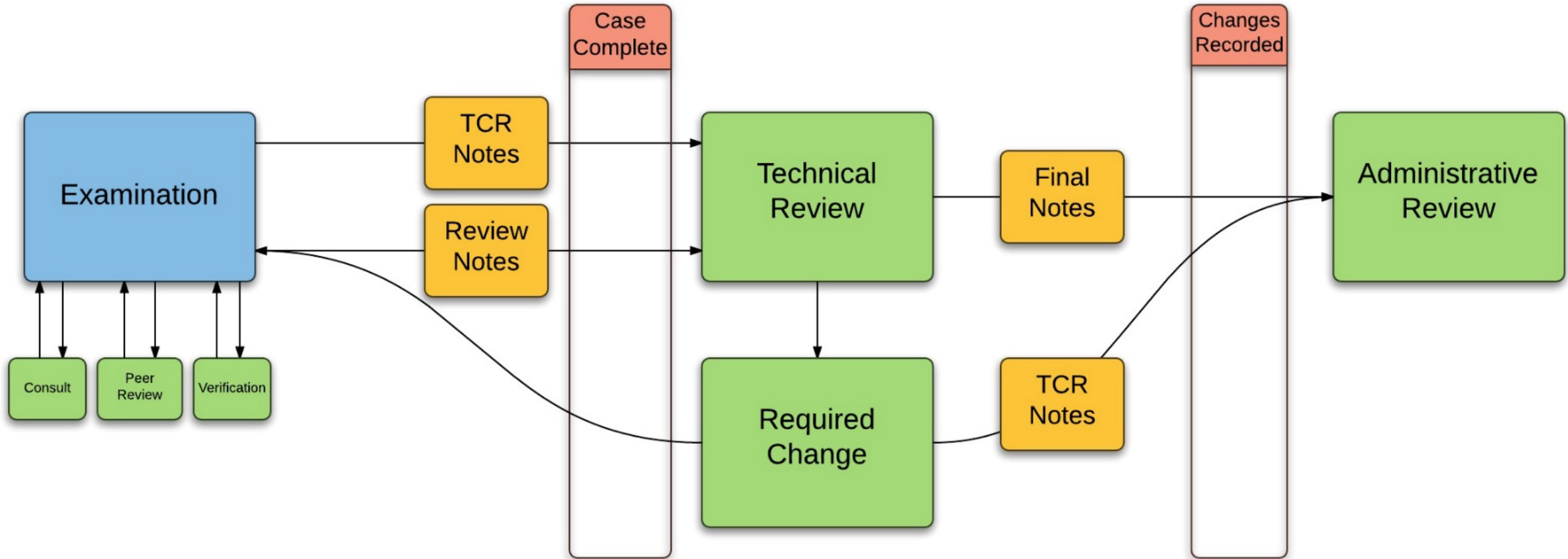
# Data Collected

- Collected over 2.5 years
- 11 examiners
  - Only 10 used in averages
- No Erroneous Identifications were found
- Changes were categorized as
  - Significant
  - Non-Significant
- Changes were counted by case
  - All Significant Changes recorded separately
- If a case had both significant and non-significant changes - only categorized as significant

# Categories of Changes

- Non-Significant
  - Clerical errors
  - Spelling errors
  - Documentation
- Significant
  - Analysis
    - Latent B originally marked NOV; Latent B of value, not ID'd
  - Comparison
    - Latent print comparison originally inconclusive was identified
  - Wrong Finger/ Person
    - Wrong finger documented for ID

# Exam Process



Examiner	Cases	Large Cases	Extremely large cases	LOV's	Cases with LOV's	% of Cases with LOV's	Average # of LOV's in cases with LOV's	% of LOV's ID'd	ID's	Cases with ID's	% of Cases with ID's	% of Cases with LOV's with ID's	Similarities	% of agreement reported as similarities	Exclusions
115123	323	0	2	975	167	51.70%	5.84	27.18%	265	68	21.05%	40.72%	83	23.85%	61
354167	443	0	0	657	166	37.47%	3.96	39.57%	260	77	17.38%	46.39%	38	12.75%	47
392630	338	0	0	388	149	44.08%	2.60	25.77%	100	50	14.79%	33.56%	14	12.28%	10
643697	339	0	0	455	177	52.21%	3.69	38.28%	250	92	27.14%	51.98%	34	11.97%	40
705702	239	0	0	712	136	56.90%	5.24	47.47%	338	97	40.59%	71.32%	23	6.37%	79
709881	521	1	0	1210	314	60.27%	3.85	28.93%	350	123	23.61%	39.17%	86	19.72%	37
761103	304	0	0	531	166	54.61%	3.20	37.66%	200	71	23.36%	42.77%	9	4.31%	27
831750	311	2	0	730	183	48.84%	3.99	30.96%	226	87	27.97%	47.54%	26	10.32%	9
837592	173	0	0	370	91	52.60%	4.07	30.54%	113	32	18.50%	35.16%	39	25.66%	24
906299	236	0	0	364	98	41.53%	3.71	42.03%	153	49	20.76%	50.00%	8	4.97%	15
968196	92	0	0	186	47	51.09%	3.96	46.24%	86	22	23.91%	46.81%	8	8.51%	9
<b>Unit</b>	<b>3319</b>	<b>3</b>	<b>2</b>	<b>6776</b>	<b>1694</b>	<b>51.04%</b>	<b>4.00</b>	<b>34.55%</b>	<b>2341</b>	<b>768</b>	<b>23.14%</b>	<b>45.34%</b>	<b>368</b>	<b>13.58%</b>	<b>358</b>

**Review of 3319 cases**

**6776 Latents**

**2341 ID's (34.55% of latents)**

**768 cases (23.14%) had ID's**

**358 Latent Exclusions**

# Case Numbers

Examiner	Cases with Changes	% of Cases with Changes	Cases with only Non-Significant Changes	% of Cases with only Non-Significant Changes	Cases with Significant Changes	% of Cases with Significant Changes	% of Significant Changes that are Significant	Cases with Significant Changes or ID/Exclusion not verified	% of Cases with Significant Changes or ID/Exclusion not verified	Exclusions not verified	% of Exclusions Not Verified	ID's not verified	% of ID's Not Verified
	433	13.05%	355	10.70%	78	2.35%	18.01%	90	2.71%	9	2.45%	10	0.43%
115123	38	11.76%	33	10.22%	5	1.55%	13.16%	5	1.55%	4	6.15%	5	1.85%
354167	28	6.32%	21	4.74%	7	1.58%	25.00%	9	2.03%	0	0.00%	2	0.76%
392630	19	5.62%	18	5.33%	1	0.30%	5.26%	1	0.30%	0	0.00%	0	0.00%
643697	74	21.93%	65	19.20%	9	2.61%	15.68%	9	5.60%	0	0.00%	0	0.00%
705702	45	18.82%	39	16.32%	6	2.51%	13.33%	7	2.93%	3	3.66%	0	0.00%
709881	95	18.23%	83	15.93%	12	2.30%	12.63%	14	2.69%	1	2.63%	1	0.28%
761103	52	15.01%	43	11.01%	9	2.30%	17.50%	5	1.27%	0	0.00%	0	0.00%
831750	44	11.58%	36	11.58%	8	2.57%	18.18%	10	3.22%	1	10.00%	1	0.44%
837592	14	8.09%	8	4.62%	6	3.47%	42.86%	6	3.47%	0	0.00%	0	0.00%
906299	12	3.08%	9	3.81%	3	1.27%	25.00%	3	1.27%	0	0.00%	0	0.00%
968196	12	13.04%	10	10.87%	2	2.17%	16.67%	3	3.26%	0	0.00%	1	1.15%
<b>Unit</b>	<b>433</b>	<b>13.05%</b>	<b>355</b>	<b>10.70%</b>	<b>78</b>	<b>2.35%</b>	<b>18.01%</b>	<b>90</b>	<b>2.71%</b>	<b>9</b>	<b>2.45%</b>	<b>10</b>	<b>0.43%</b>

433 cases (13.05%) had changes

355 cases (10.70%) had non-significant changes

82% of changes

78 cases (2.35%) had significant changes

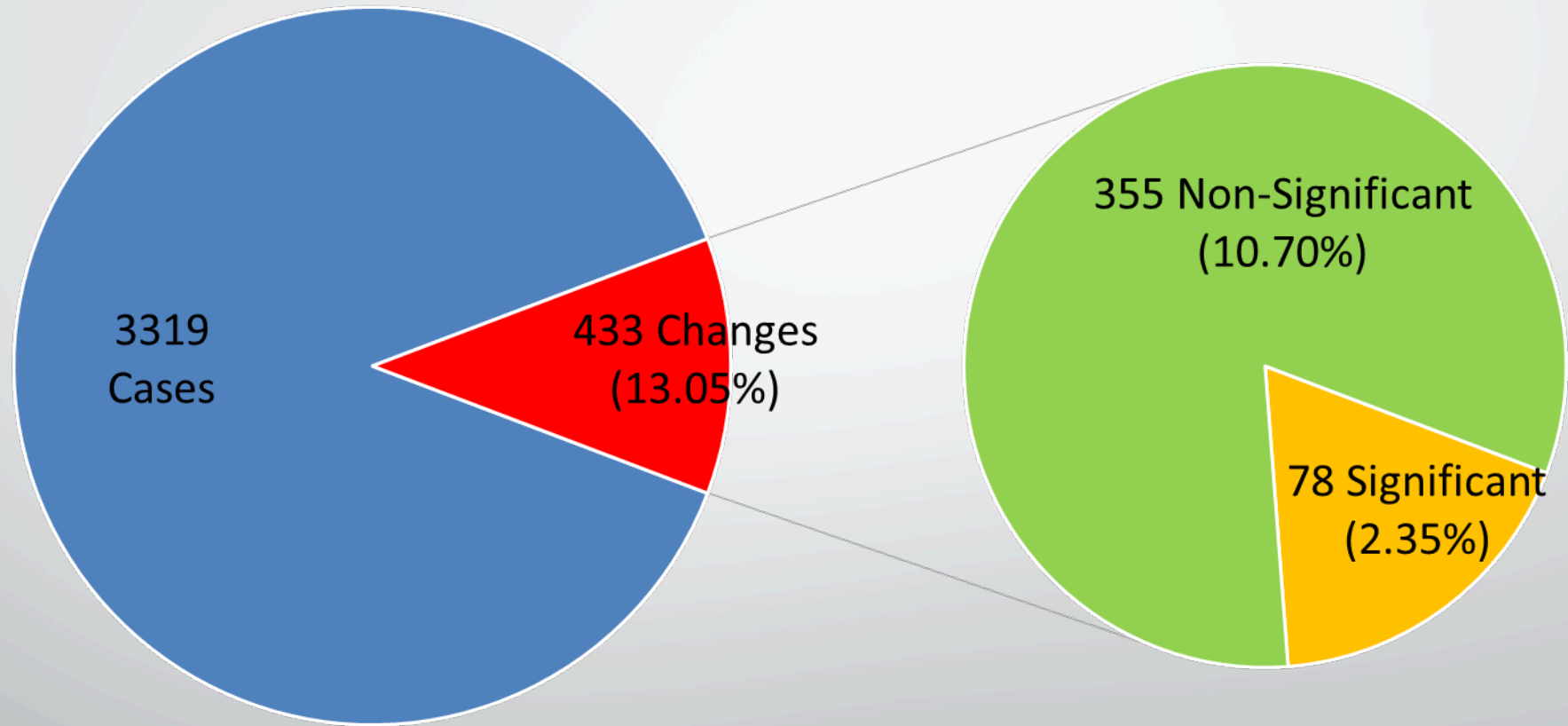
9 Exclusions were not verified (Reported as Inconclusive)

10 Identifications (0.43%) were not verified (Reported as Inconclusive)

90 Cases (2.71%) had significant changes or ID's/ Exclusions not verified



# 2013 - June 30, 2015 Latent Print Cases



■ Cases ■ Significant Changes ■ Non-Significant Changes



**Latent Print Significant Changes  
2013 – June 30, 2015  
80 Total in 78 cases (2.35%)**

**Of Value for Exclusion  
Changed to of Value  
1 (0.03%)**

**Similarities changed to ID  
2 (0.06%)**

**Change in Analysis of Latent  
6 (0.18%)**

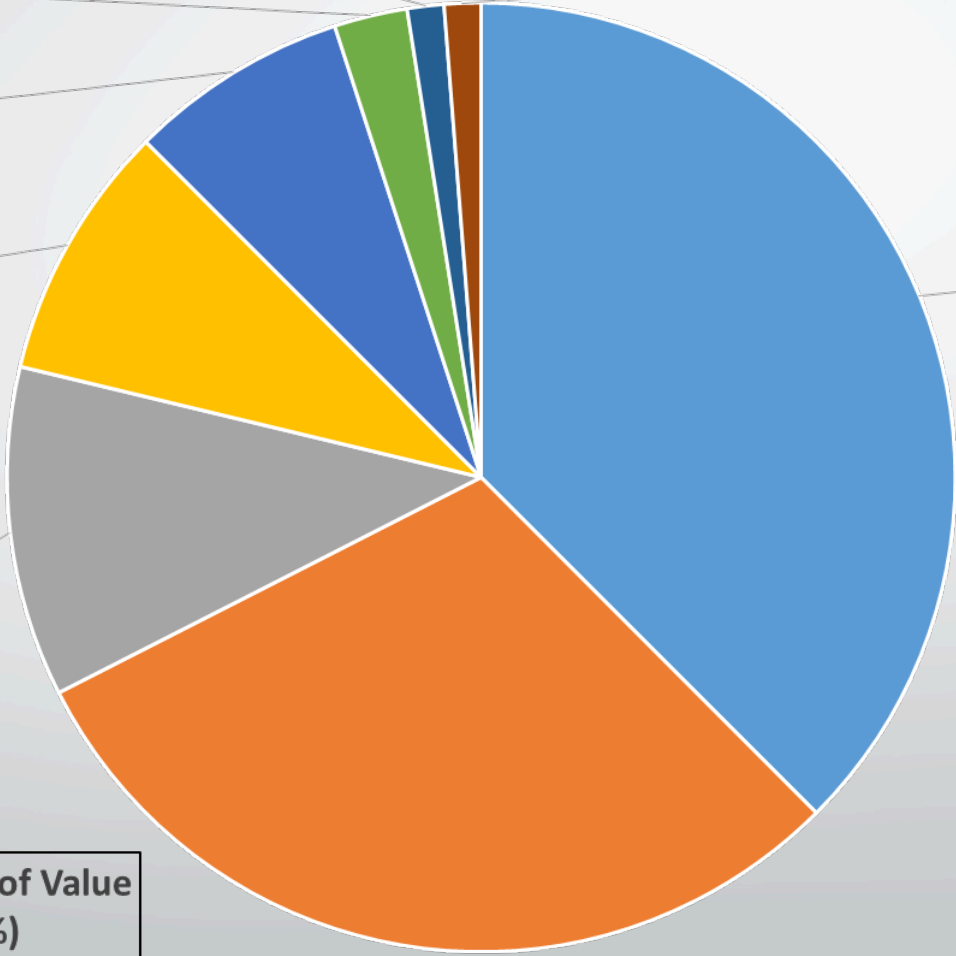
**NOV changed to of Value  
and ID'd  
7 (0.21%)**

**Inconclusive changed to  
Similarities Noted  
9 (0.27%)**

**Nov Changed to of Value  
24 (0.72%)**

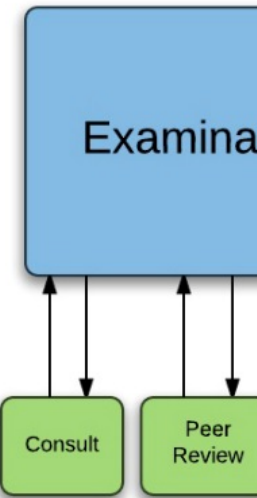
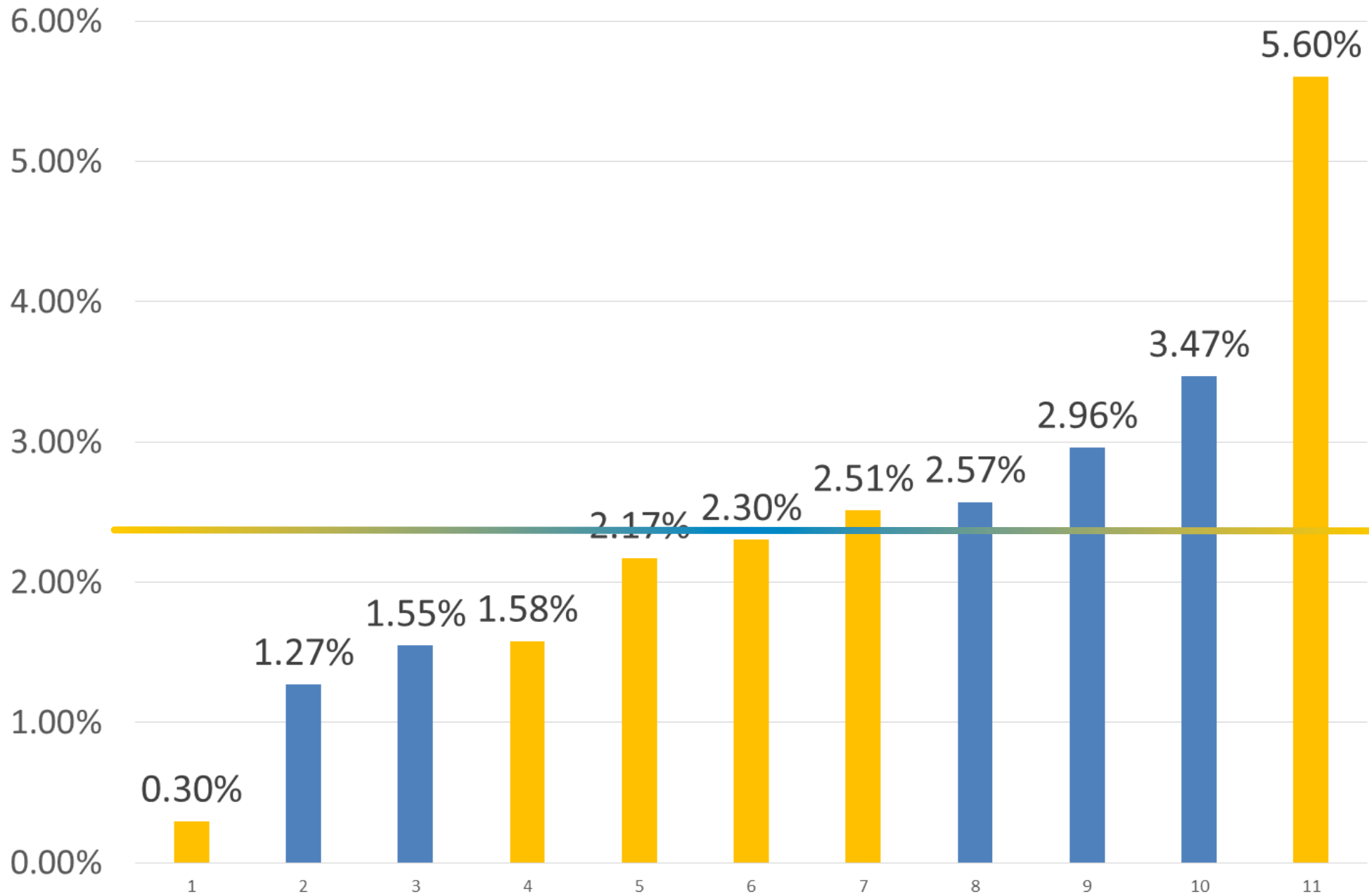
**Inconclusive changed to  
Exclusion  
1 (0.03%)**

**Inconclusive changed to ID  
30 (0.90%)**



Examiner	Cases with Changes with ID's	% of Cases with ID's with Changes	% of Cases with Changes With ID's	Cases with only non-significant Changes with ID's	% of cases with only non-significant changes with ID's	Cases with Significant Changes with ID's	% of cases with significant changes with ID's	Changes in Analysis or Comparison that resulted in Significant case changes	% of Cases with Changes in Analysis or Comparison that resulted in Significant case changes	% of Cases with ID's with Changes in Analysis or Comparison that resulted in Significant case changes
	215	27.99%	49.65%	157	44.23%	58	74.36%	23	0.39%	1.69%
115123	15	22.06%	39.47%	12	36.36%	3	60.00%	2	0.62%	2.94%
354167	11	14.28%	39.28%	6	28.57%	5	71.43%	0	0.00%	0.00%
392630	10	20.00%	52.63%	9	50.00%	1	100.00%	0	0.00%	0.00%
643697	4	4.8%	36%	3	75%	1	68.75%	3	0.88%	3.26%
705702	30	30.93%	66.67%	24	61.54%	6	100.00%	0	0.00%	0.00%
709881	14	35.57%	46.34%	11	35.49%	3	100.00%	1	1%	3.25%
761103	26	36.61%	50.00%	18	41.86%	8	88.89%	4	1.32%	5.63%
831750	24	27.59%	54.55%	20	55.56%	4	50.00%	0	0.00%	0.00%
837592	3	9.38%	21.43%	0	0.00%	3	50.00%	0	0.00%	0.00%
906299	5	10.20%	41.67%	2	22.22%	3	100.00%	0	0.00%	0.00%
968196	3	13.64%	25.00%	3	30.00%	0	0.00%	0	0.00%	0.00%
Unit	215	27.99%	49.65%	157	44.23%	58	74.36%	23	0.39%	1.69%

# % of Cases with Significant Changes

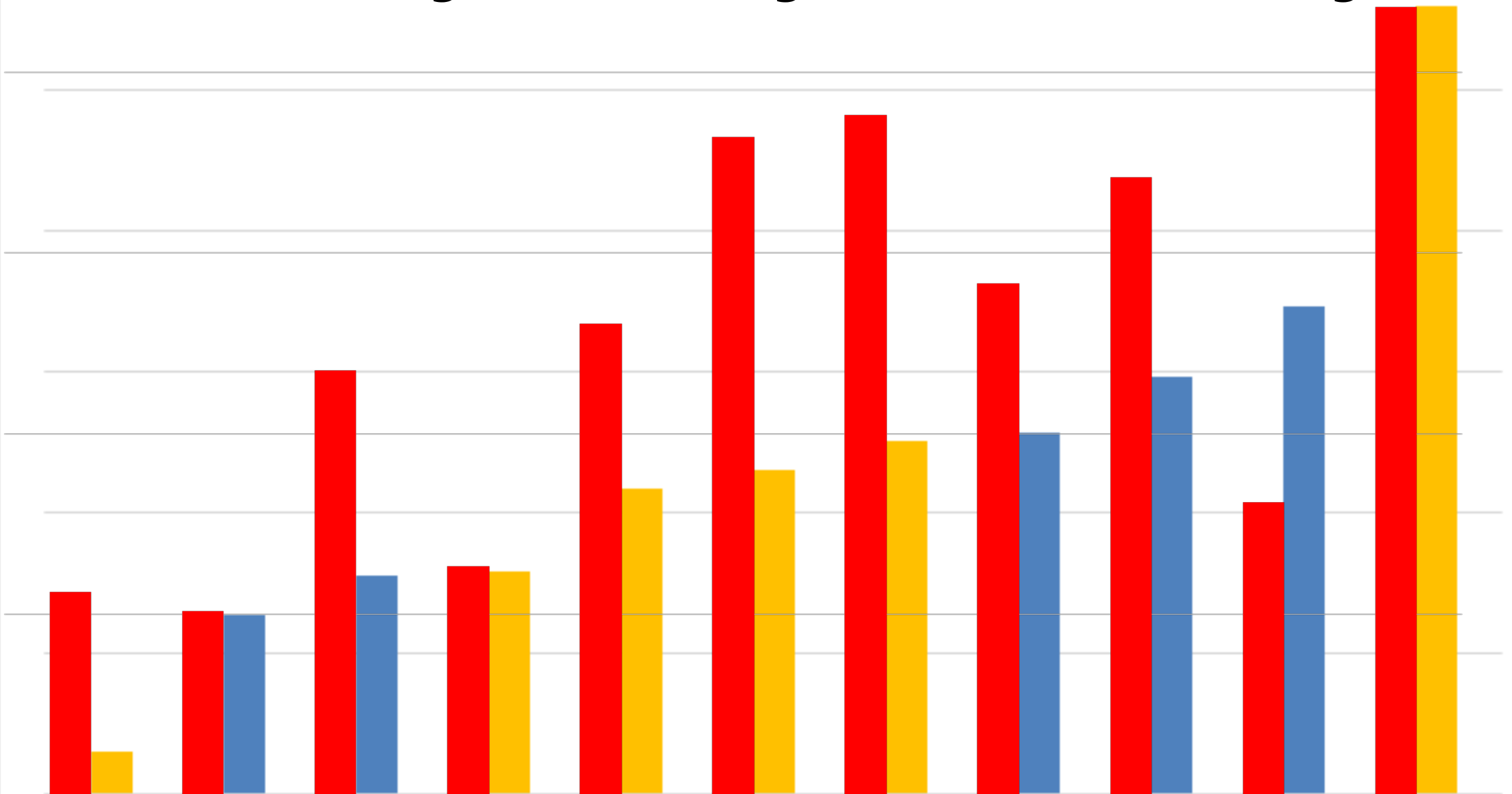


Administrative review

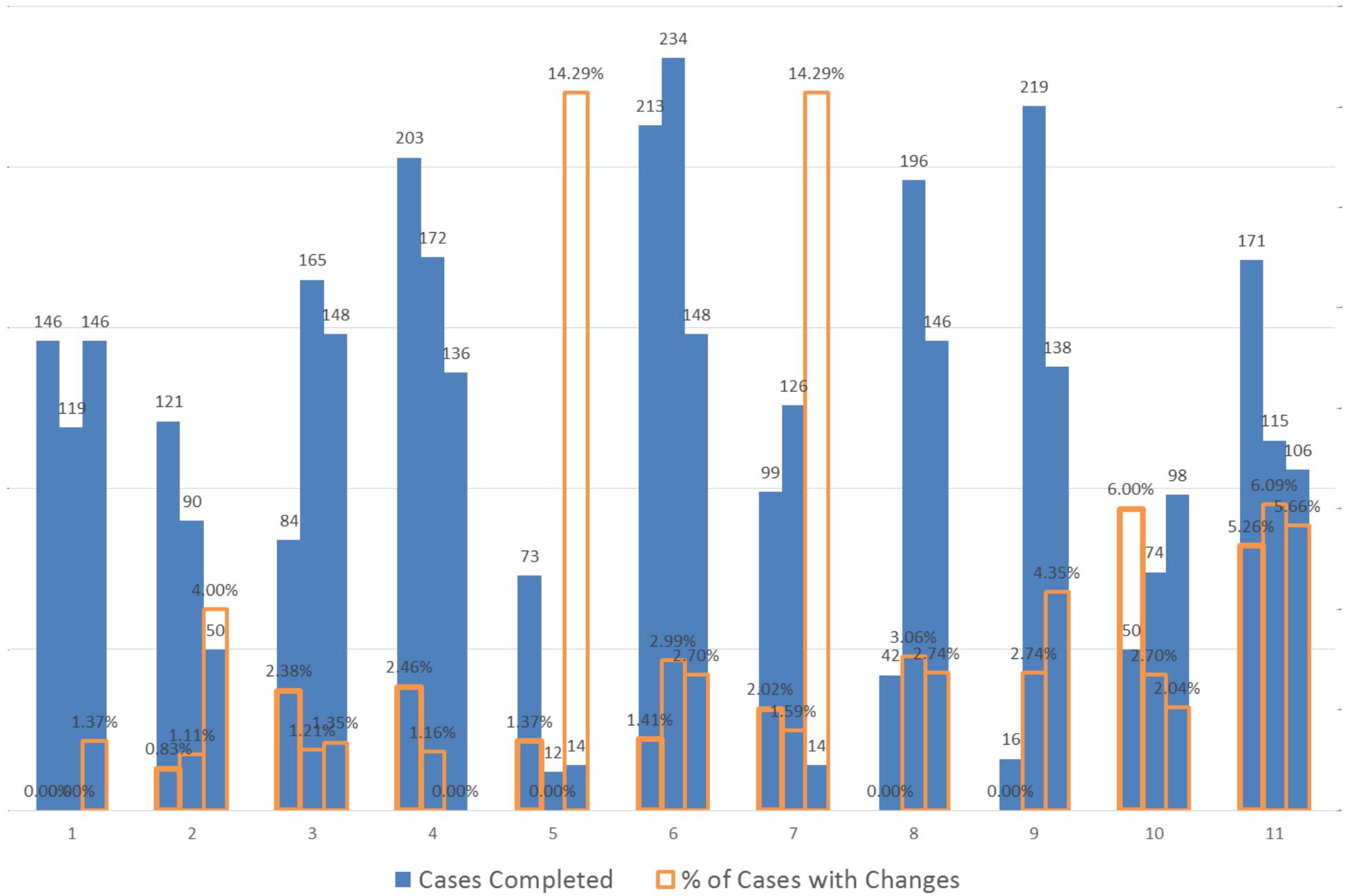
# Trends

- Trends
  - Higher producers tend to have higher rates of errors
    - Top Half in errors 1983 Cases, Bottom Half 1802 Cases
      - Approximately 10%
    - Without Reviewers - Top Half in errors 1744 Cases, Bottom Half 1405 Cases
      - Approximately 25%
  - Separate laboratories tend to have similar numbers

# % Cases with Significant Changes vs. Cases with Changes

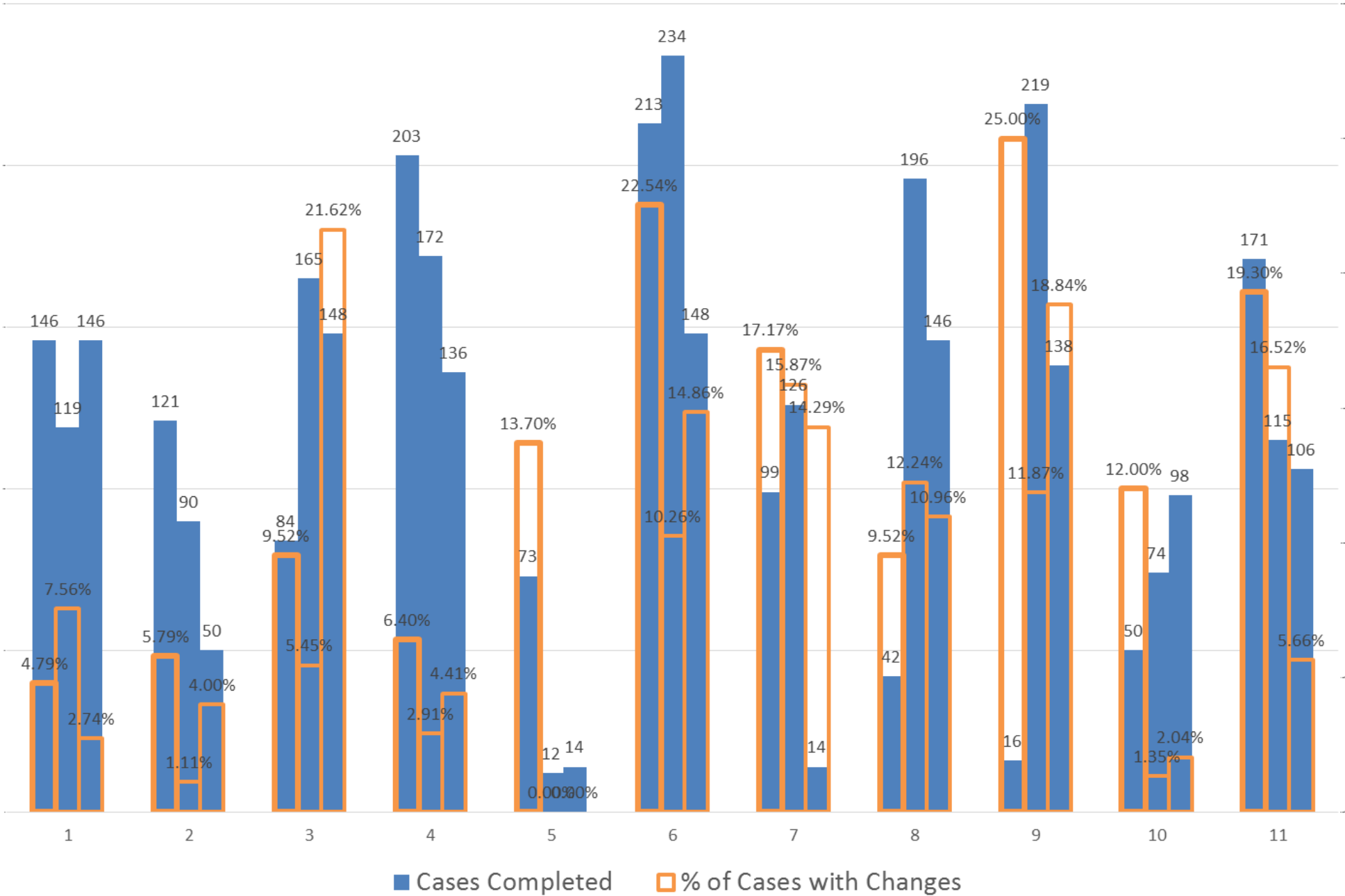


# Significant Changes vs Case Output



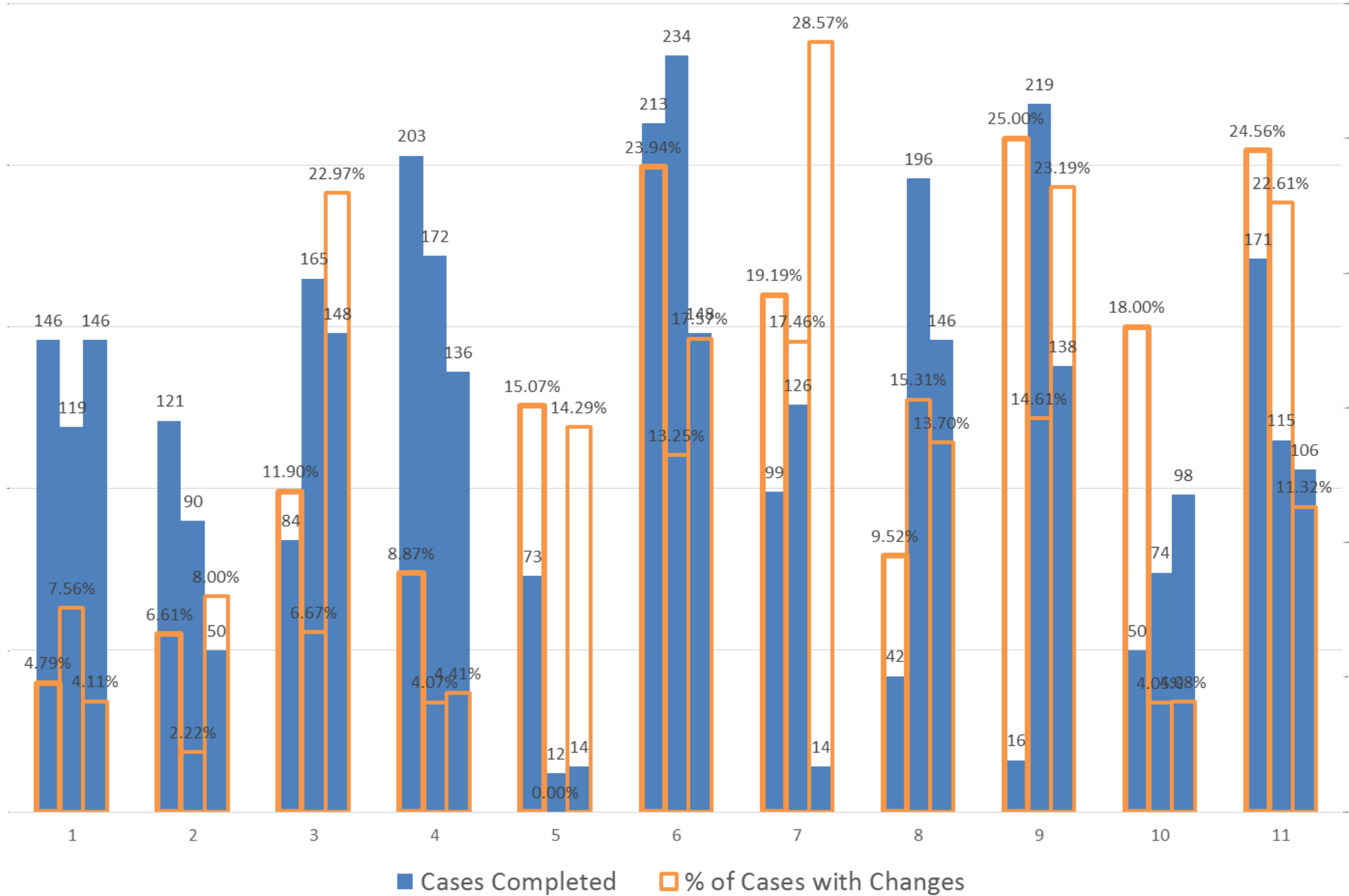
■ Cases Completed    ■ % of Cases with Changes

# Non-Significant Changes vs Case Output

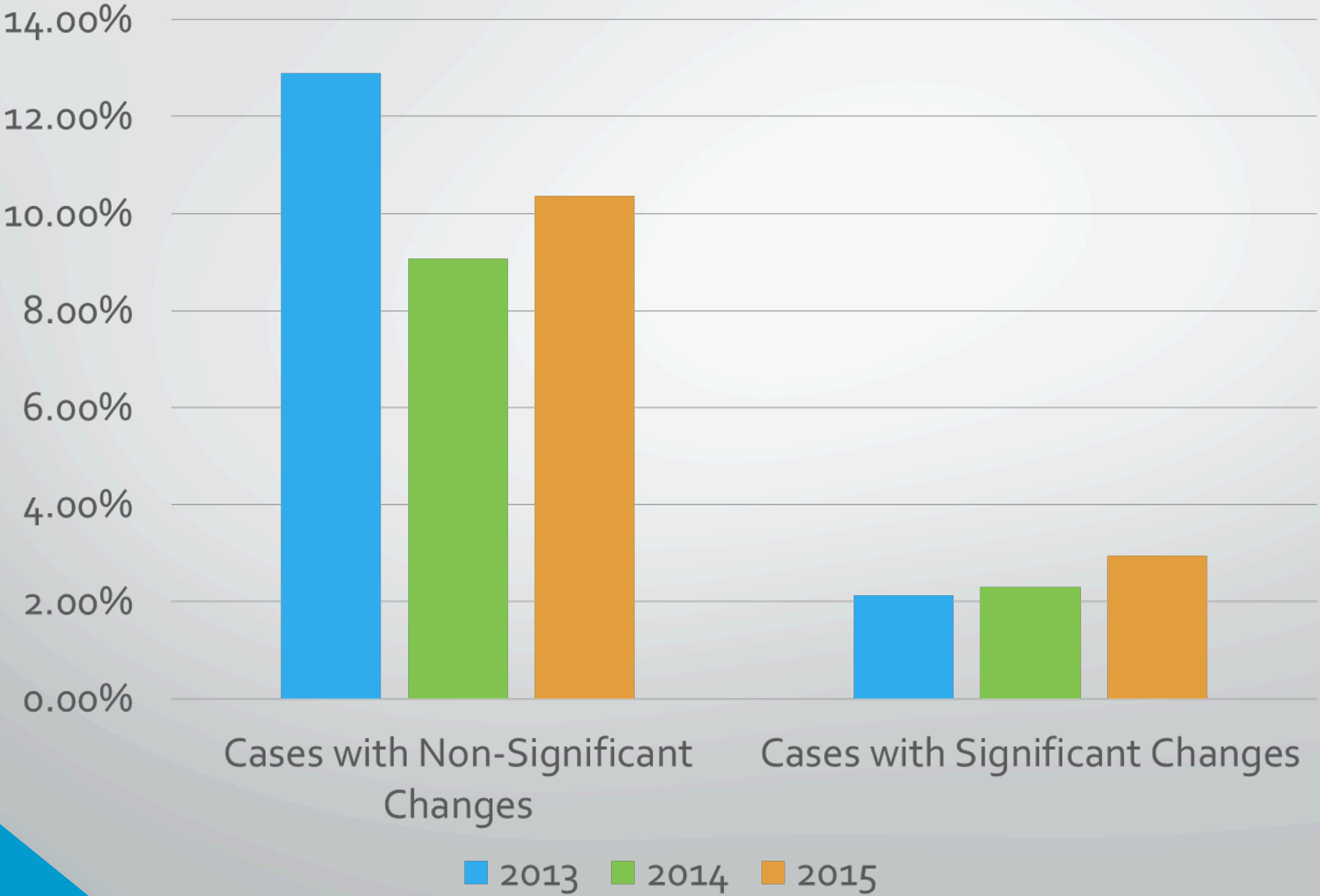


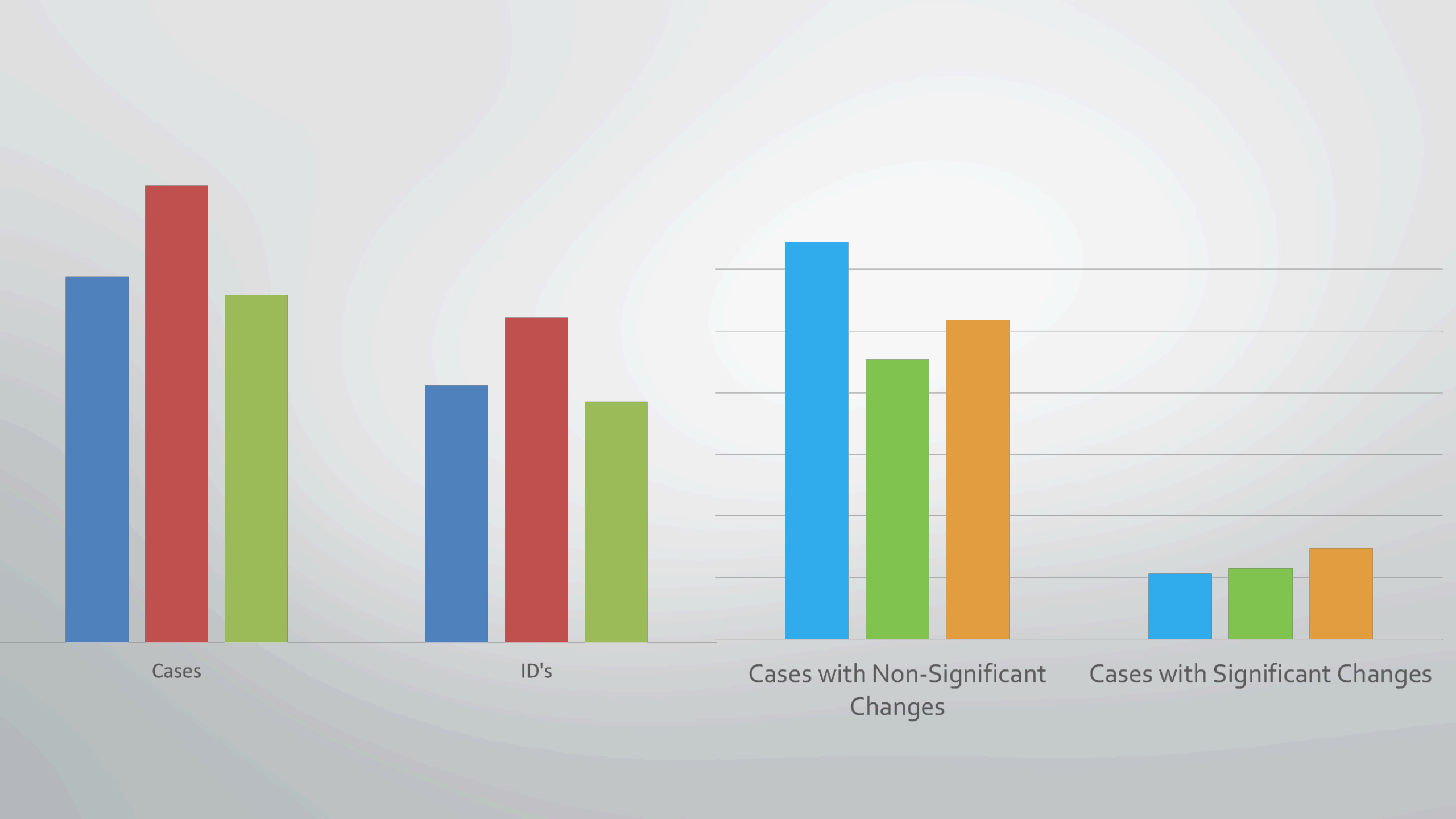


# Changes vs Case Output



# Mitigation - Informing Examiners





Cases

ID's

Cases with Non-Significant  
Changes

Cases with Significant Changes

# Future Plans

- Implementing an evaluation sheet
- To determine
  - When error occurred
  - Factors the examiner believes led to the error
    - External pressure
    - Rush case
    - Personal Fatigue
    - Fatigue with case
- Goal is to identify most common triggers and attempt to mitigate them separately

Date:

Analyst:  Case #

Significant Case Change  Yes  No

Type of Change

<input type="checkbox"/> LOV EXC -> LOV	<input type="checkbox"/> Change Analysis	<input type="checkbox"/> NOV -> LOV
<input type="checkbox"/> NOV -> LOV and ID'd	<input type="checkbox"/> NOV -> LOV for EXC	<input type="checkbox"/> INC -> SIM
<input type="checkbox"/> INC -> ID	<input type="checkbox"/> INC -> EXC	<input type="checkbox"/> SIM -> ID

Choose the best description of why the mistake happened:

Did not look at this latent/completely looked over it  
Bad analysis of latent led to NOV  
Bad analysis of latent led to INC result  
Borderline LOV  
Misoriented print  
Saw similarity, but didn't think it was enough for a chart  
Marked SIM, but didn't think it was enough for an ID - additional info later

(Not)  1  2  3  4  5  6  7  8  9  10 (Most)

On a scale of 1-10, how likely do you feel that this type of mistake will happen again?

(Not)  1  2  3  4  5  6  7  8  9  10 (Most)

What do you feel would help prevent this from happening again?

Additional comments



# Thank You!

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