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REPORT NAME: Electric Service Reliability Annual Report for 2016

COMPANY NAME: Idaho Power Company

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If known, please select designation: RE (Electric) RG (Gas) RW (Water)
 RO (Other)

Report is required by: OAR 860-023-0151
 Statute
 Order
 Other

Is this report associated with a specific docket/case? No Yes
If Yes, enter docket number: RE 90

Key words:

If known, please select the PUC Section to which the report should be directed:

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- Economic and Policy Analysis
- Electric and Natural Gas Revenue Requirements
- Electric Rates and Planning
- Natural Gas Rates and Planning
- Utility Safety, Reliability & Security
- Administrative Hearings Division
- Consumer Services Section

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- **Any other Telecommunications Reporting or**
- **Any daily safety or safety incident reports or**
- **Accident reports required by ORS 654.715.**



LISA D. NORDSTROM
Lead Counsel
lnordstrom@idahopower.com

April 20, 2017

Public Utility Commission of Oregon
Filing Center
201 High Street SE, Suite 100
P.O. Box 1088
Salem, Oregon 97301

Re: Idaho Power Company's Electric Service Reliability Annual Report for the
Year 2016

Attention Filing Center:

Pursuant to OAR 860-023-0151, Idaho Power Company herewith transmits for
electronic filing its Electric Service Reliability Annual Report for the Year 2016.

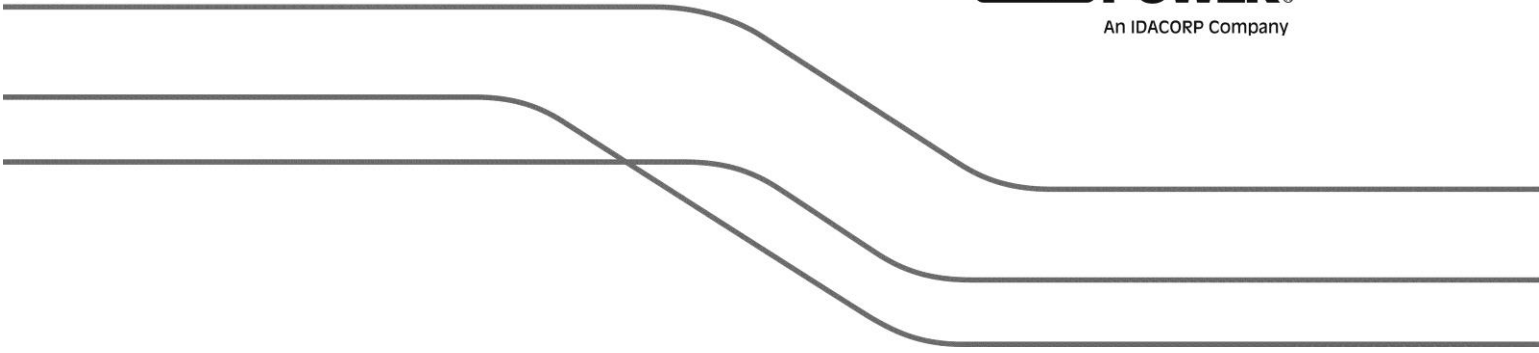
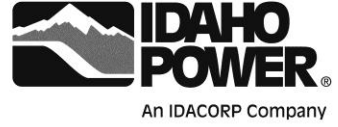
If you have any substantive questions, please call Perry Van Patten at 208-388-
5944.

Very truly yours,

A handwritten signature in cursive script that reads "Lisa D. Nordstrom".

Lisa D. Nordstrom

LDN:kkt
Enclosure



**Idaho Power Company
2016 Electric Service
Reliability Annual Report**

May 2017
2017 Idaho Power

CONTENTS

Figures.....	ii
Tables.....	ii
Executive Summary	1
Definitions.....	3
System SAIDI, SAIFI and MAIFI _E	5
System SAIDI.....	5
System SAIFI.....	6
System MAIFI _E	7
Sustained Interruption Event Causes	9
Circuit SAIDI, SAIFI and MAIFI _E	15
Five Years of Circuit SAIDI.....	15
Five Years of Circuit SAIFI.....	29
Five Years of Circuit MAIFI _E	43
2016 Descending Indices by Circuit.....	57
Appendix.....	63
Circuit Reference Information	63
Five Years of System Pole and Trench Miles.....	65
2016 Major Event Day System Summary	66
2016 Major Event Day Feeder Summary	66
Five Years of Major Event Days	66
Cause Category Translation.....	67
Maps.....	68

FIGURES

Figure 1 Five Years of System SAIDI.....	5
Figure 2 Five Years of System SAIFI.....	6
Figure 3 Five Years of System MAIFI _E	7
Figure 4 Five Years of Sustained Interruption Events by Cause	11
Figure 5 2016 Ranking of Sustained Interruption Event Causes	13
Figure 6 Five Years of Circuit SAIDI.....	27
Figure 7 Five Years of Circuit SAIFI	41
Figure 8 Five Years of Circuit MAIFI _E	55
Figure 9 2016 Descending SAIDI by Circuit	59
Figure 10 2016 Descending SAIFI by Circuit	60
Figure 11 2016 Descending MAIFI _E by Circuit	61
Figure 12 Five Years of MEDs.....	66

TABLES

Table 1 Five Years of System SAIDI.....	5
Table 2 Five Years of System SAIFI.....	6
Table 3 Five Years of System MAIFI _E	7
Table 4 Five Years of Sustained Interruption Event Causes	9
Table 5 2015 Sustained Interruption Event Cause Ranking	12
Table 6 Five Years of Circuit SAIDI.....	16
Table 7 Five Years of Circuit SAIFI.....	30
Table 8 Five Years of Circuit MAIFI _E	44
Table 9 2016 Descending Indices by Circuit	58
Table 10 Circuit Reference Information	64

Table 11 Five Years of System Pole and Trench Miles..... 65

Table 12 2016 MED System Summary 66

Table 13 2016 MED Feeder Summary 66

Table 14 Cause Category Translation..... 67

EXECUTIVE SUMMARY

The information in this document presents Idaho Power's 2016 Electric Service Reliability Annual Report. The report discusses the performance of Idaho Power's Oregon electric service through a narrative summary and also includes several tables and figures.

At year-end 2016, Idaho Power served 18,732 customers from 61 distribution circuits served by 30 substations in the far central-eastern portion of Oregon. The composite performance of the circuits in 2016 included the following:

- 683 sustained (greater than five minutes) interruption events
- 19,734 customer interruptions
- 53,858 customer hours out
- System Average Interruption Frequency Index (SAIFI) of 1.05
- System Average Interruption Duration Index (SAIDI) of 2.88 hours
- Momentary Average Interruption Event Frequency Index (MAIFI_E) of 2.83

Idaho Power experienced zero major event days in its Oregon service territory in 2016 per the OAR 860-023-0161 definition. Idaho Power used the calculation of a threshold for major event days (MEDs) as defined in the Institute of Electrical and Electronic Engineers (IEEE) Standard 1366 and monitored its Oregon service territory for MED occurrences. All the indices at the circuit and system levels in this report are shown with and without MED events for years 2012-2016. Idaho Power's 2016 threshold in Oregon for a major event day (T_{MED}) per the IEEE 1366 definition was a daily SAIDI of 16.36 minutes per customer. Idaho Power's calculated T_{MED} for 2017 in Oregon is 16.49 minutes per customer. The calculation of the T_{MED} and identification of major event days is done while considering all of Idaho Power's Oregon customers.

Compared to 2015, Idaho Power's Oregon service territory SAIFI decreased by 0.90 interruptions per customer from 1.95 in 2015 to 1.05 in 2016. Excluding major events, SAIFI decreased by 0.69 from 1.74 in 2015 to 1.05 in 2016. The average duration of sustained outages also decreased since last year; SAIDI decreased by 3.31 hours per customer from 6.18 in 2015 to 2.88 in 2016. The decrease was less dramatic when excluding major events, however, as 2016 saw a decrease of only 0.72 hours per customers over 2015 (3.60 to 2.88). Finally, MAIFI_E decreased in 2016 compared to 2015 by 1.03 momentary interruption events per customer from 3.86 in 2015 to 2.83 in 2016.

The attached charts and tables show Idaho Power's Oregon system performance over the previous five years for SAIFI, SAIDI and MAIFI_E at the system and circuit level in accordance with OAR 860-023-0151 (2)(a). In addition to the reliability indices, a summary of sustained interruption causes is shown at the system level in accordance with OAR 860-023-0151 (2)(b). A table translating Idaho Power's cause categories to the cause categories listed in OAR 860-023-151 (2)(b) can be found in the Appendix. The Appendix also includes supplemental information such as substation, voltage, operating area and customers connected for each distribution circuit in accordance with OAR 860-023-0151 (2)(h). A map is also provided which shows the distribution circuits in Idaho Power's service territory with Oregon customers in accordance with OAR 860-023-0151 (2)(g).

Idaho Power continues to collect detailed outage information for all sustained outage events through its Outage Management System (OMS). Historical data from the OMS is stored and circuit performance is analyzed for the prioritization of capital projects to improve reliability. Idaho Power did not replace its OMS in November 2016 as expected; however, the new OMS implementation was completed in January 2017. This project included bringing in historical data from the old OMS into the new OMS and continuing to collect the necessary outage data in accordance with OAR 860-023-0101. The change from the old OMS to the new OMS is not expected to dramatically change how outage data is reported and analyzed. Idaho Power also continues to utilize data from its Smart Grid Monitoring (SGM) system to calculate MAIFI_E as it has in past years.

Idaho Power continues to implement programs and projects to improve customer service and electric service reliability. Company programs related to electric service reliability include the annual Oregon safety inspection/reliability patrols, the line clearing and vegetation management program, the pole inspection and treatment program, and annual maintenance and capital projects that replace aging assets and improve reliability.

DEFINITIONS

CAIDI – Customer Average Interruption Duration Index; the average duration that a customer experienced per sustained outage (greater than 5 minutes).

CI – Customer Interruptions; the total number of customer interruptions from sustained outages (greater than 5 minutes).

CMI – Customer Minutes of Interruption; the total number of customer minutes of interruption from sustained outages (greater than 5 minutes). This is calculated as the product of customer interruptions and outage duration in minutes.

IEEE – The Institute of Electrical and Electronic Engineers.

IEEE 1366 – The Institute of Electrical and Electronic Engineers (IEEE) Standard 1366 entitled *IEEE Guide for Electric Power Distribution Reliability Indices* (the 2012 edition), approved on May 14, 2012 by IEEE-SA Standards Board.

MAIFI_E – Momentary Average Interruption Event Frequency Index; the average number of momentary interruption events per customer (less than or equal to 5 minutes).

Major Event – An event that exceeds the reasonable design and/or operational limits of the electric power system. A major event includes at least one major event day (MED).

MED – Major Event Day; a day when the daily SAIDI exceeds a predefined threshold value.

MedEx – Major Event Day Excluded; this suffix is used after a reliability index to indicate major event days are excluded. For example, SAIFI MedEx is SAIFI excluding major event days.

Operating Area – Idaho Power’s customers in Oregon are split into two operating areas: 1) the Jordan Valley region of the reporting area served by the Canyon Operations Center in Caldwell, ID and 2) the rest of the reporting area served by the Western Operations Center in Payette, ID. Approximately 97% of Idaho Power’s customers in Oregon are within the Western operating area, while the remaining 3% of Idaho Power’s customers in Oregon are within the Canyon operating area. For information about which operating area each distribution circuit is in, refer to the Appendix.

Reporting Area – Idaho Power’s entire service area in Oregon.

SAIDI – System Average Interruption Duration Index; the average duration from all sustained outages that a customer experienced per year (greater than 5 minutes).

SAIFI – System Average Interruption Frequency Index; the average frequency of sustained outages that a customer experienced per year (greater than 5 minutes).

SGM – Smart Grid Monitor; refers to Idaho Power’s system for monitoring momentary interruption events on its distribution network.

T_{MED} – A major event day threshold value.

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SYSTEM SAIDI, SAIFI AND MAIFI_E

System SAIDI

Year	2012	2013	2014	2015	2016
SAIDI	3.57	6.99	3.43	6.18	2.88
SAIDI MedEx	2.27	4.62	3.16	3.60	2.88

Table 1 Five Years of System SAIDI

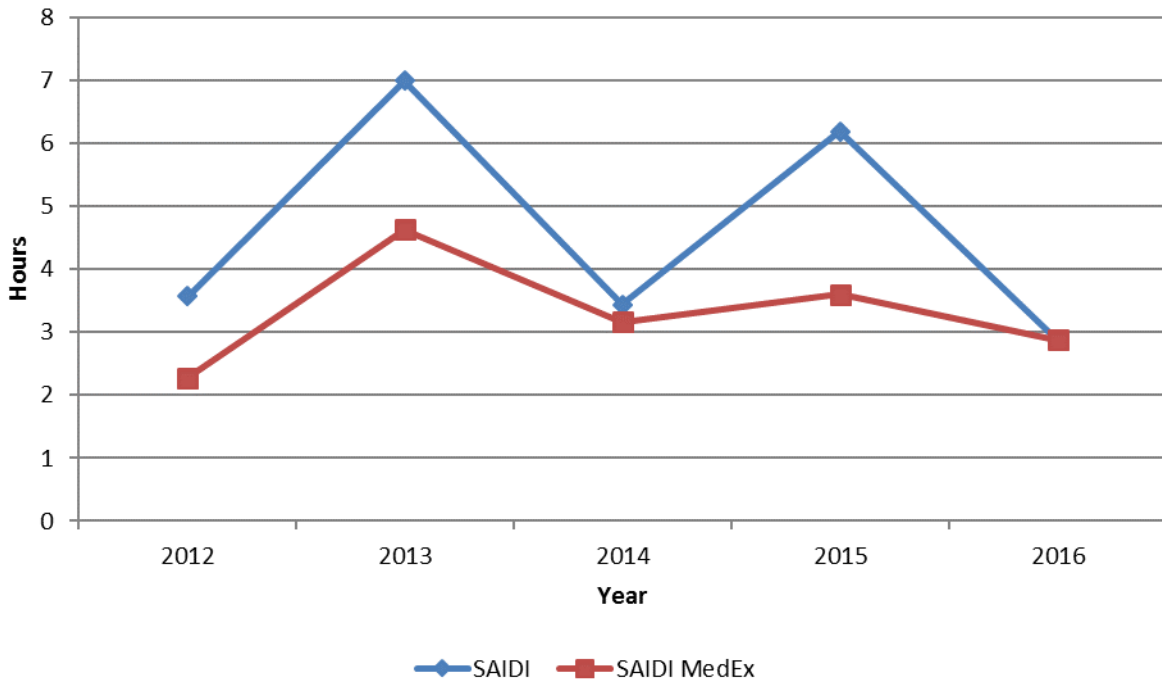


Figure 1 Five Years of System SAIDI

System SAIFI

Year	2012	2013	2014	2015	2016
SAIFI	1.43	2.41	1.63	1.95	1.05
SAIFI MedEx	1.20	2.01	1.58	1.74	1.05

Table 2 Five Years of System SAIFI

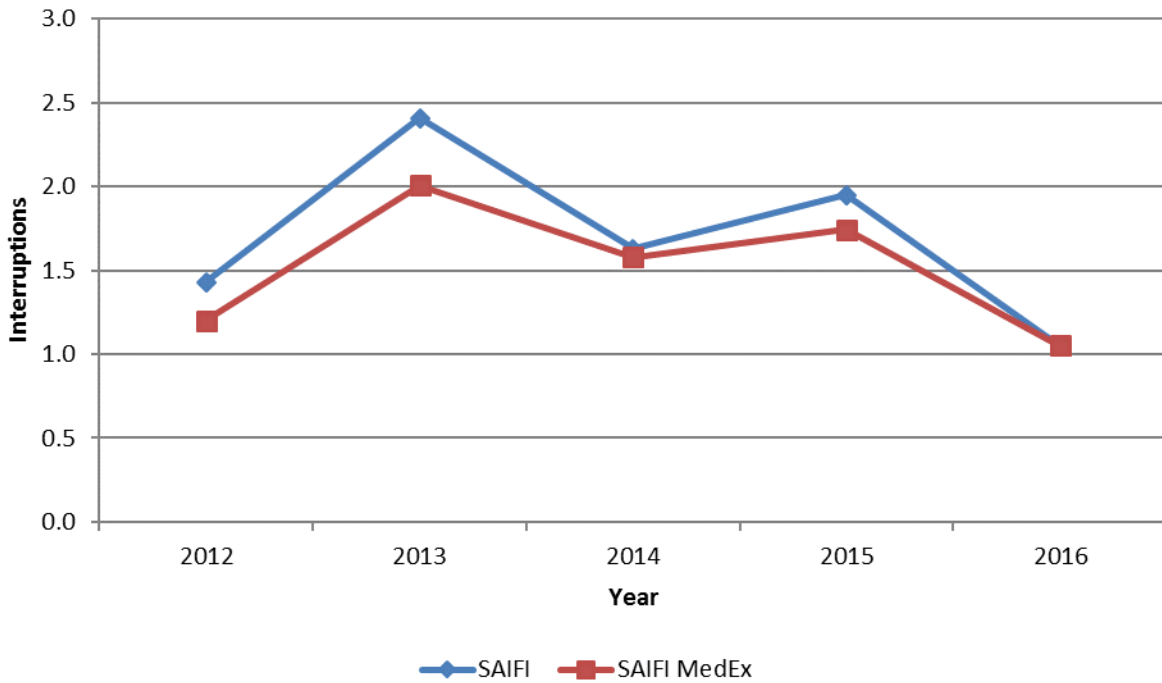


Figure 2 Five Years of System SAIFI

System MAIFI_E

Year	2012	2013	2014	2015	2016
MAIFI _E	4.70	3.80	2.48	3.86	2.83
MAIFI _E MedEx	4.54	3.54	2.46	3.72	2.83

Table 3 Five Years of System MAIFI_E

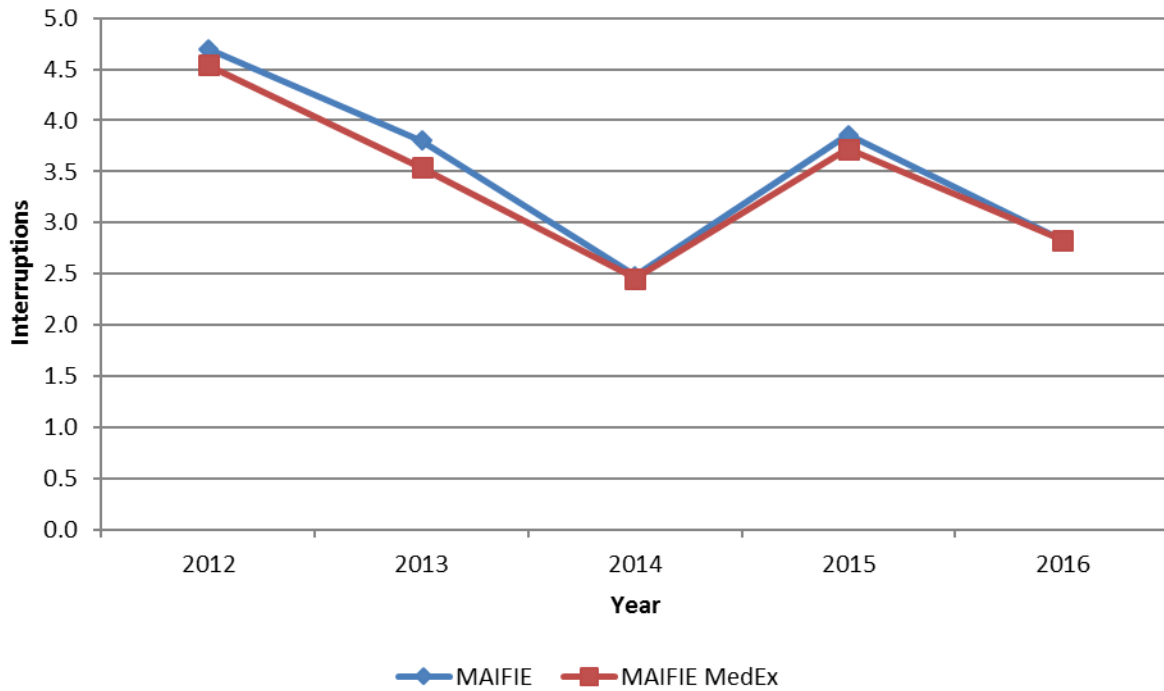


Figure 3 Five Years of System MAIFI_E

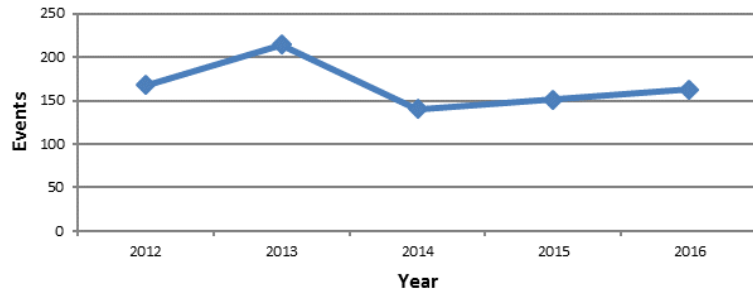
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Sustained Interruption Event Causes

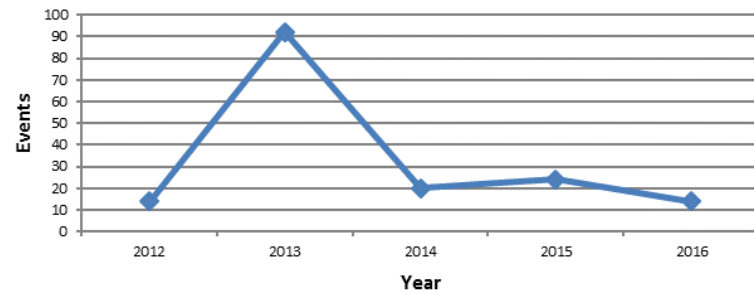
Cause	Number of Sustained Interruption Events					Percent of Total Sustained Interruption Events				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Distribution – Equipment	168	214	140	151	163	24.2%	24.3%	17.3%	20.2%	23.9%
Distribution – Lightning	14	92	20	24	14	2.0%	10.5%	2.5%	3.2%	2.0%
Distribution – Other	43	37	36	40	41	6.2%	4.2%	4.5%	5.3%	6.0%
Distribution – Planned	136	187	237	140	148	19.6%	21.3%	29.4%	18.7%	21.7%
Distribution – Public	35	42	46	43	66	5.0%	4.8%	5.7%	5.7%	9.7%
Distribution – Unknown	103	57	63	90	67	14.8%	6.5%	7.8%	12.0%	9.8%
Distribution – Vegetation	57	63	47	44	28	8.2%	7.2%	5.8%	5.9%	4.1%
Distribution – Weather (Non-Lightning)	11	9	46	40	0	1.6%	1.0%	5.7%	5.3%	0.0%
Distribution – Wildlife	71	66	92	92	111	10.2%	7.5%	11.4%	12.3%	16.3%
Loss of Supply – Substation	5	17	35	23	8	0.7%	1.9%	4.3%	3.1%	1.2%
Loss of Supply – Transmission	51	95	45	61	37	7.3%	10.8%	5.6%	8.2%	5.4%
Total	694	879	807	748	683	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4 Five Years of Sustained Interruption Event Causes

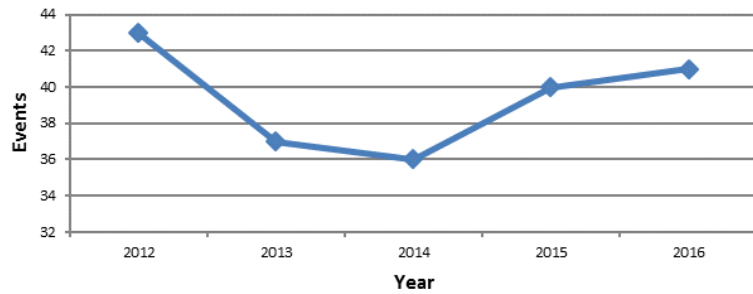
DISTRIBUTION - EQUIPMENT



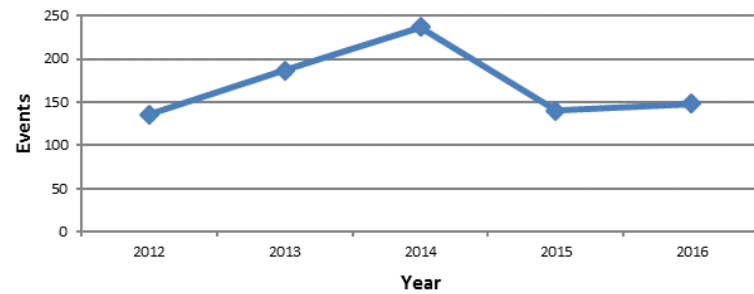
DISTRIBUTION - LIGHTNING



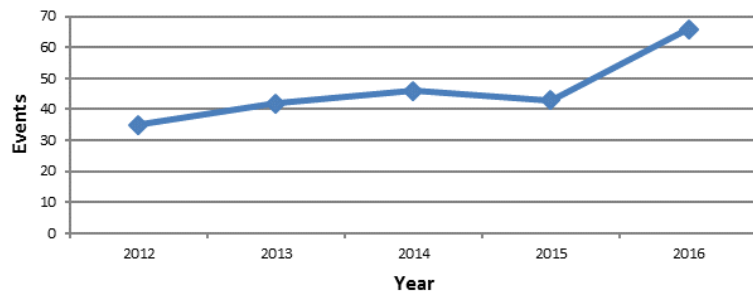
DISTRIBUTION - OTHER



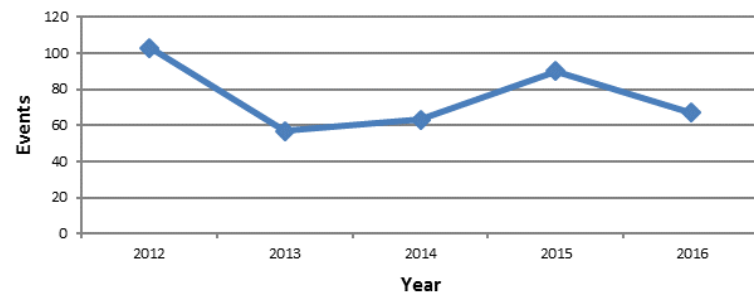
DISTRIBUTION - PLANNED



DISTRIBUTION - PUBLIC



DISTRIBUTION - UNKNOWN



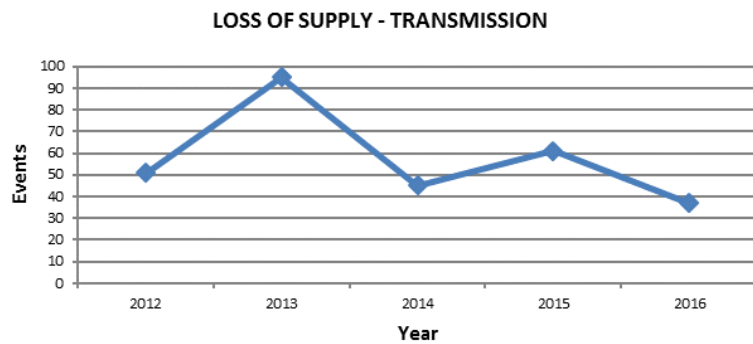
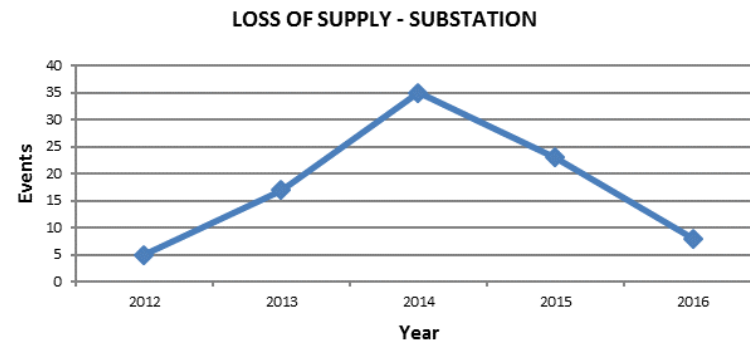
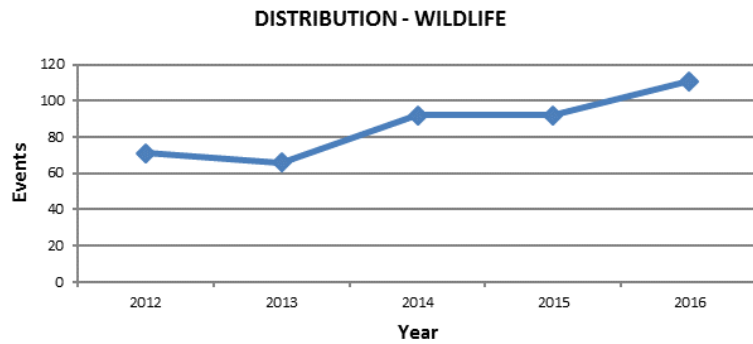
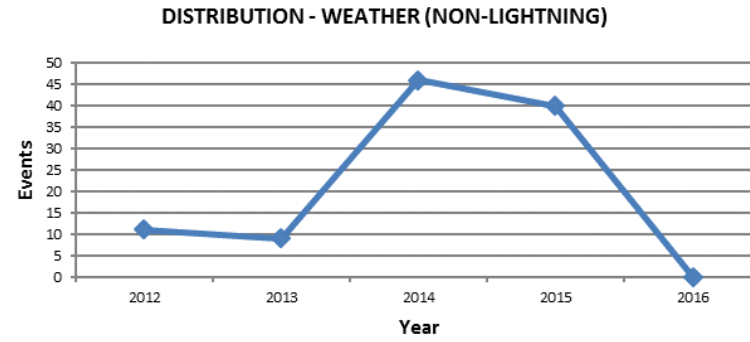
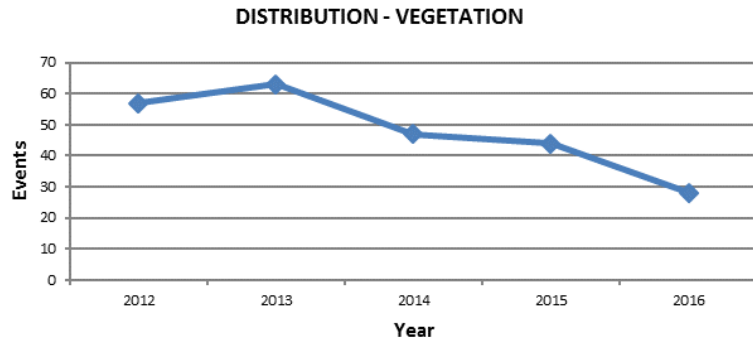


Figure 4 Five Years of Sustained Interruption Events by Cause

Cause	Events	Hours Out	Event Ranking	Hours Out Ranking
Distribution – Equipment	163	552	1	2
Distribution – Lightning	14	32	9	9
Distribution – Other	41	1,305	6	1
Distribution – Planned	148	403	2	3
Distribution – Public	66	243	5	5
Distribution – Unknown	67	179	4	6
Distribution – Vegetation	28	111	8	8
Distribution – Weather (non-Lightning)	0	0	11	11
Distribution – Wildlife	111	265	3	4
Loss of Supply – Substation	8	30	10	10
Loss of Supply – Transmission	37	118	7	7
Total	683	3,239		

Table 5 2015 Sustained Interruption Event Cause Ranking

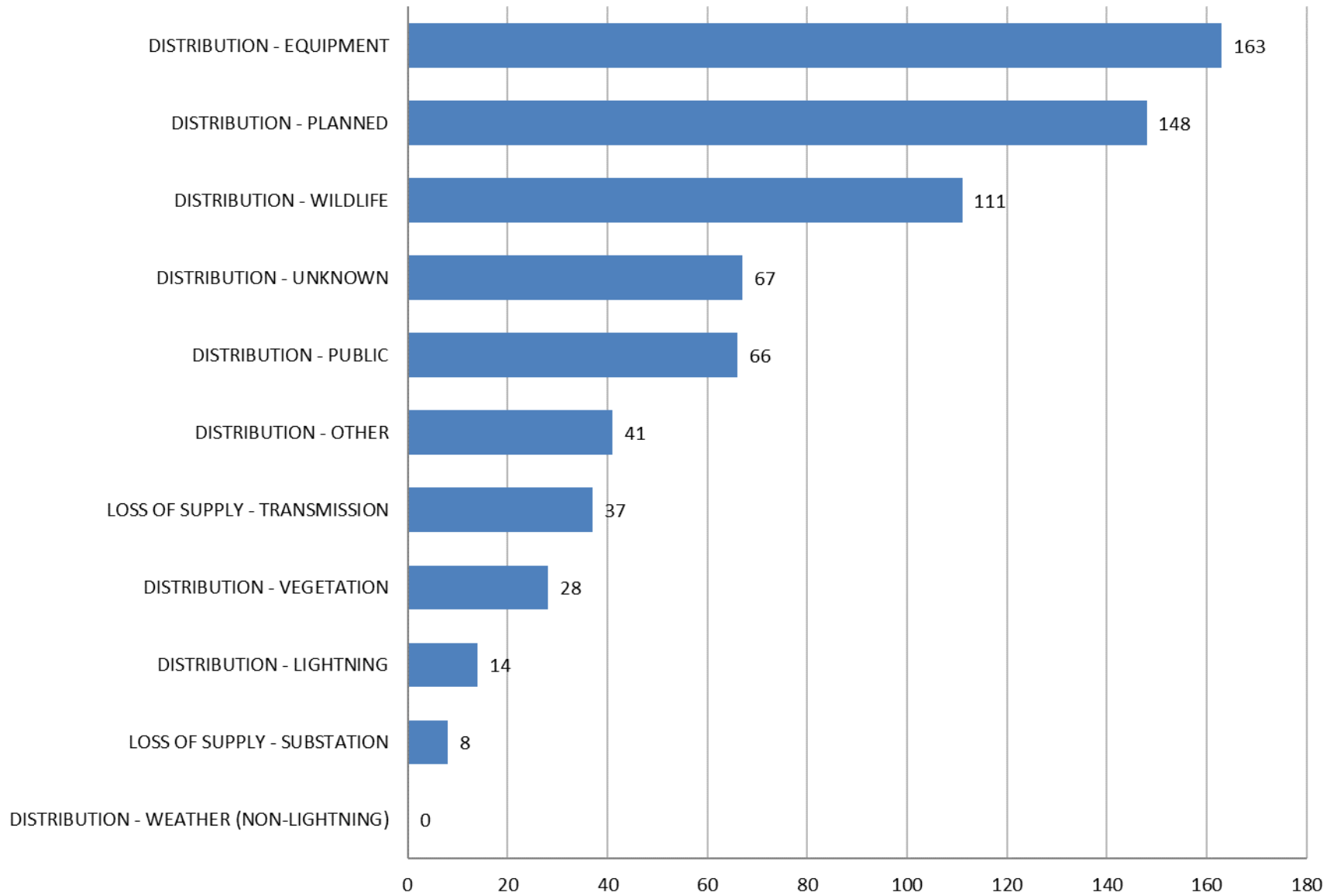


Figure 5 2016 Ranking of Sustained Interruption Event Causes

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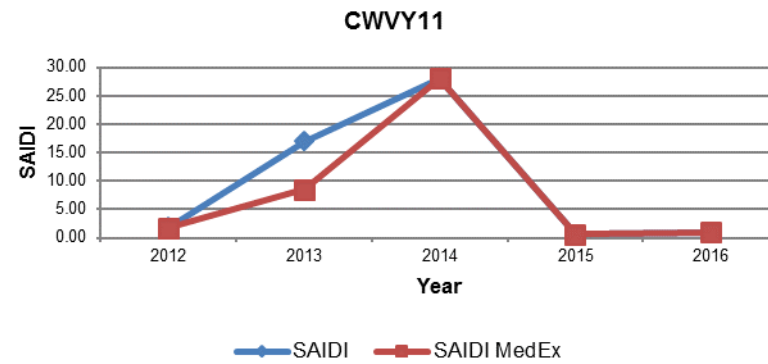
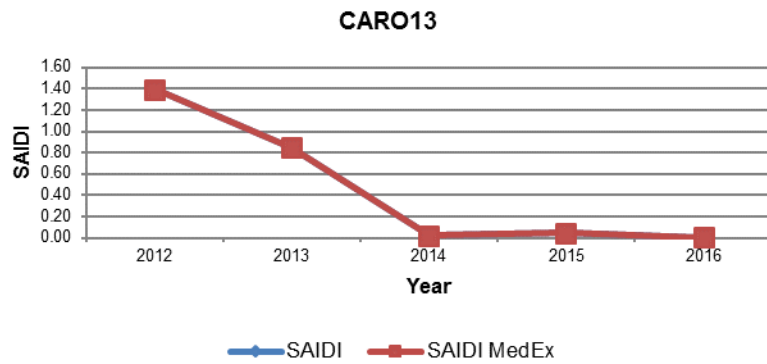
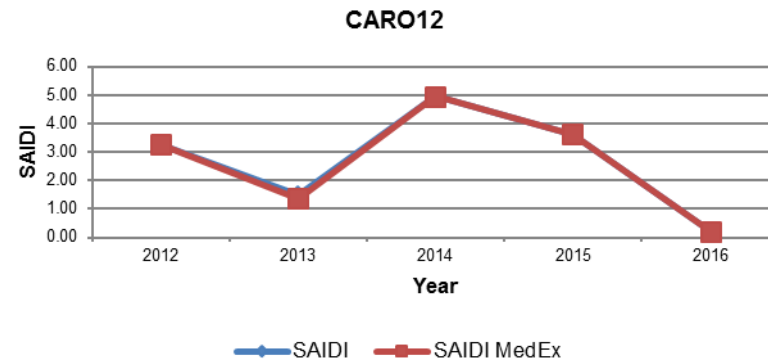
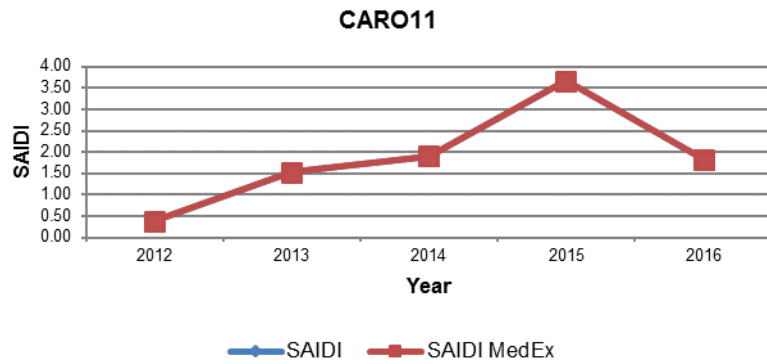
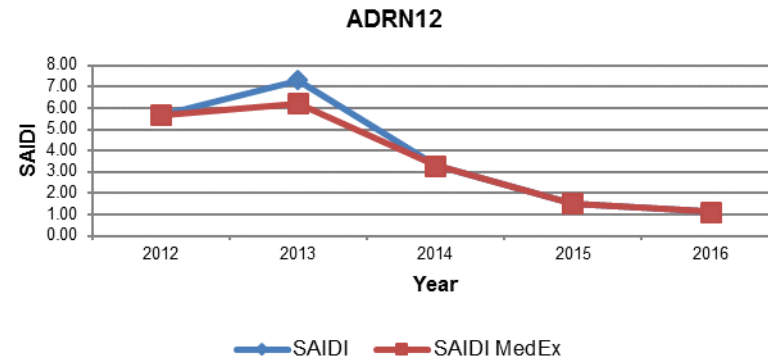
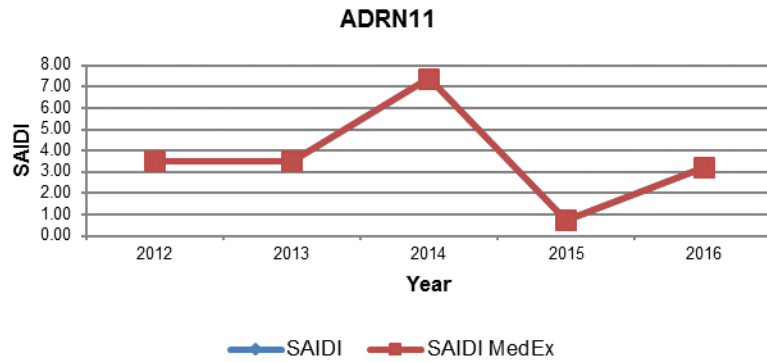
CIRCUIT SAIDI, SAIFI AND MAIFI_E

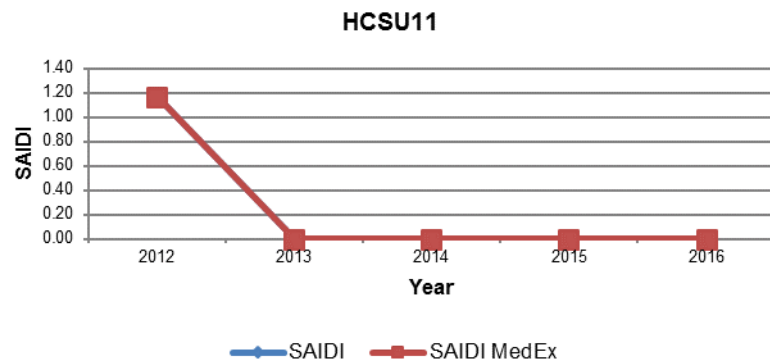
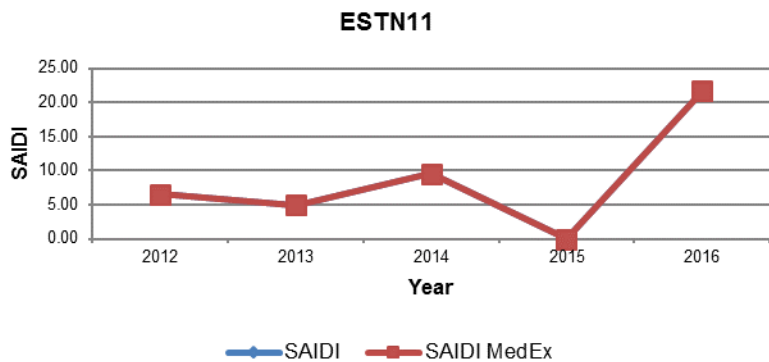
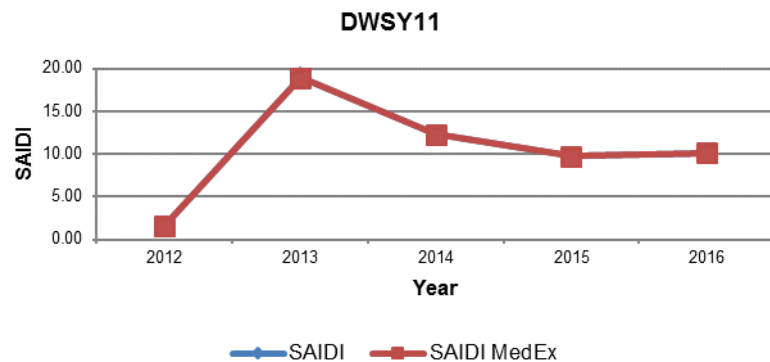
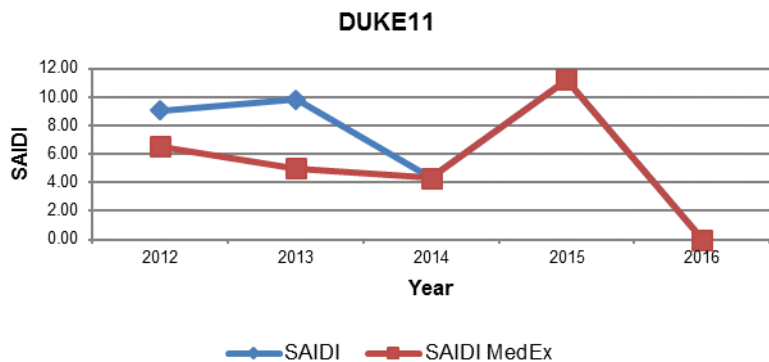
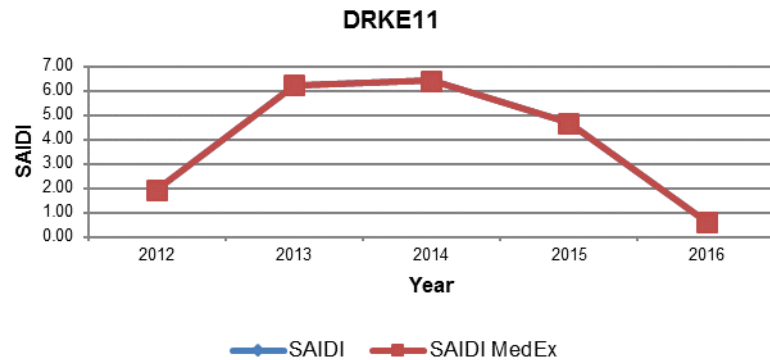
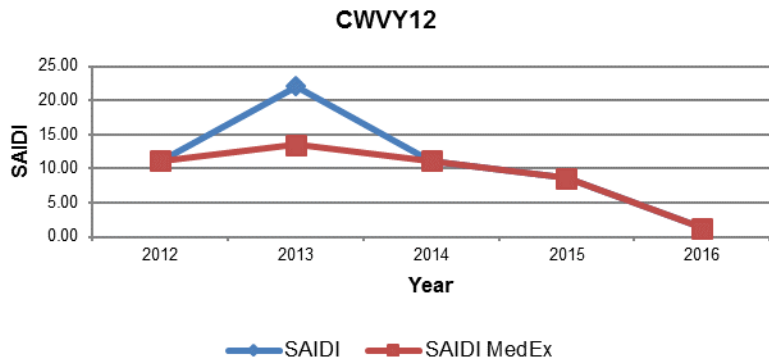
Five Years of Circuit SAIDI

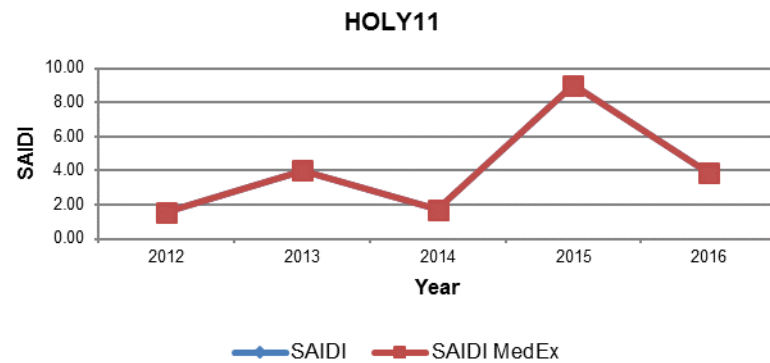
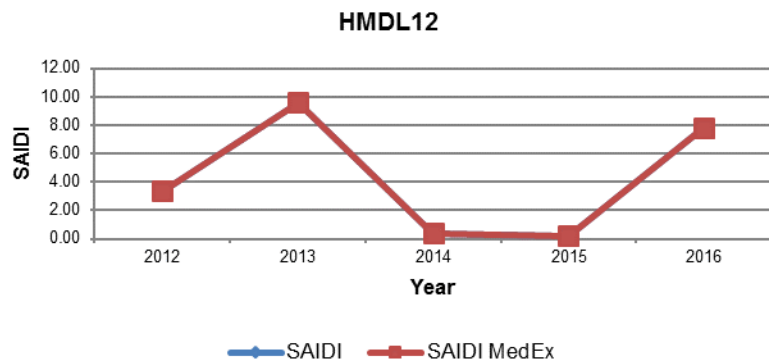
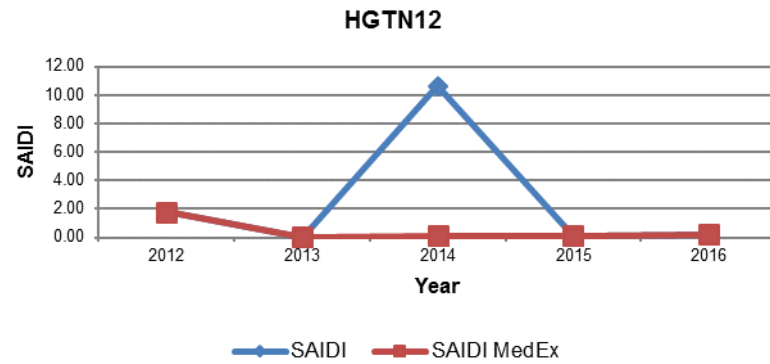
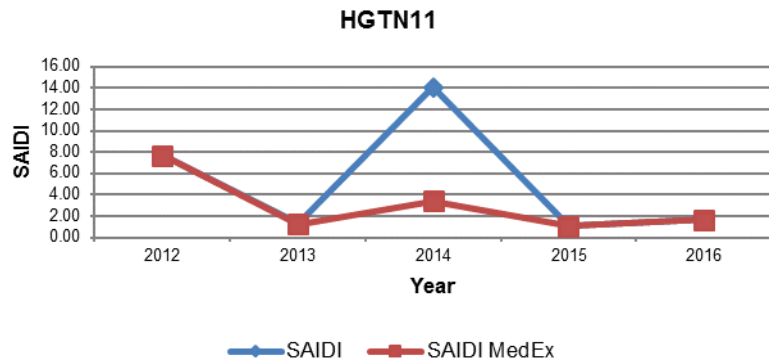
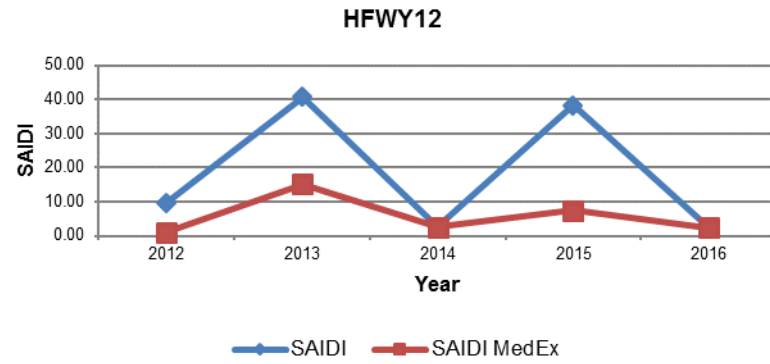
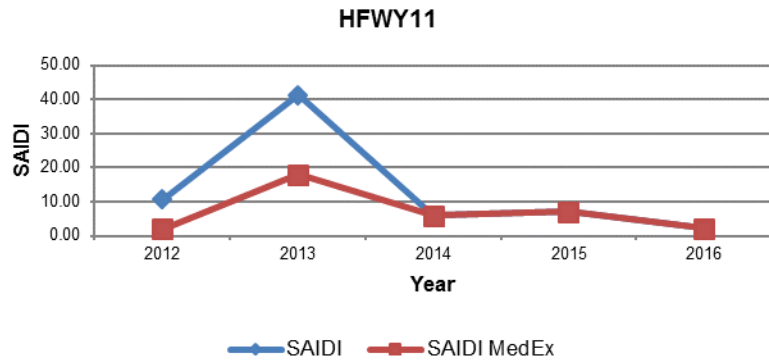
Circuit	2012	2013	2014	2015	2016	2016 MED Excluded
ADRN11	3.52	3.52	7.40	0.73	3.22	3.22
ADRN12	5.69	7.31	3.30	1.52	1.12	1.12
CARO11	0.39	1.54	1.91	3.67	1.83	1.83
CARO12	3.27	1.48	4.95	3.63	0.23	0.23
CARO13	1.40	0.85	0.02	0.05	0.00	0.00
CWVY11	1.88	17.05	28.03	0.70	0.95	0.95
CWVY12	11.19	22.04	11.21	8.68	1.26	1.26
DRKE11	1.95	6.25	6.42	4.68	0.61	0.61
DUKE11	9.08	9.82	4.31	11.21	0.00	0.00
DWSY11	1.63	19.03	12.29	9.74	10.16	10.16
ESTN11	6.53	4.99	9.55	0.00	21.72	21.72
HCSU11	1.17	0.00	0.00	0.00	0.00	0.00
HFVY11	10.66	41.28	6.02	7.17	2.14	2.14
HFVY12	9.72	40.71	2.60	38.25	2.42	2.42
HGTN11	7.67	1.33	14.05	1.08	1.66	1.66
HGTN12	1.82	0.03	10.62	0.14	0.21	0.21
HMDL12	3.38	9.62	0.40	0.21	7.82	7.82
HOLY11	1.56	4.02	1.73	9.03	3.85	3.85
HOLY12	1.23	3.25	0.02	4.09	1.58	1.58
HOLY13	4.56	1.64	0.66	3.29	1.68	1.68
HOPE11	1.62	8.34	9.46	1.13	4.93	4.93
HRPR11	1.41	3.53	12.42	2.88	6.18	6.18
HRPR12	5.81	11.67	26.47	8.20	12.11	12.11
JMSN11	1.79	21.53	4.95	3.17	0.82	0.82
JMSN12	13.04	17.00	19.63	4.07	1.35	1.35
JNTA11	1.57	13.45	14.74	5.92	8.95	8.95
JNTA12	5.44	13.97	18.42	11.28	12.95	12.95
JNVY11	31.27	13.73	3.83	67.85	35.11	35.11
JNVY12	31.19	15.21	2.05	71.83	7.75	7.75
JNVY31	34.08	19.33	6.24	86.67	24.13	24.13
LIME11	3.18	0.38	10.02	5.65	3.84	3.84
MRBT41	0.65	0.34	4.82	0.29	0.67	0.67
MRBT42	5.44	0.00	4.62	0.40	0.29	0.29
NYSA11	0.22	2.82	2.39	2.59	0.89	0.89
NYSA12	2.48	8.13	2.58	1.31	13.97	13.97

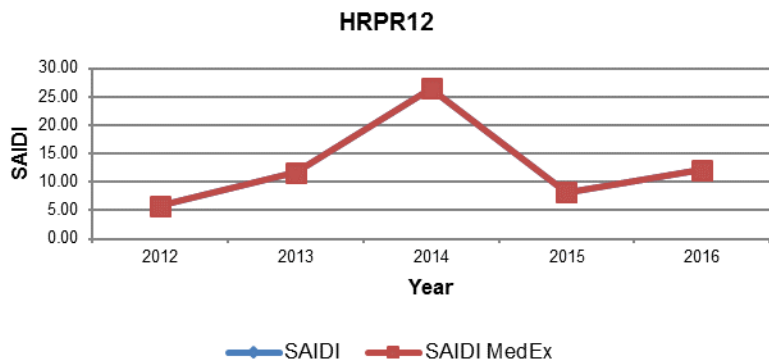
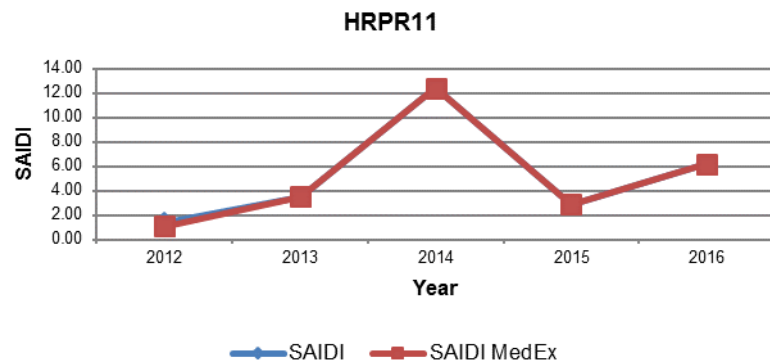
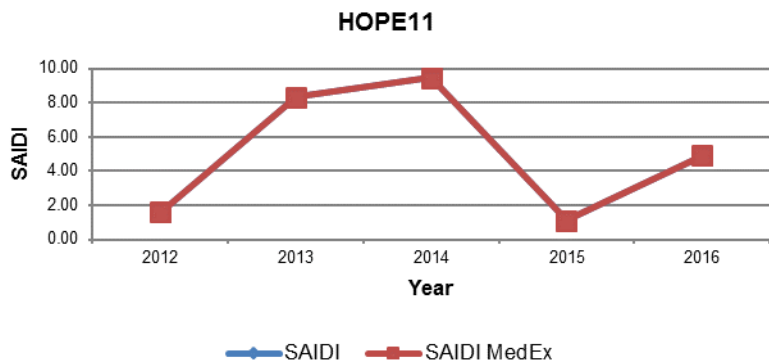
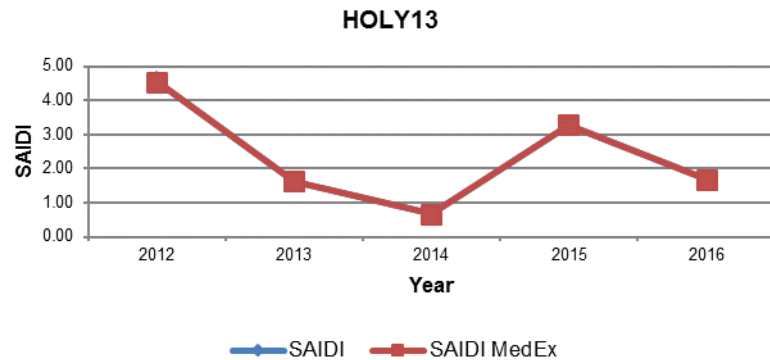
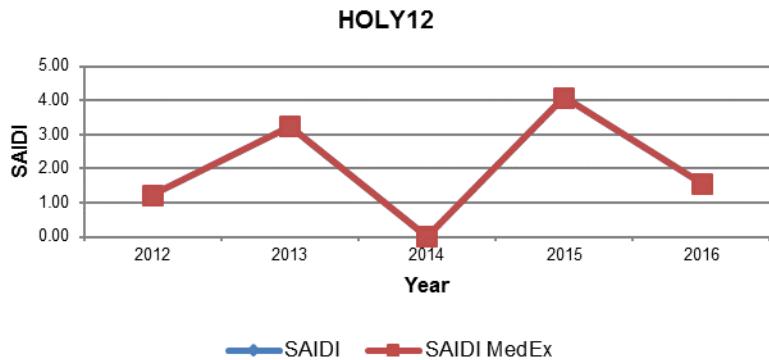
Circuit	2012	2013	2014	2015	2016	2016 MED Excluded
NYSA13	3.94	1.41	4.01	0.23	6.68	6.68
NYSA14	0.94	3.77	3.72	0.11	3.65	3.65
OBPR11	0.00	0.00	0.00	0.00	0.00	0.00
OIDA11	1.67	1.35	0.29	0.26	0.94	0.94
OIDA12	0.00	3.07	1.47	1.92	0.70	0.70
ONTO14	0.18	8.26	0.00	0.06	0.42	0.42
ONTO18	1.68	0.19	0.05	0.26	0.21	0.21
ONTO19	0.64	0.42	0.20	3.15	0.40	0.40
ONTO20	0.31	1.63	0.68	0.23	1.05	1.05
ONTO23	2.40	0.68	0.00	0.11	0.52	0.52
ONTO24	0.25	1.25	2.75	3.46	0.46	0.46
ONTO25	1.35	0.15	0.03	0.25	0.13	0.13
OYDM11	0.00	0.00	0.00	0.00	0.00	0.00
PNCK11	10.47	9.06	1.47	7.45	12.71	12.71
PNCK12	2.52	4.97	0.00	5.63	6.73	6.73
PRMA12	14.92	7.59	14.63	3.45	13.68	13.68
PRMA42	0.34	8.16	8.39	4.75	3.59	3.59
RKVL11	21.49	15.12	7.77	129.17	9.57	9.57
UNTY11	1.76	28.17	8.33	2.15	34.95	34.95
UNTY12	3.82	21.64	2.81	7.45	3.44	3.44
VALE11	0.99	3.23	2.53	3.82	0.17	0.17
VALE13	9.85	5.21	3.64	1.06	0.52	0.52
VALE14	0.62	0.94	4.65	13.76	0.11	0.11
VALE15	3.01	0.33	2.42	3.49	4.94	4.94
WESR13	0.40	3.57	0.24	0.93	0.29	0.29
WESR14	2.60	0.57	7.20	2.81	0.85	0.85

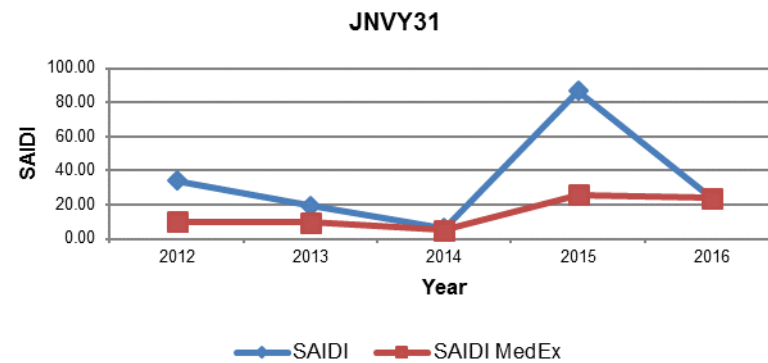
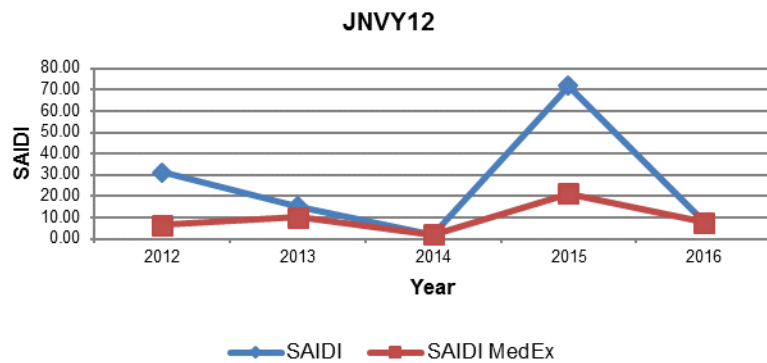
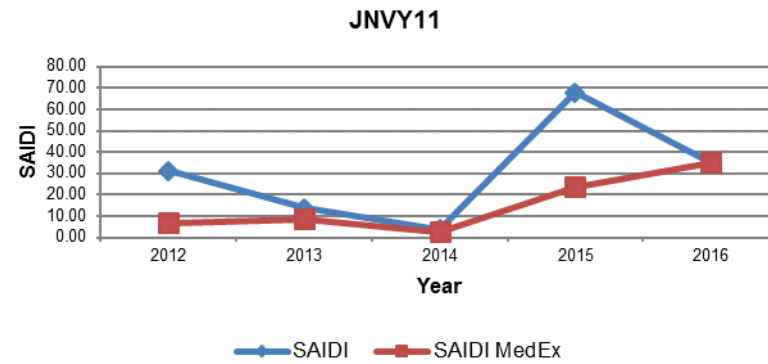
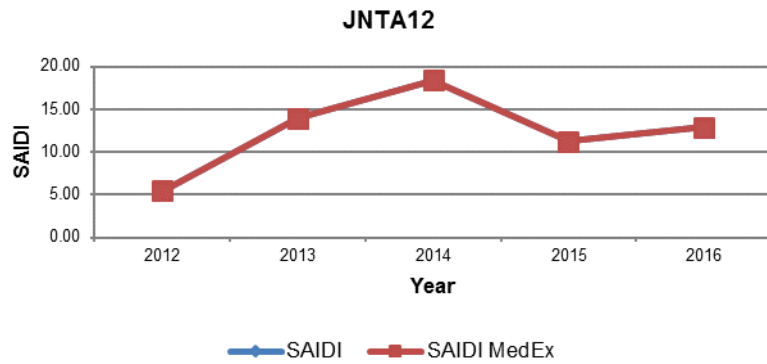
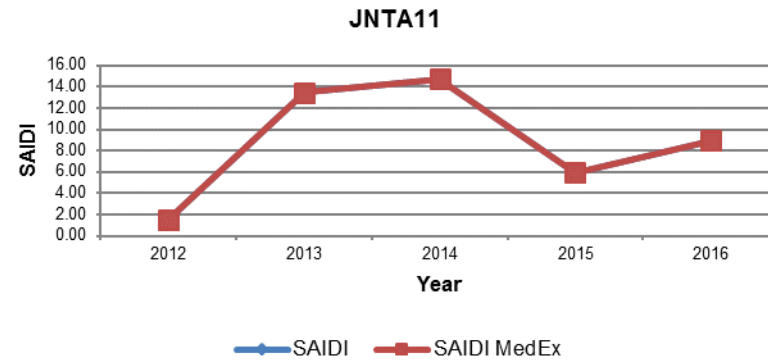
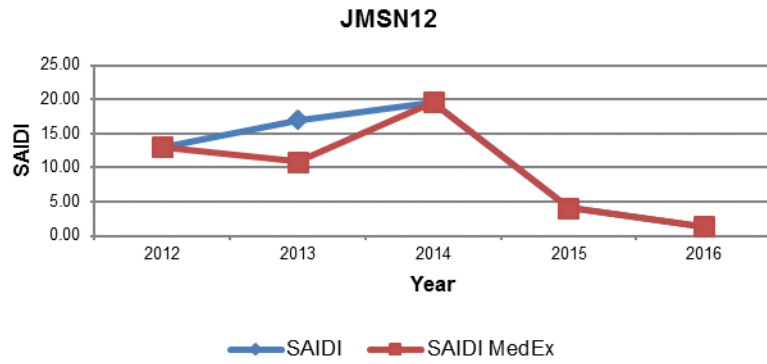
Table 6 Five Years of Circuit SAIDI

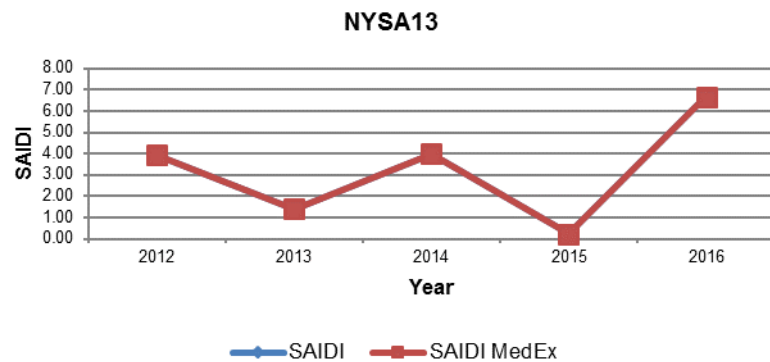
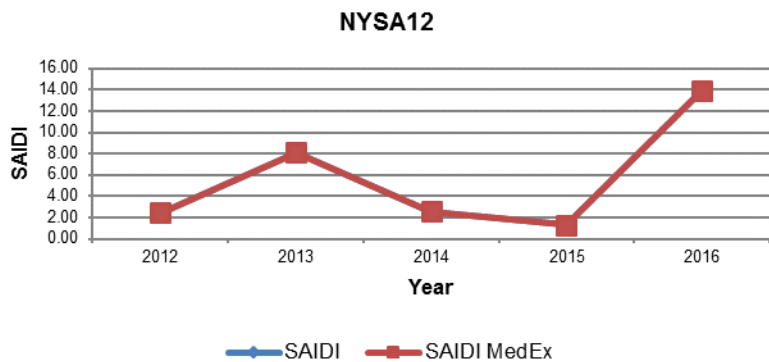
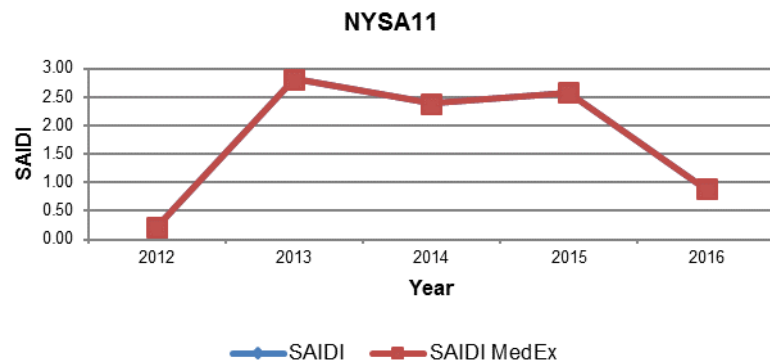
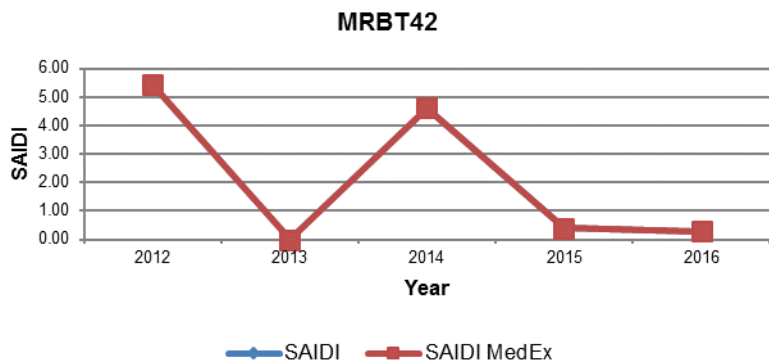
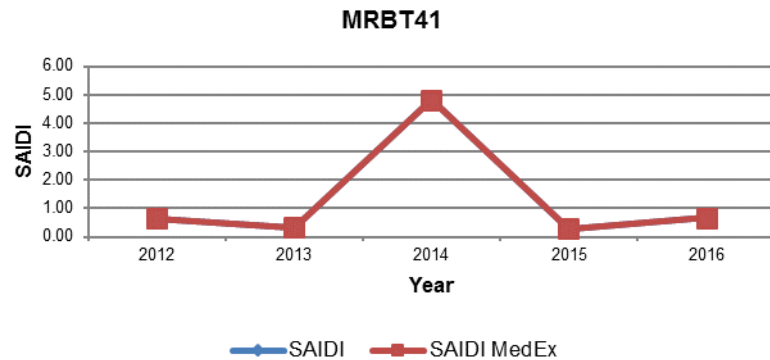
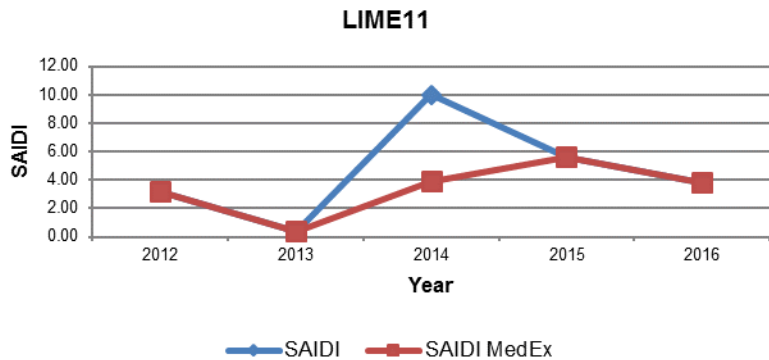


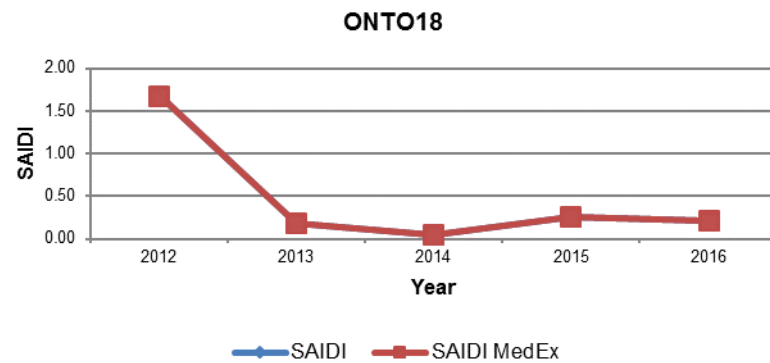
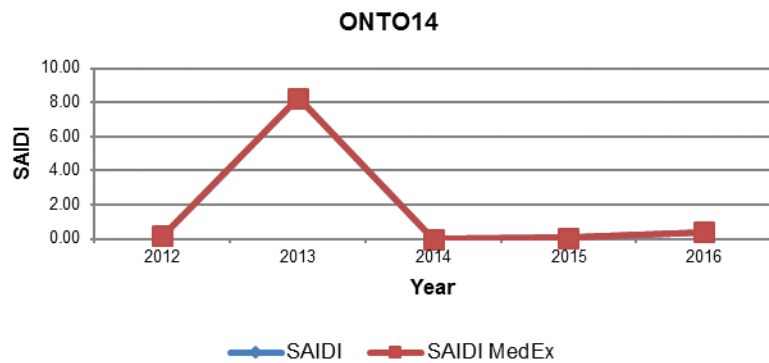
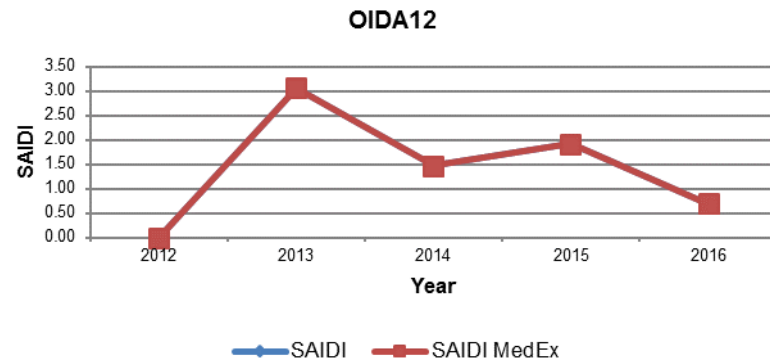
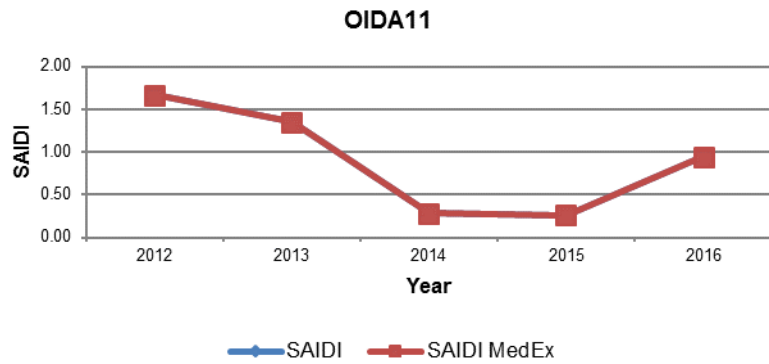
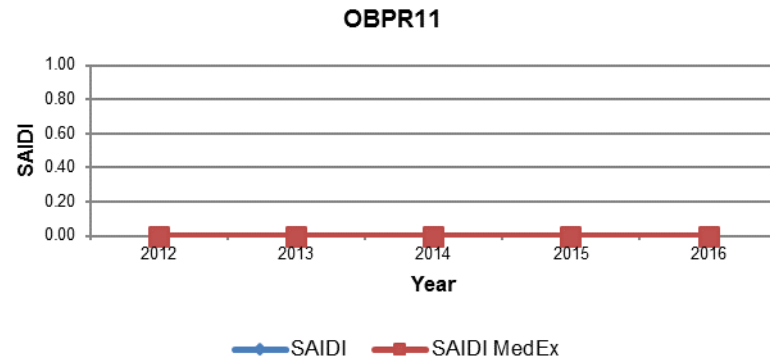
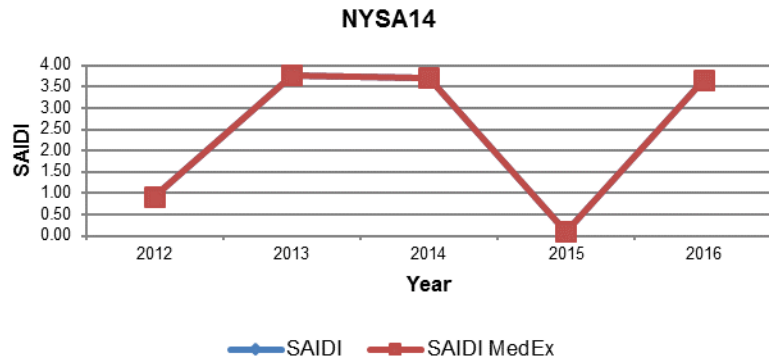


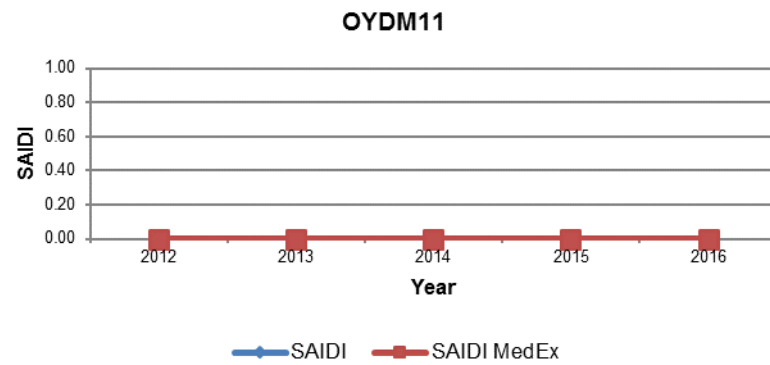
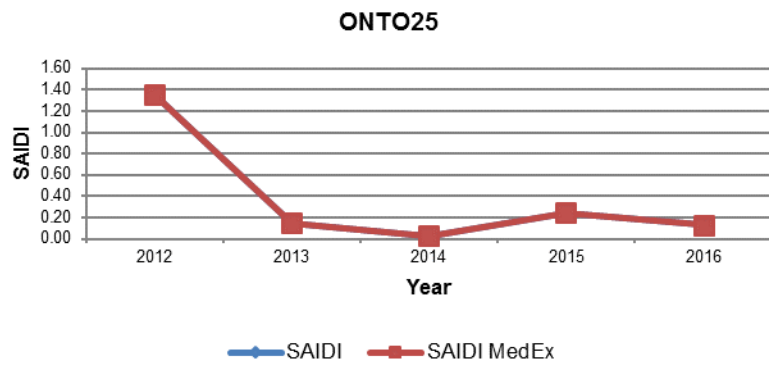
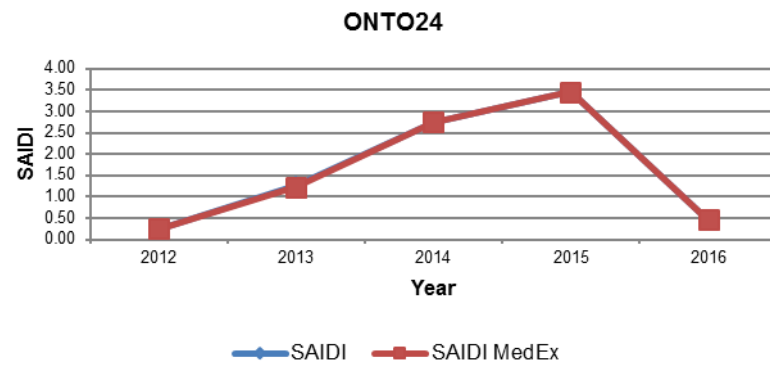
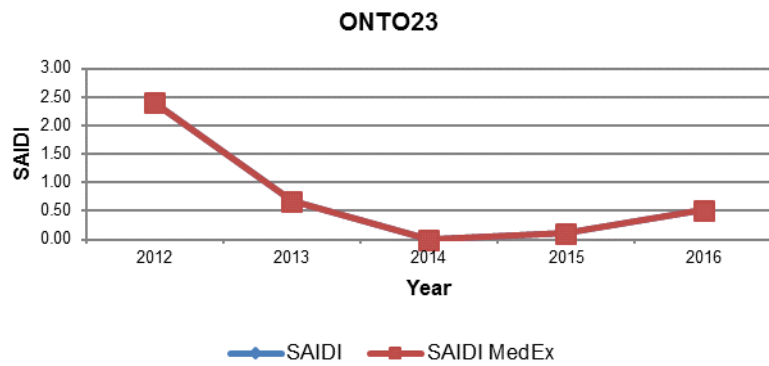
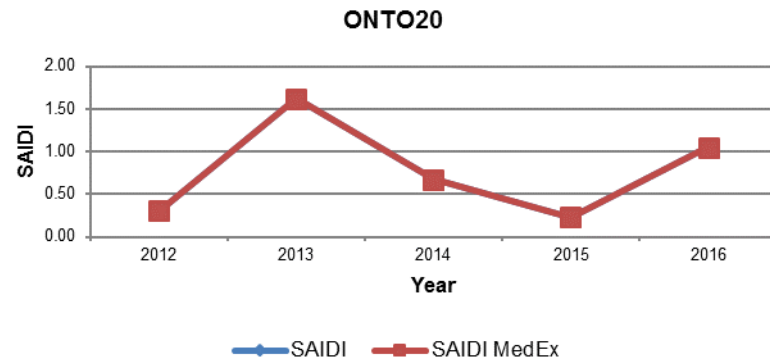
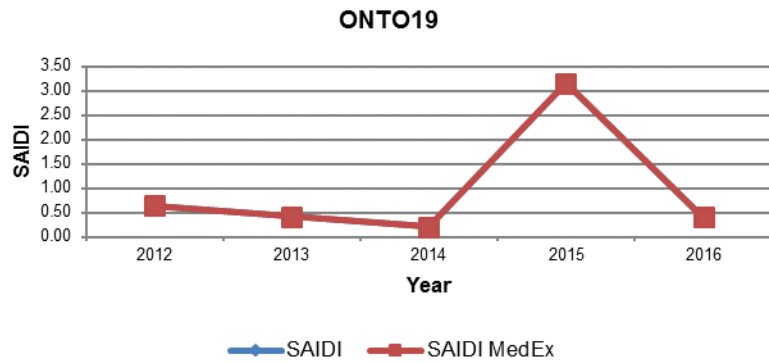




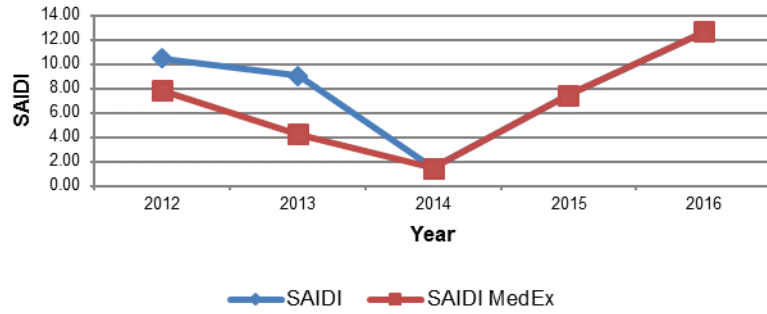




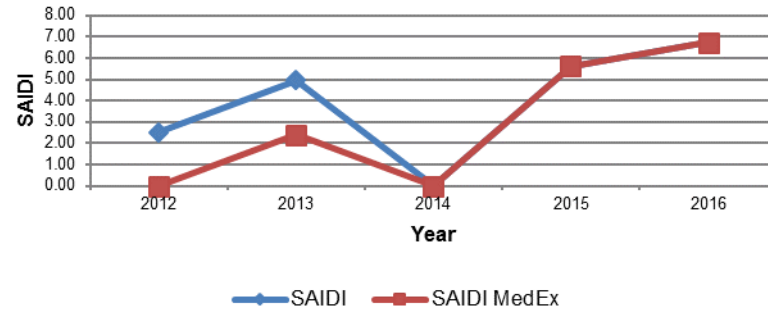




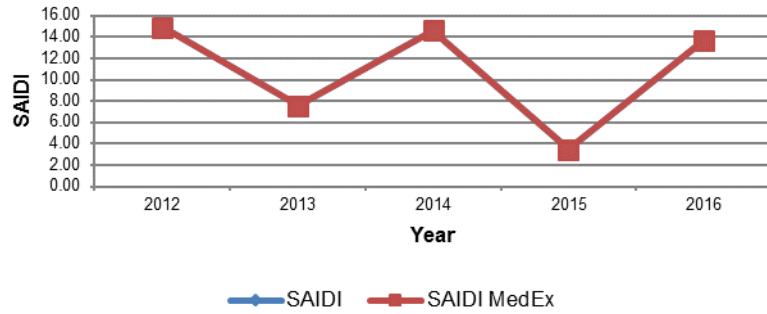
PNCK11



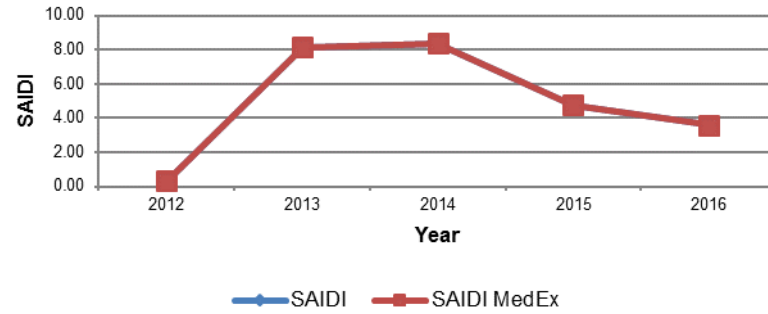
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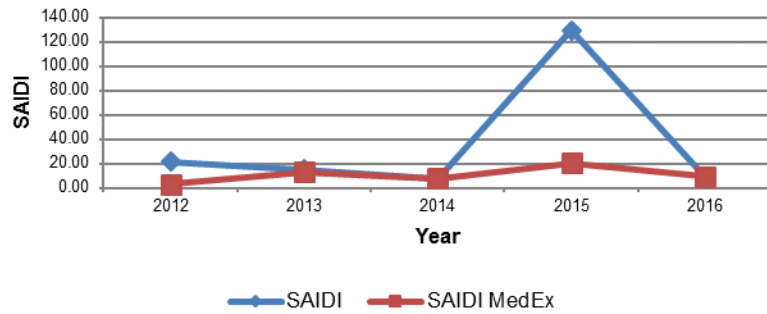
PRMA12



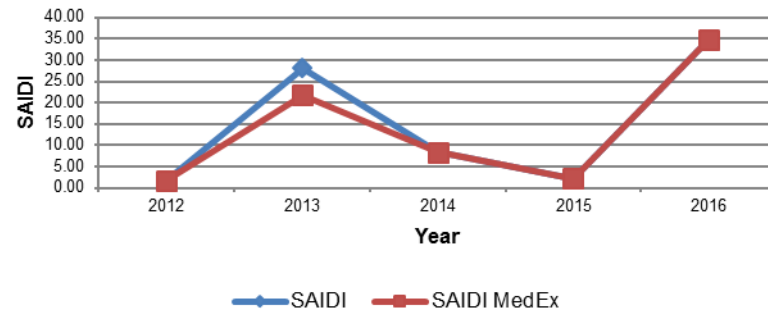
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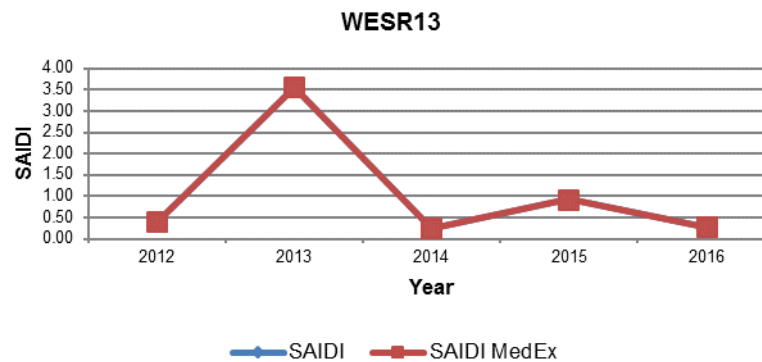
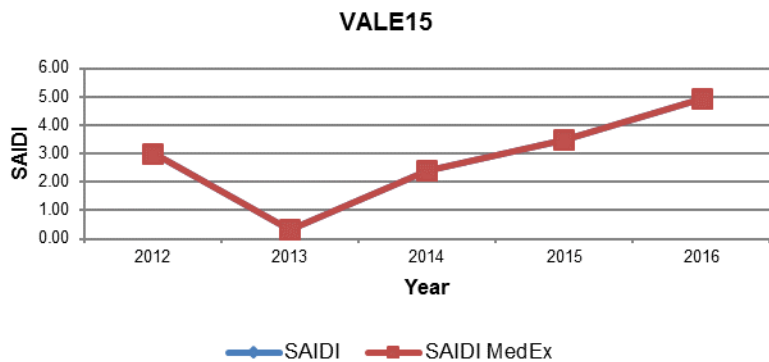
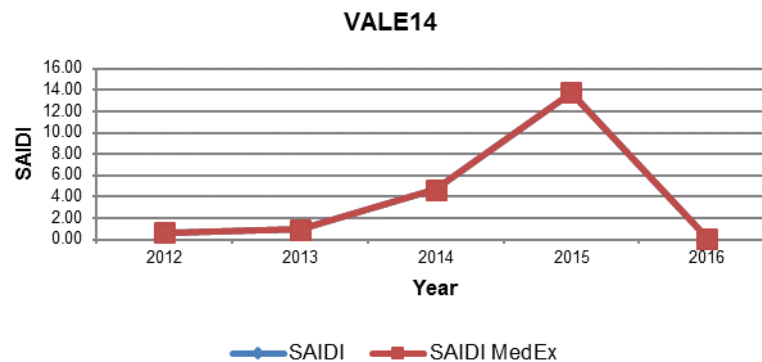
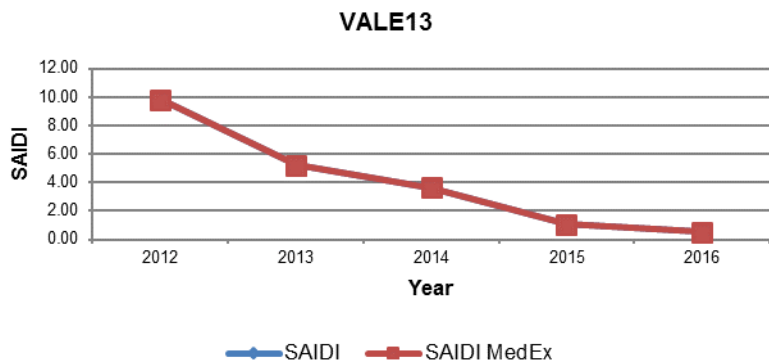
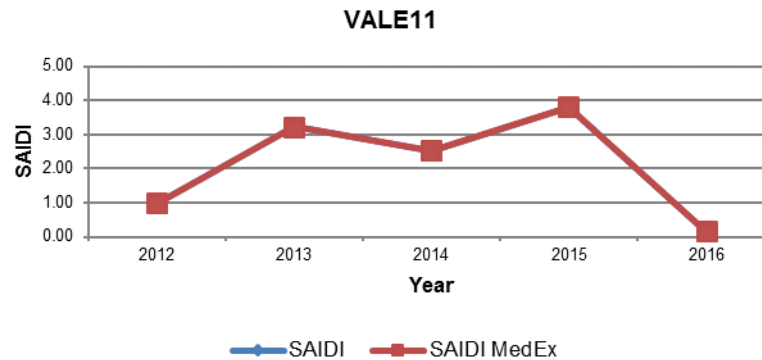
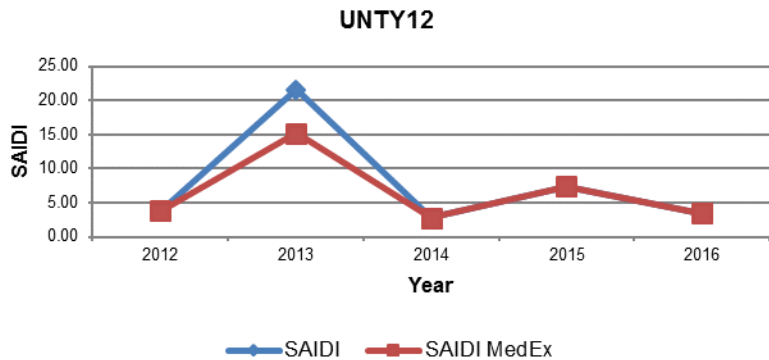


RKVL11



UNTY11





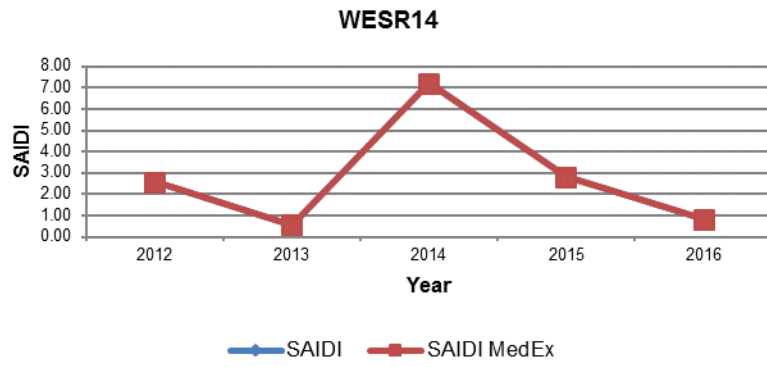


Figure 6 Five Years of Circuit SAIDI

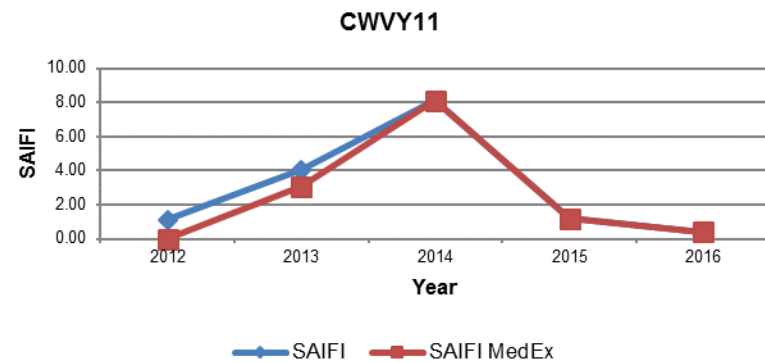
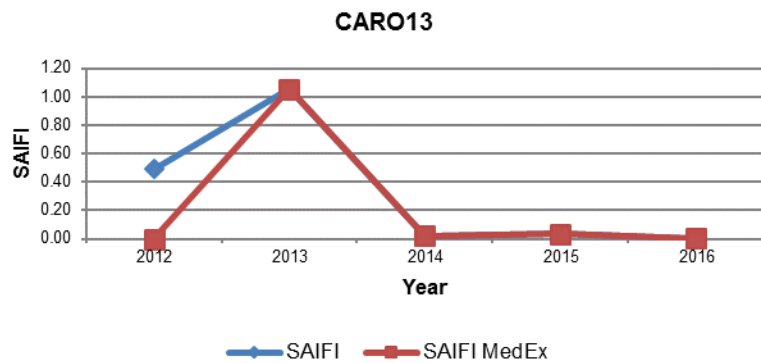
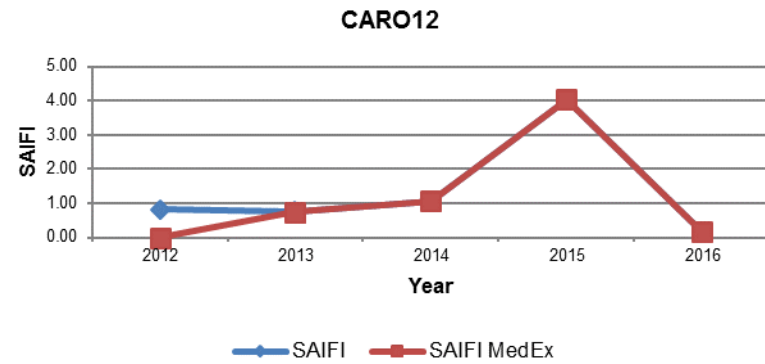
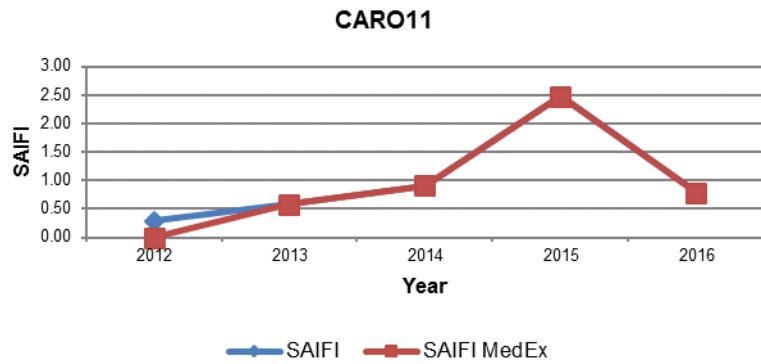
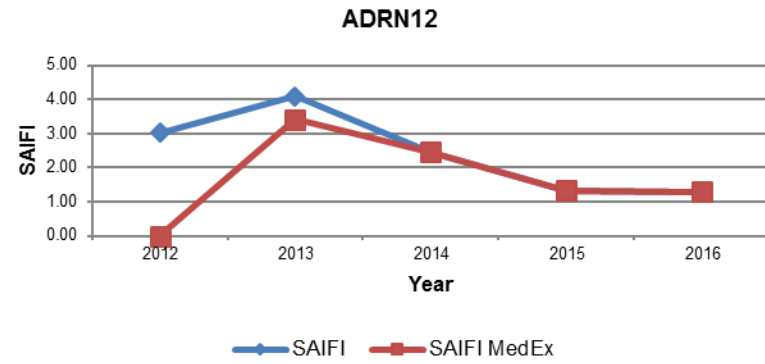
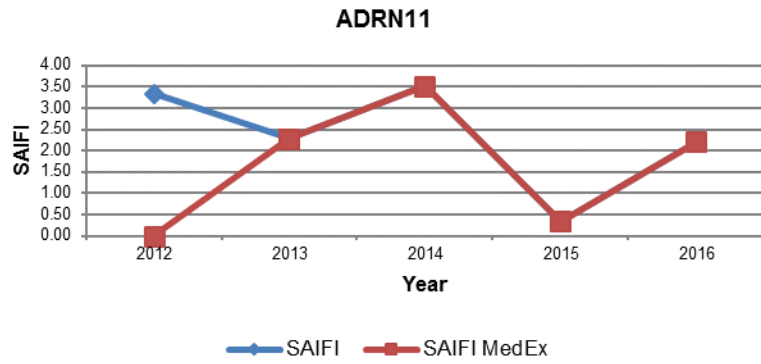
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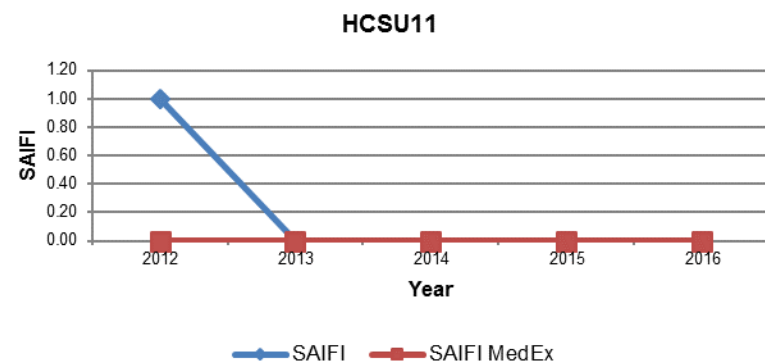
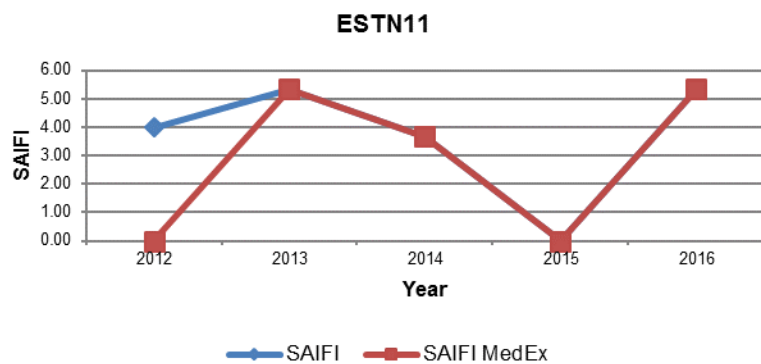
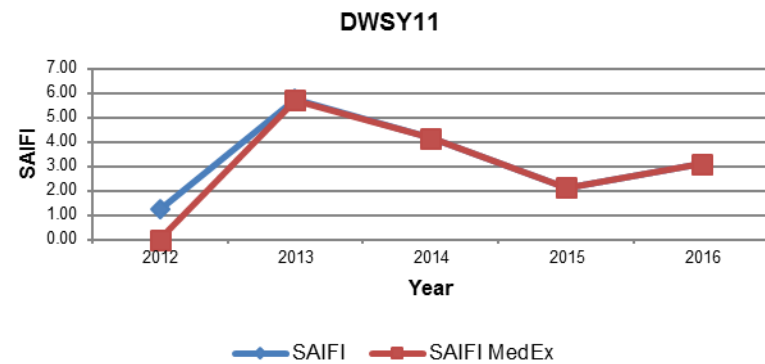
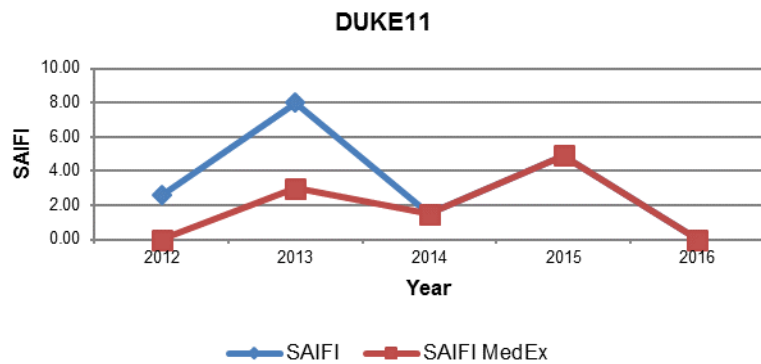
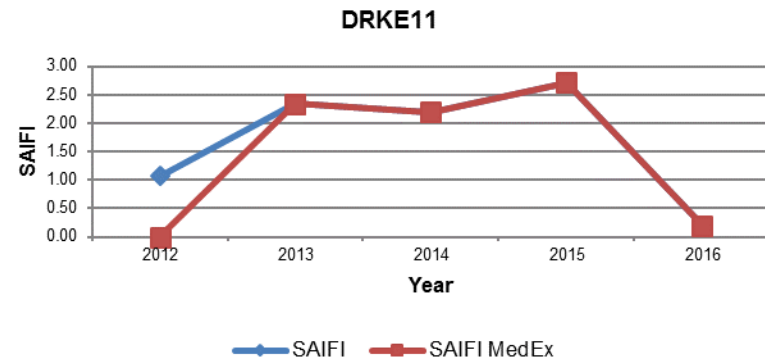
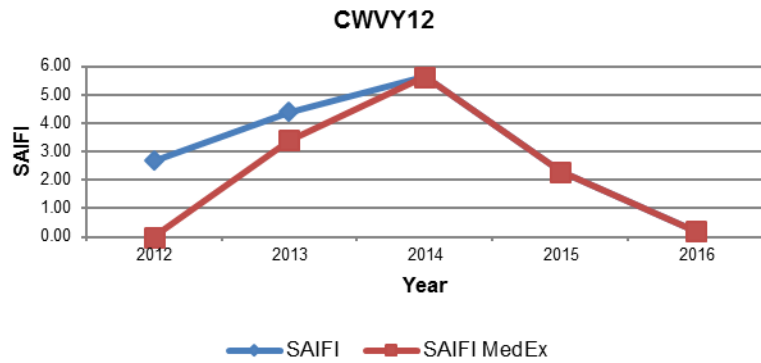
Five Years of Circuit SAIFI

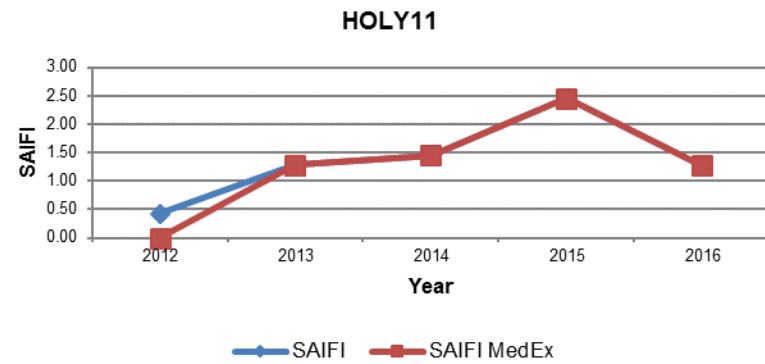
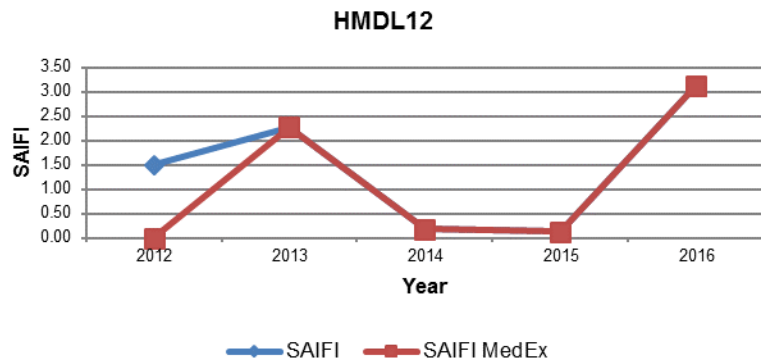
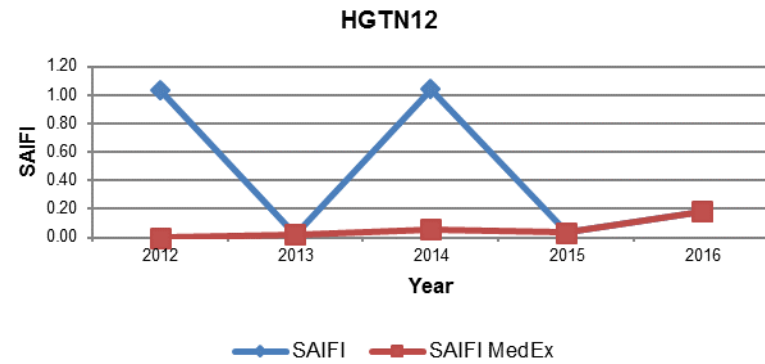
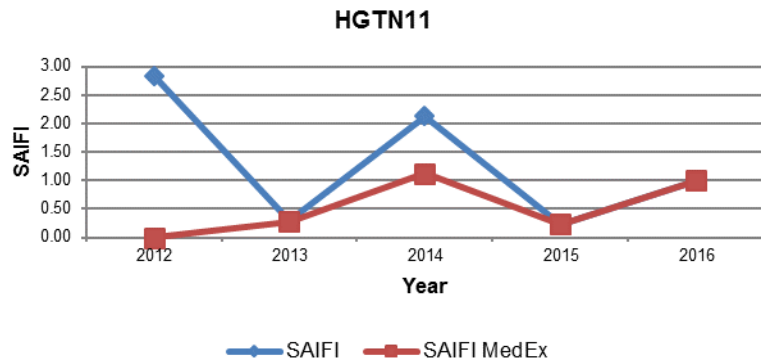
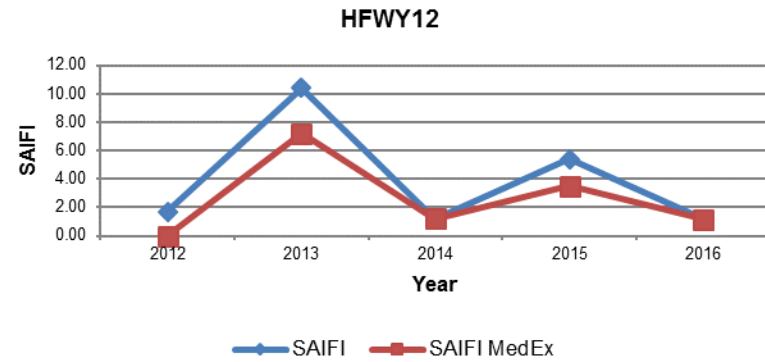
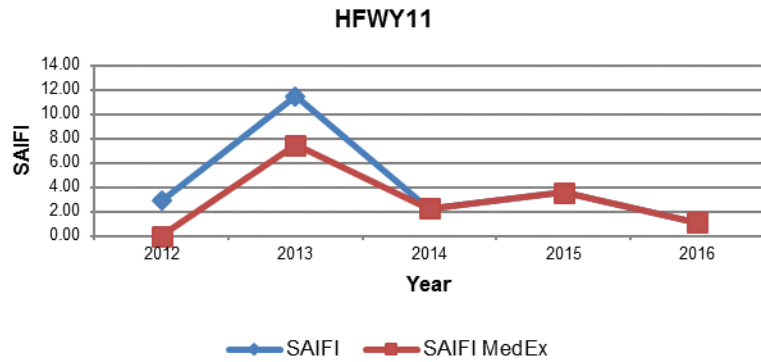
Circuit	2012	2013	2014	2015	2016	2016 MED Excluded
ADRN11	3.34	2.29	3.52	0.34	2.21	2.21
ADRN12	3.02	4.10	2.46	1.33	1.29	1.29
CARO11	0.29	0.58	0.91	2.48	0.79	0.79
CARO12	0.82	0.77	1.06	4.03	0.16	0.16
CARO13	0.49	1.05	0.02	0.04	0.00	0.00
CWVY11	1.13	4.07	8.13	1.18	0.42	0.42
CWVY12	2.68	4.40	5.65	2.29	0.20	0.20
DRKE11	1.07	2.34	2.19	2.72	0.20	0.20
DUKE11	2.59	8.00	1.50	4.93	0.00	0.00
DWSY11	1.23	5.76	4.16	2.13	3.10	3.10
ESTN11	4.00	5.33	3.67	0.00	5.33	5.33
HCSU11	1.00	0.00	0.00	0.00	0.00	0.00
HFVY11	2.90	11.46	2.26	3.58	1.08	1.08
HFVY12	1.71	10.44	1.21	5.42	1.17	1.17
HGTN11	2.84	0.30	2.13	0.24	1.00	1.00
HGTN12	1.04	0.02	1.04	0.03	0.19	0.19
HMDL12	1.50	2.27	0.18	0.13	3.13	3.13
HOLY11	0.43	1.28	1.45	2.46	1.27	1.27
HOLY12	0.38	2.08	0.01	2.38	1.18	1.18
HOLY13	1.46	2.05	0.35	1.66	1.09	1.09
HOPE11	0.46	3.40	4.02	0.45	3.19	3.19
HRPR11	0.29	1.77	4.61	1.22	1.53	1.53
HRPR12	1.23	3.00	7.20	2.46	3.34	3.34
JMSN11	1.21	6.92	4.45	2.01	0.36	0.36
JMSN12	2.83	5.08	5.35	2.16	0.33	0.33
JNTA11	1.37	5.05	4.80	2.30	3.33	3.33
JNTA12	1.04	5.00	4.67	2.13	3.96	3.96
JNVY11	6.18	4.14	3.20	16.77	3.25	3.25
JNVY12	6.12	4.89	1.98	21.36	2.00	2.00
JNVY31	8.36	4.51	3.73	12.96	6.09	6.09
LIME11	1.94	0.29	2.46	2.31	0.77	0.77
MRBT41	1.15	0.11	1.58	0.13	0.50	0.50
MRBT42	1.10	0.00	1.14	0.11	0.22	0.22
NYSA11	0.13	1.12	2.03	2.75	1.36	1.36
NYSA12	2.49	3.27	1.26	0.68	4.42	4.42
NYSA13	1.51	1.36	2.21	0.15	2.36	2.36
NYSA14	0.60	2.02	2.16	0.08	1.47	1.47
OBPR11	0.00	0.00	0.00	0.00	0.00	0.00

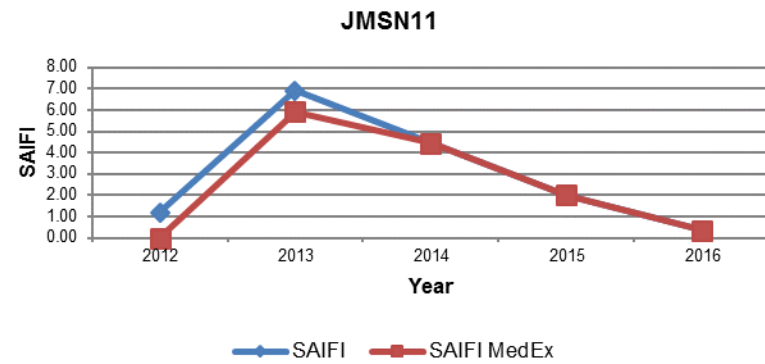
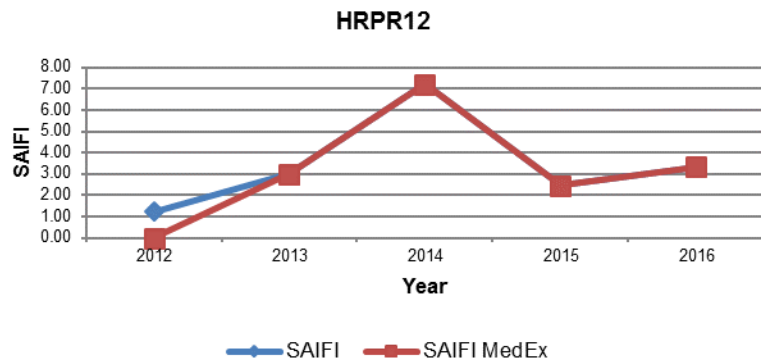
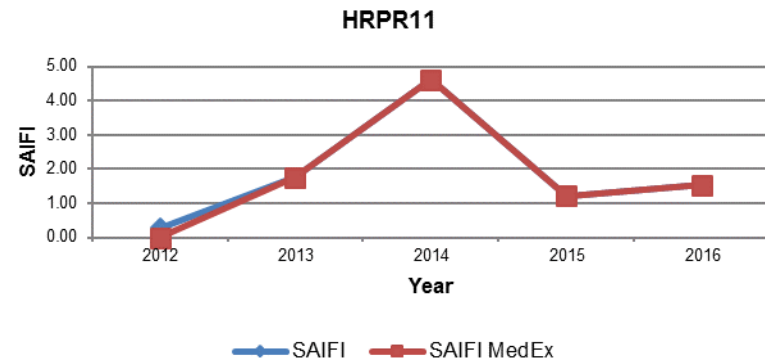
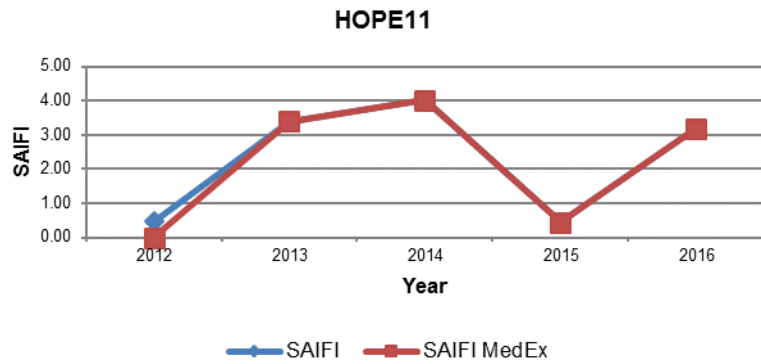
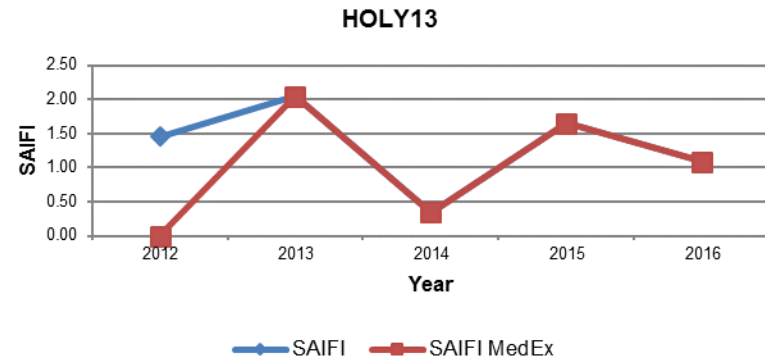
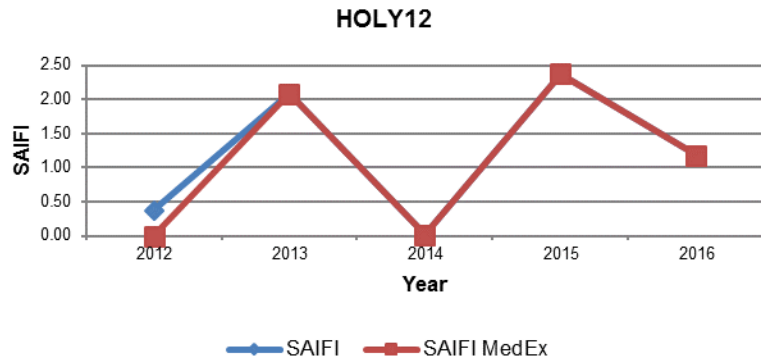
Circuit	2012	2013	2014	2015	2016	2016 MED Excluded
OIDA11	1.09	2.10	0.08	0.10	0.24	0.24
OIDA12	0.00	3.00	2.00	2.00	1.00	1.00
ONTO14	0.14	0.97	0.00	0.03	1.00	1.00
ONTO18	1.02	0.07	0.04	0.17	0.12	0.12
ONTO19	1.10	0.14	0.07	1.60	0.14	0.14
ONTO20	0.18	1.06	0.34	0.19	1.22	1.22
ONTO23	2.00	1.04	0.00	0.15	0.13	0.13
ONTO24	0.16	0.61	1.27	2.61	0.44	0.44
ONTO25	1.07	0.09	0.02	0.16	0.19	0.19
OYDM11	0.00	0.00	0.00	0.00	0.00	0.00
PNCK11	2.27	7.07	0.63	3.63	2.91	2.91
PNCK12	1.00	4.00	0.00	4.00	1.00	1.00
PRMA12	3.00	5.50	6.50	2.00	8.00	8.00
PRMA42	0.22	3.30	2.42	3.37	1.66	1.66
RKVL11	5.22	4.81	3.96	9.25	2.52	2.52
UNTY11	1.08	6.99	3.22	1.39	1.17	1.17
UNTY12	1.68	5.32	2.22	2.07	0.90	0.90
VALE11	1.07	2.52	2.45	1.16	0.10	0.10
VALE13	4.37	1.34	2.86	0.83	0.23	0.23
VALE14	0.59	0.68	3.13	5.62	0.05	0.05
VALE15	1.76	0.17	2.24	1.33	2.84	2.84
WESR13	0.30	0.23	0.14	0.29	0.19	0.19
WESR14	1.21	0.38	2.61	2.61	0.43	0.43

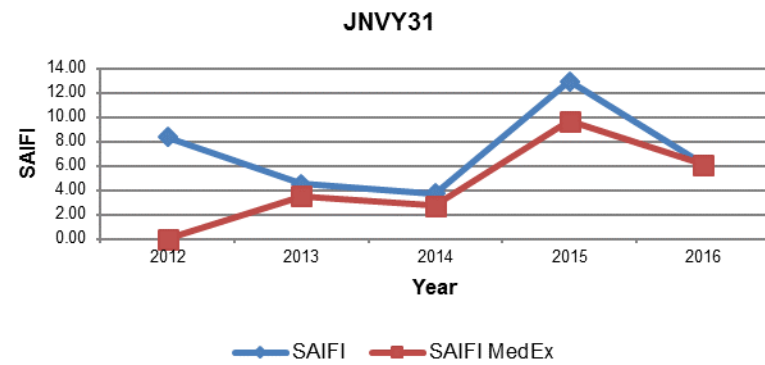
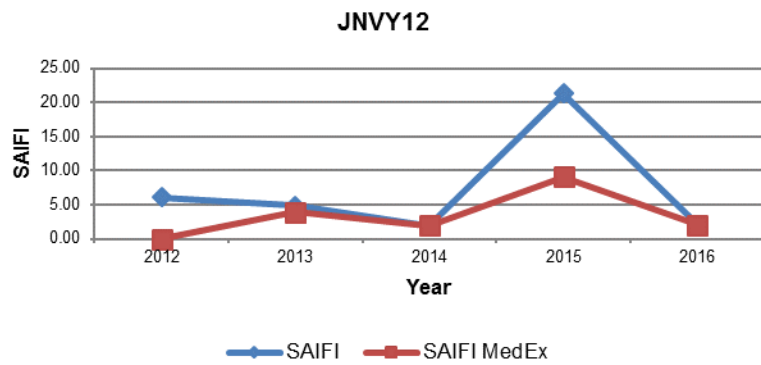
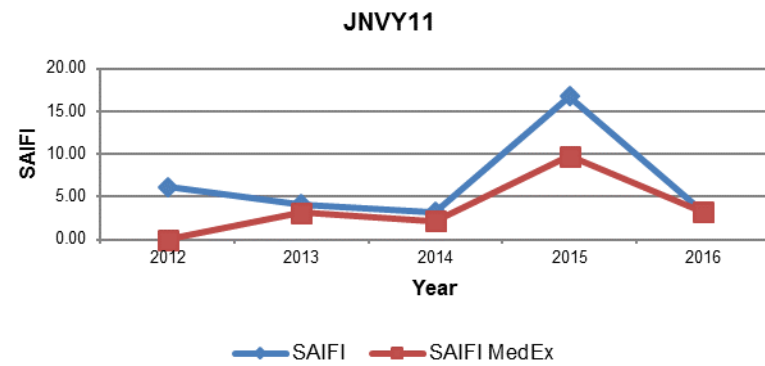
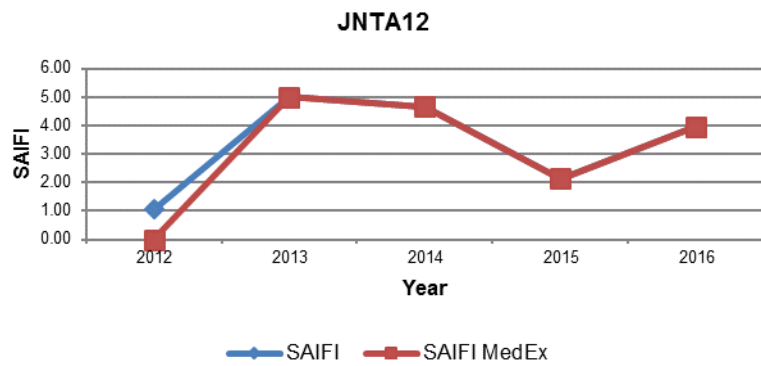
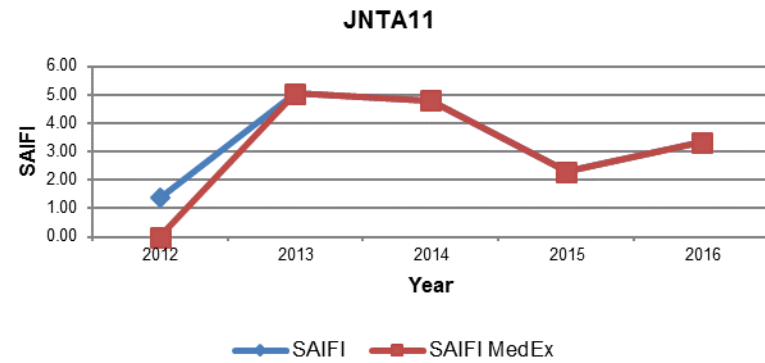
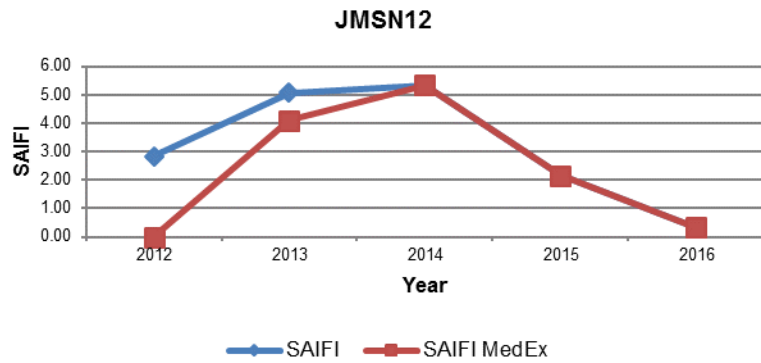
Table 7 Five Years of Circuit SAIFI

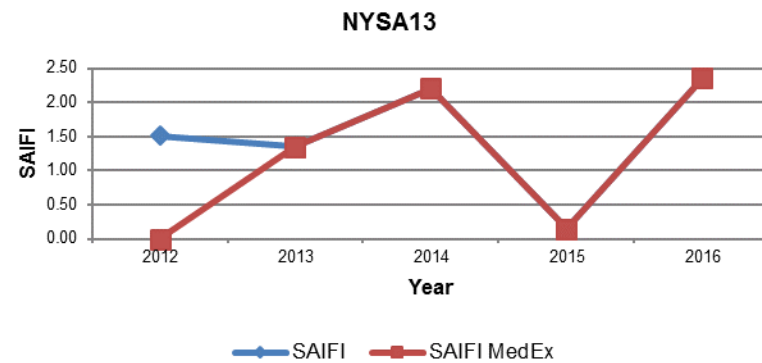
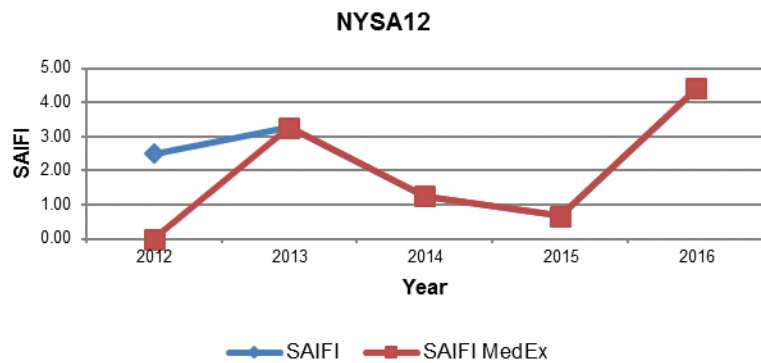
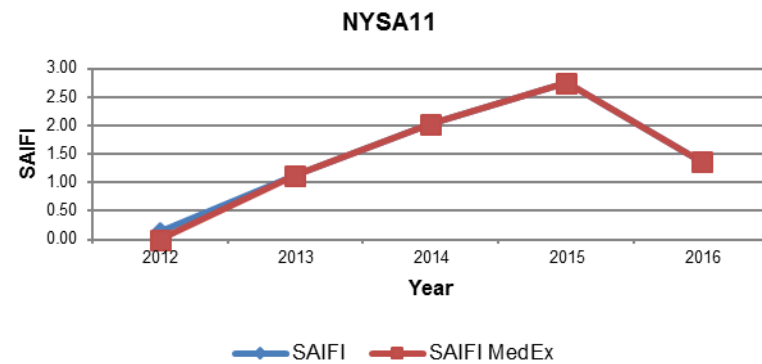
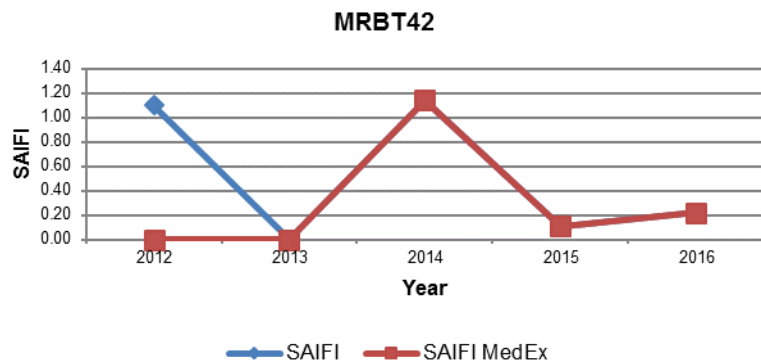
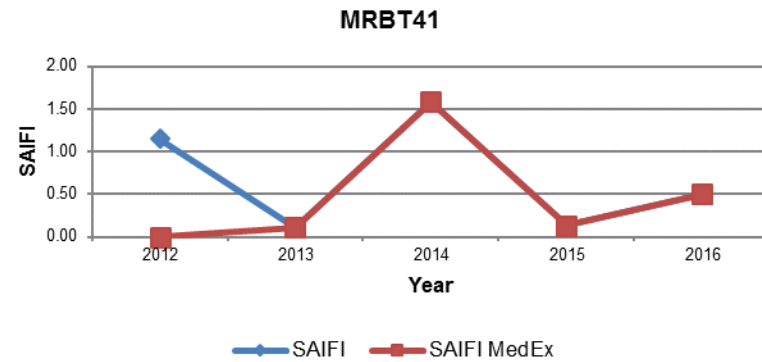
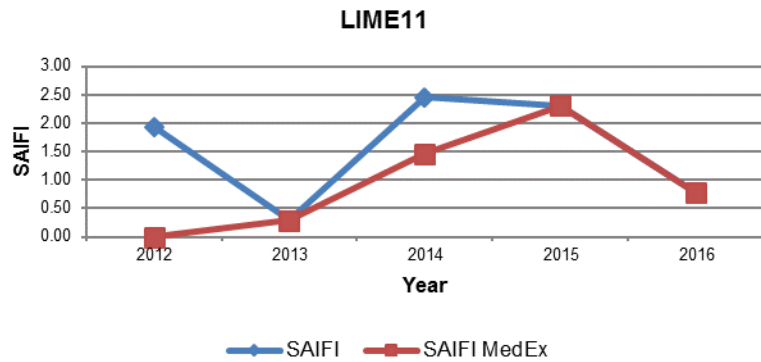


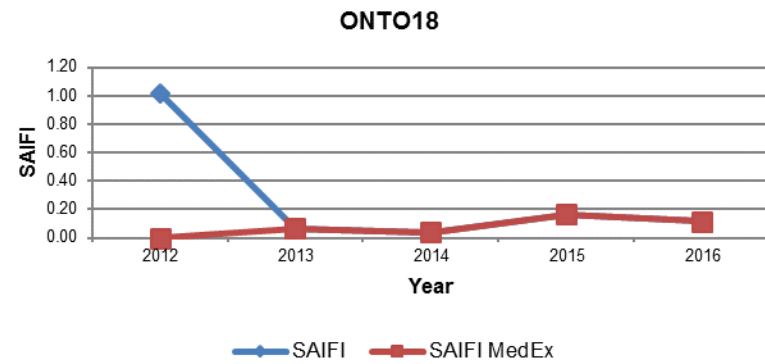
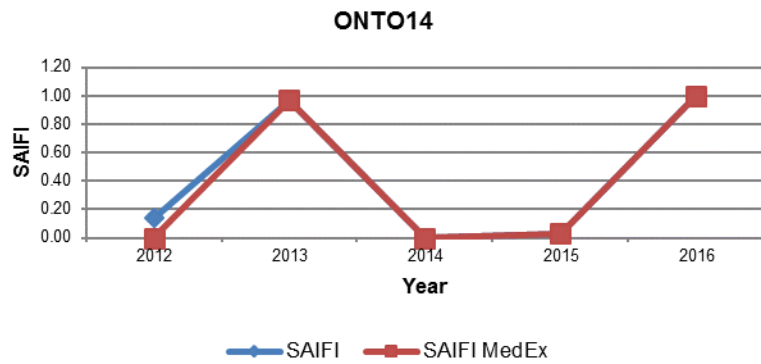
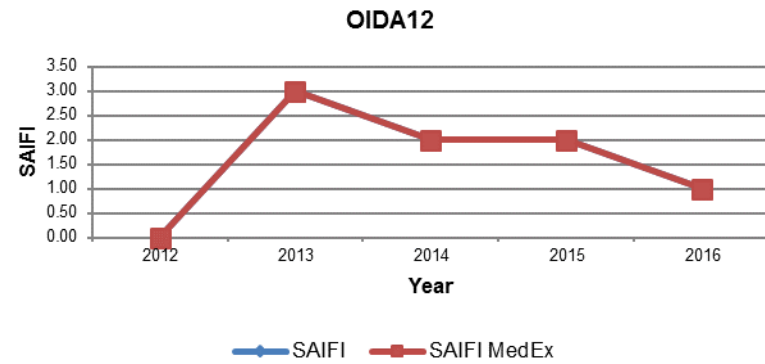
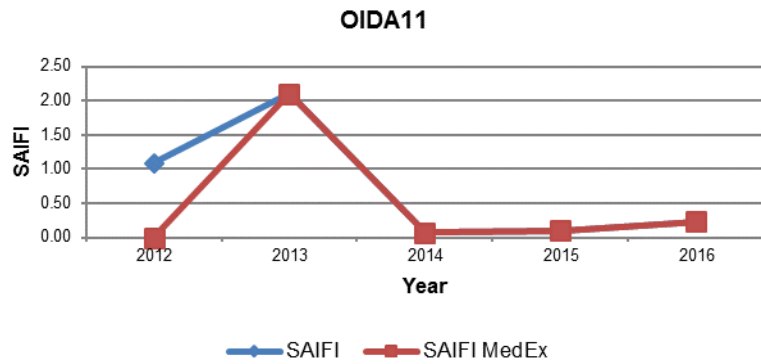
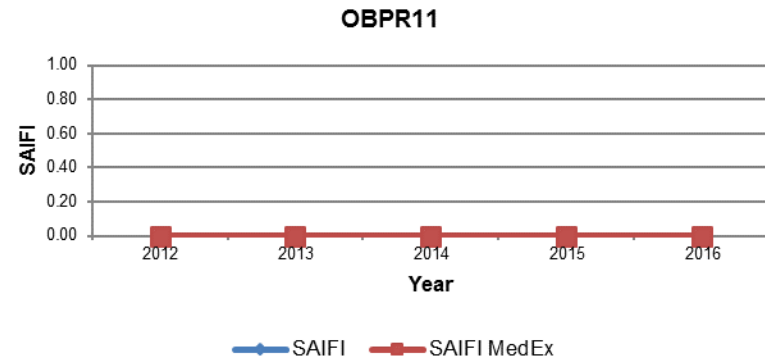
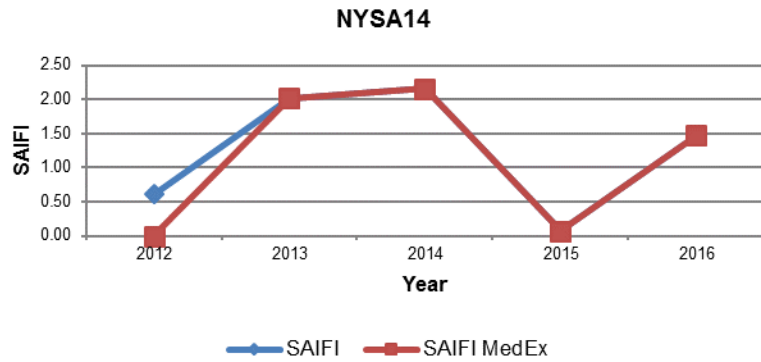


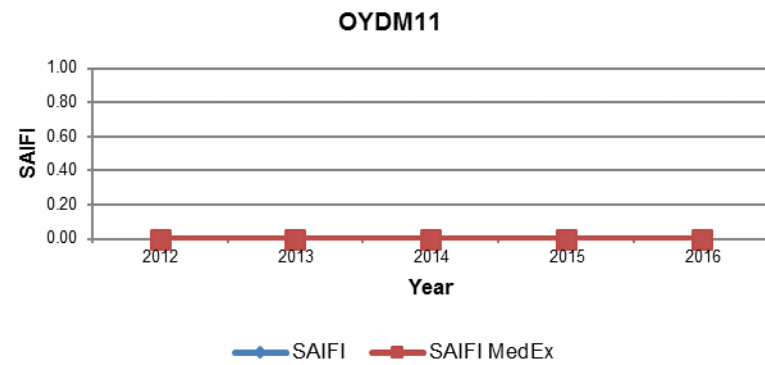
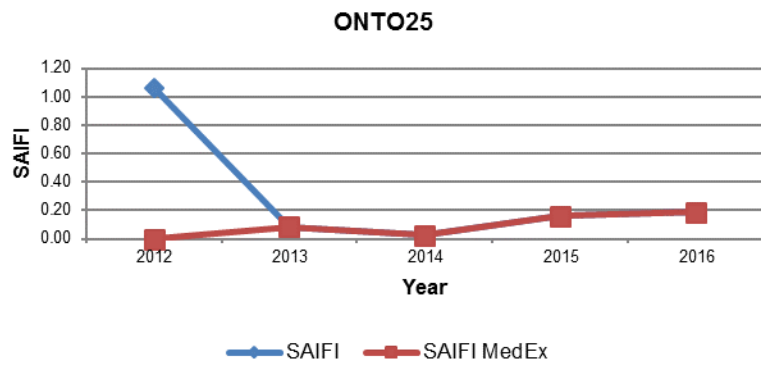
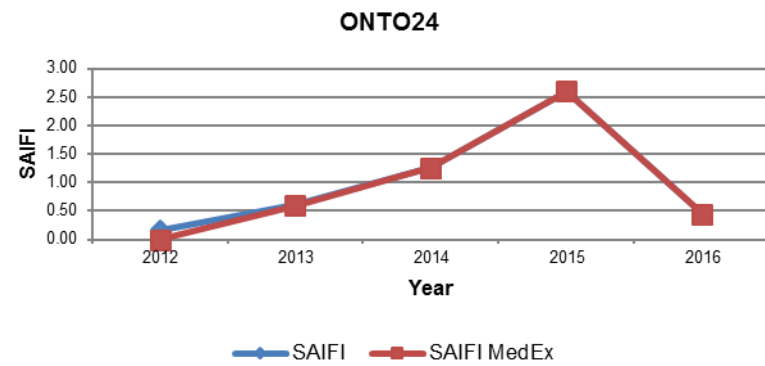
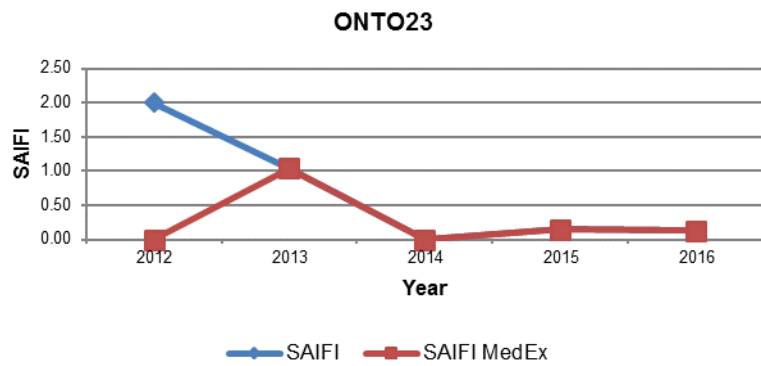
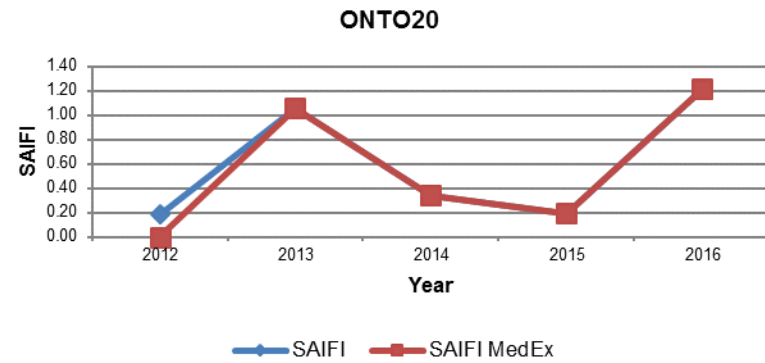
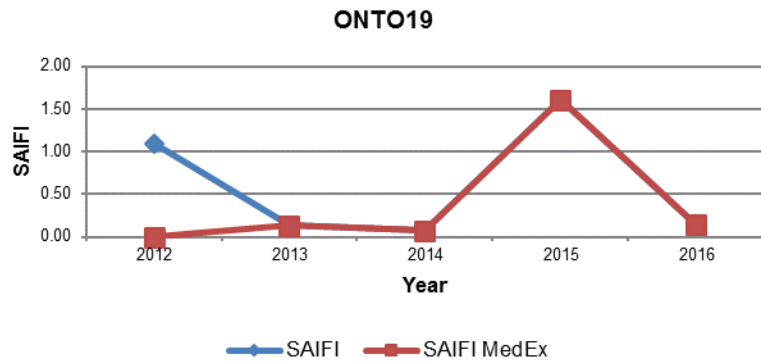


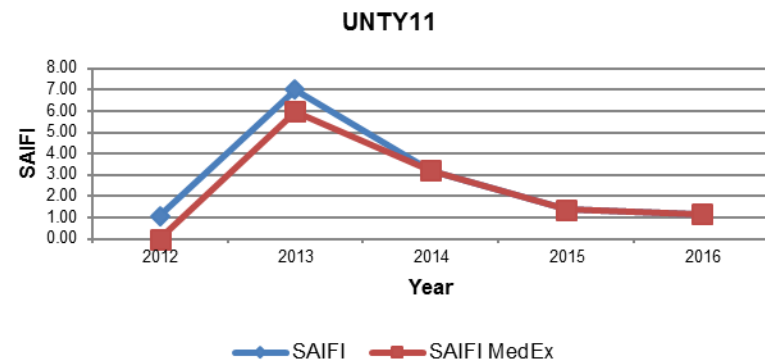
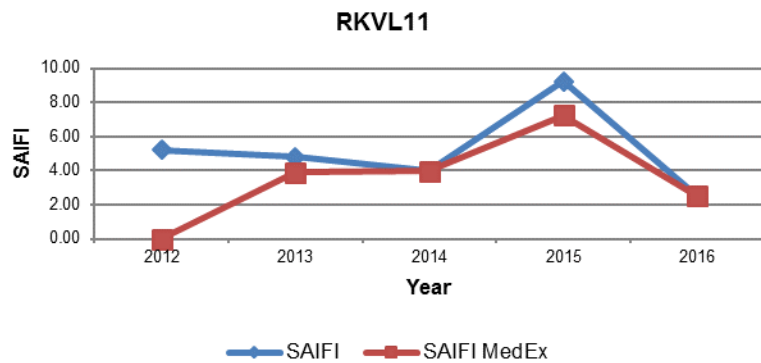
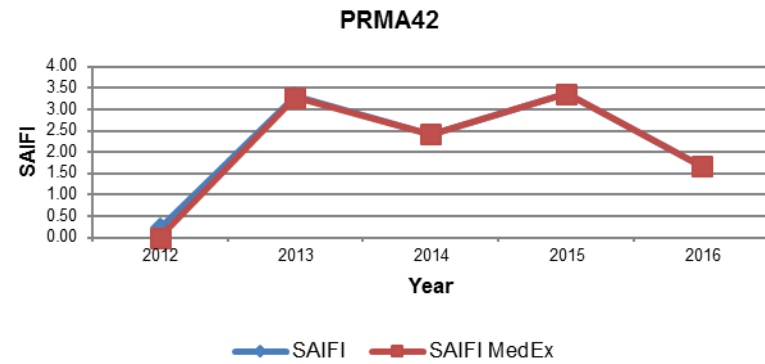
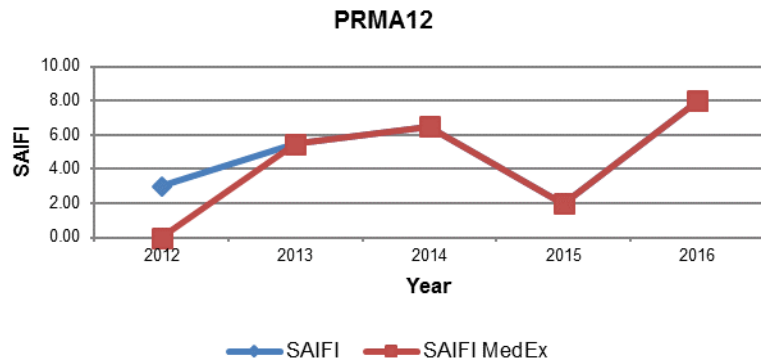
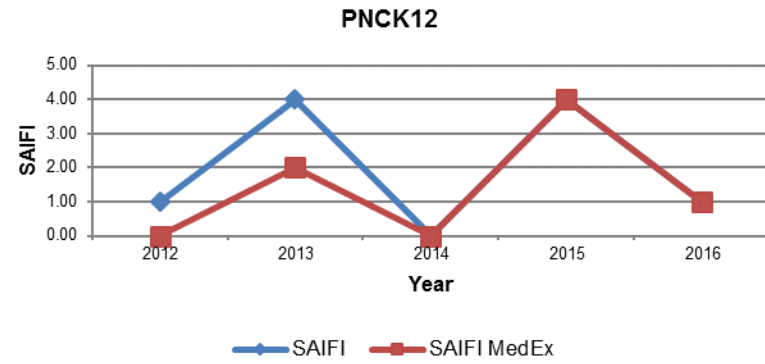
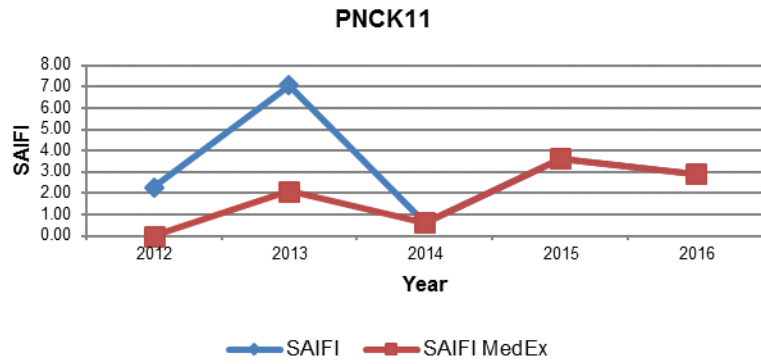


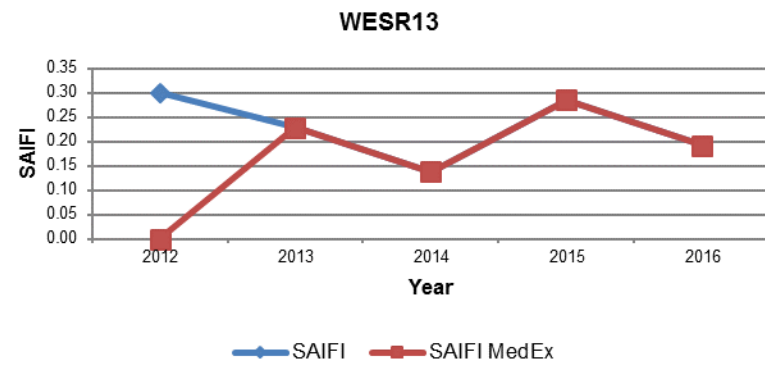
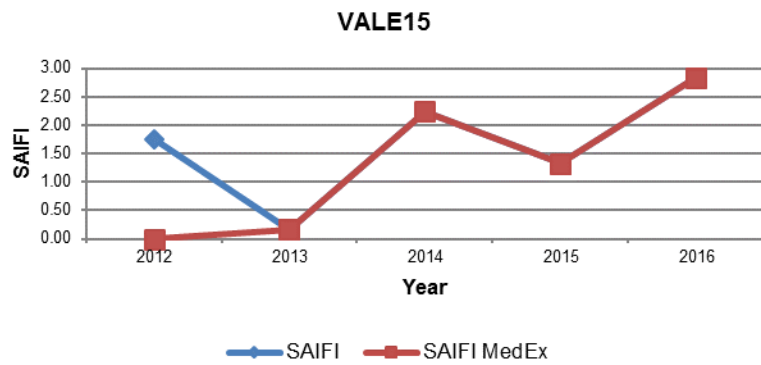
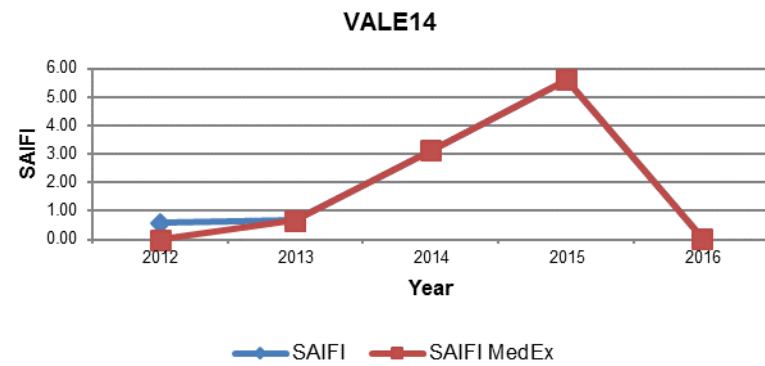
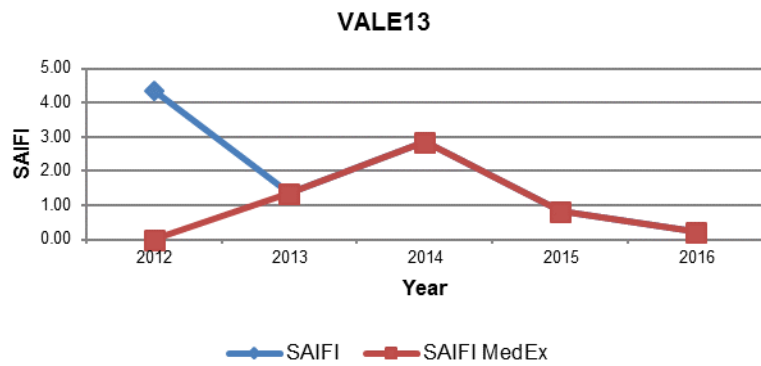
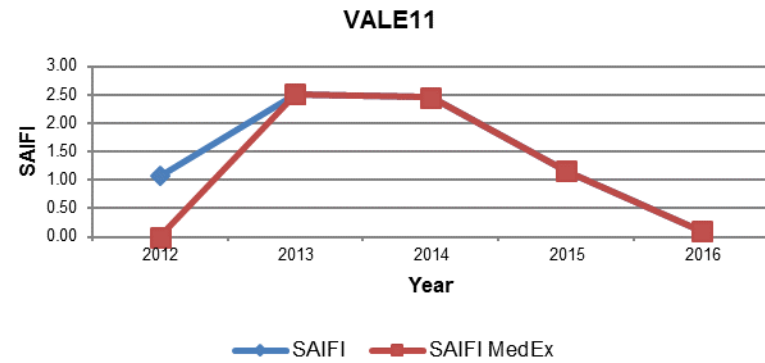
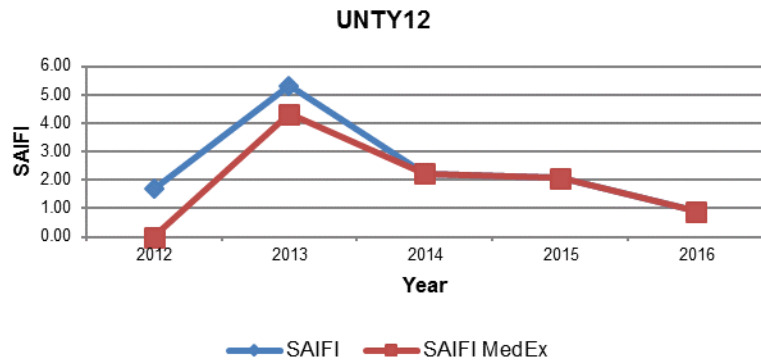












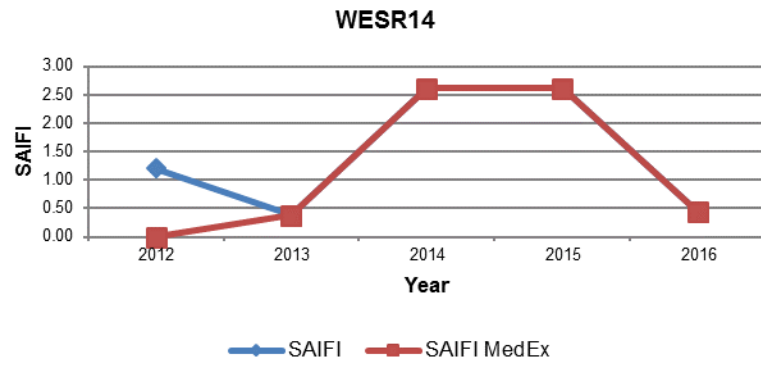


Figure 7 Five Years of Circuit SAIFI

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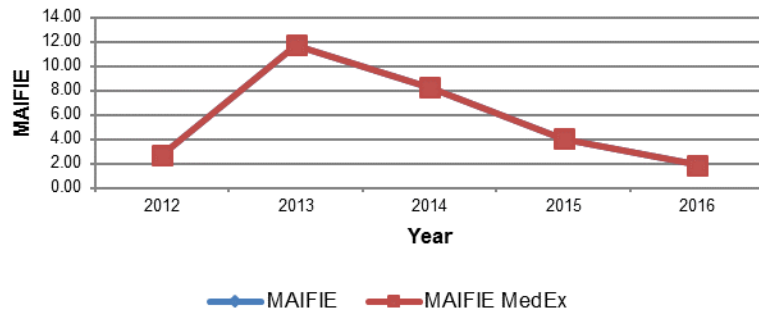
Five Years of Circuit MAIFI_E

Circuit	2012	2013	2014	2015	2016	2016 MED Excluded
ADRN11	2.73	11.73	8.25	4.05	1.91	1.91
ADRN12	6.44	28.94	7.94	6.84	2.00	2.00
CARO11	7.69	3.04	1.53	2.23	4.01	4.01
CARO12	3.90	4.77	3.17	1.00	5.19	5.19
CARO13	3.00	4.00	2.00	0.00	2.00	2.00
CWVY11	6.00	10.00	11.00	9.00	1.00	1.00
CWVY12	6.13	8.31	9.31	5.94	3.06	3.06
DRKE11	11.59	3.00	5.00	9.42	10.33	10.33
DUKE11	0.00	5.00	0.00	7.00	0.00	0.00
DWSY11	12.00	22.00	21.00	10.13	8.27	8.27
ESTN11	0.00	0.00	0.00	0.00	0.00	0.00
HCSU11	0.00	0.00	0.00	0.00	0.00	0.00
HFVY11	14.15	14.00	3.35	9.74	2.64	2.64
HFVY12	3.81	13.00	0.00	12.77	7.25	7.25
HGTN11	5.00	5.00	3.27	2.31	1.00	1.00
HGTN12	0.00	5.00	2.00	3.00	1.00	1.00
HMDL12	3.50	5.00	7.33	9.76	4.72	4.72
HOLY11	2.00	4.00	3.00	3.00	0.00	0.00
HOLY12	1.00	3.00	3.00	5.00	0.00	0.00
HOLY13	3.34	3.00	3.00	4.00	0.42	0.42
HOPE11	1.44	0.00	0.00	1.00	1.00	1.00
HRPR11	0.00	0.00	4.00	1.10	2.09	2.09
HRPR12	4.99	15.38	10.82	4.86	4.96	4.96
JMSN11	6.00	8.00	5.00	0.00	0.00	0.00
JMSN12	6.18	8.00	4.00	6.00	3.00	3.00
JNTA11	12.00	0.00	23.00	9.00	9.00	9.00
JNTA12	0.00	21.98	24.73	9.76	9.25	9.25
JNVY11	6.31	8.00	8.00	12.70	3.66	3.66
JNVY12	8.00	9.00	8.00	7.00	4.00	4.00
JNVY31	9.84	11.35	12.75	7.81	9.28	9.28
LIME11	1.70	4.98	2.32	3.45	1.00	1.00
MRBT41	0.00	0.00	0.00	1.00	0.00	0.00
MRBT42	2.00	0.00	4.00	0.00	0.00	0.00
NYSA11	0.00	8.00	2.00	1.00	1.00	1.00
NYSA12	7.86	7.98	1.06	1.48	5.42	5.42
NYSA13	0.00	0.00	0.00	0.00	0.00	0.00
NYSA14	1.00	7.00	1.00	0.00	1.00	1.00
OBPR11	0.00	0.00	0.00	0.00	0.00	0.00

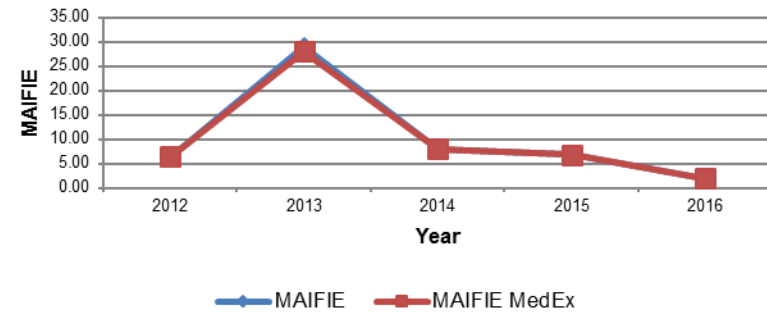
Circuit	2012	2013	2014	2015	2016	2016 MED Excluded
OIDA11	1.07	1.29	0.00	2.94	4.23	4.23
OIDA12	0.00	0.00	0.00	0.00	0.00	0.00
ONTO14	0.00	0.00	0.00	0.00	1.00	1.00
ONTO18	2.00	0.00	3.00	3.00	0.00	0.00
ONTO19	4.87	1.00	1.66	1.50	1.36	1.36
ONTO20	0.00	0.00	2.00	0.00	0.00	0.00
ONTO23	6.00	2.00	0.00	1.00	2.00	2.00
ONTO24	5.96	2.00	0.00	1.32	0.94	0.94
ONTO25	3.00	1.00	2.00	1.00	0.00	0.00
OYDM11	0.00	0.00	0.00	0.00	0.00	0.00
PNCK11	3.14	6.00	0.00	12.17	3.00	3.00
PNCK12	0.00	0.00	0.00	0.00	0.00	0.00
PRMA12	4.00	6.00	11.00	2.00	3.00	3.00
PRMA42	6.57	7.00	10.00	6.32	4.76	4.76
RKVL11	8.00	11.00	10.00	6.00	6.00	6.00
UNTY11	7.27	9.00	7.00	6.00	1.00	1.00
UNTY12	6.30	8.00	0.00	6.73	1.22	1.22
VALE11	2.68	0.00	0.00	1.00	4.17	4.17
VALE13	7.83	9.18	1.09	1.88	4.90	4.90
VALE14	9.00	0.00	0.00	12.62	1.07	1.07
VALE15	4.00	0.00	0.00	2.37	4.51	4.51
WESR13	1.00	2.00	2.44	0.84	0.00	0.00
WESR14	3.45	0.00	0.00	0.00	0.00	0.00

Table 8 Five Years of Circuit MAIFI_E

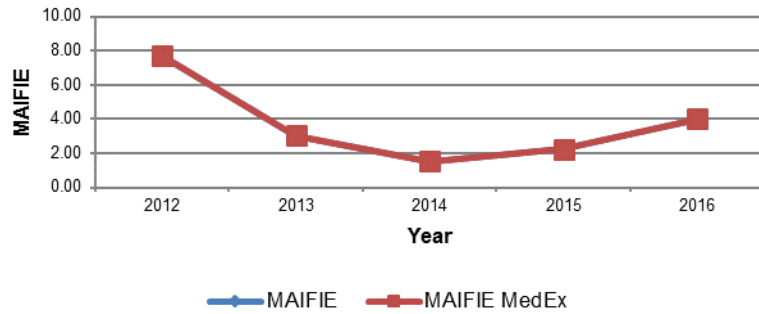
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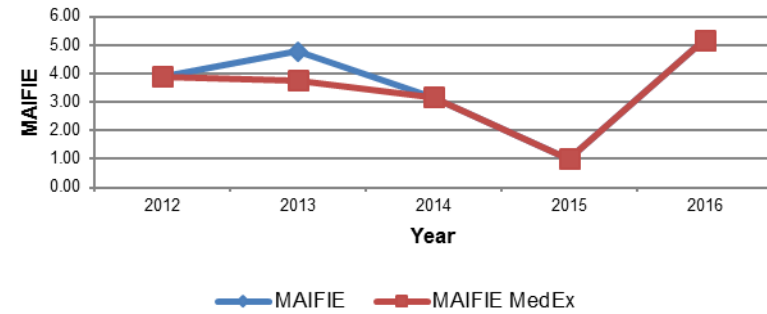
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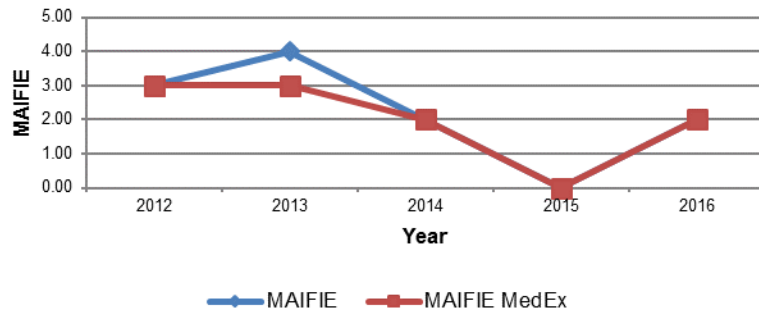
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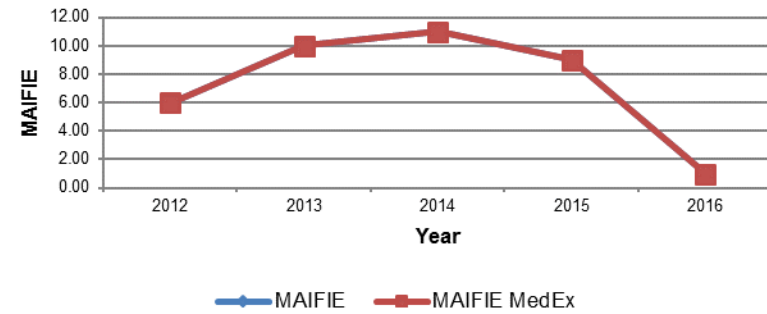
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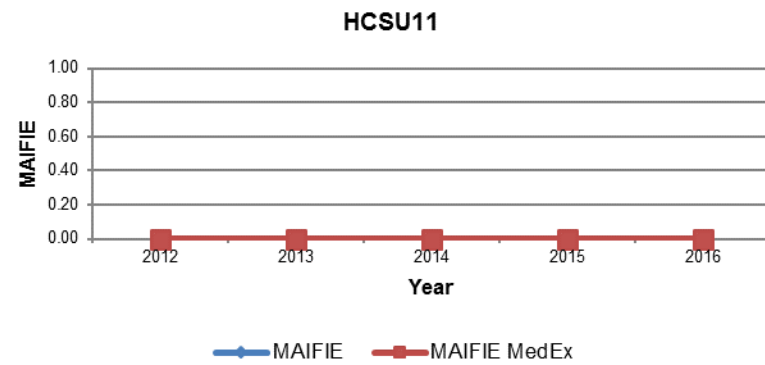
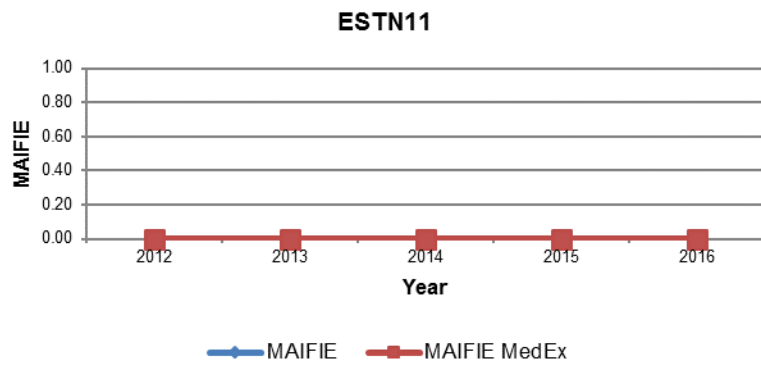
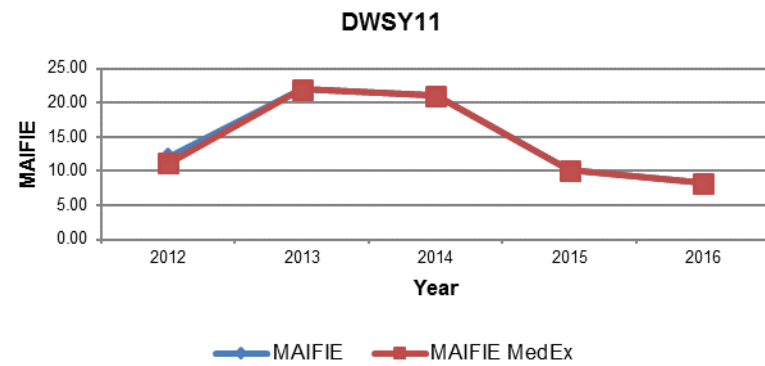
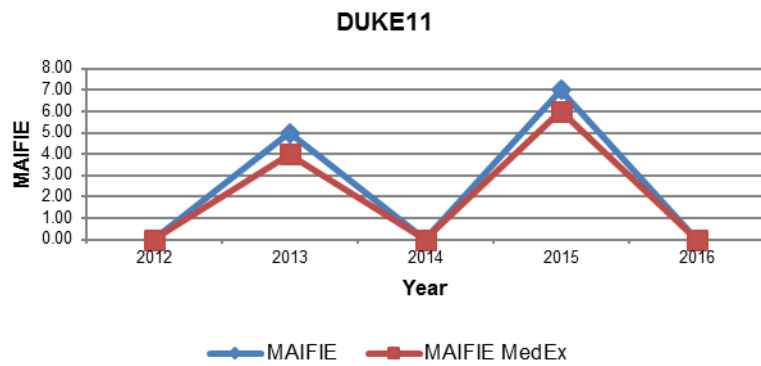
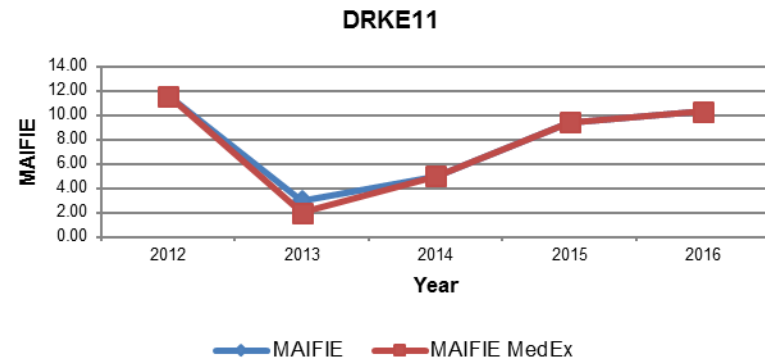
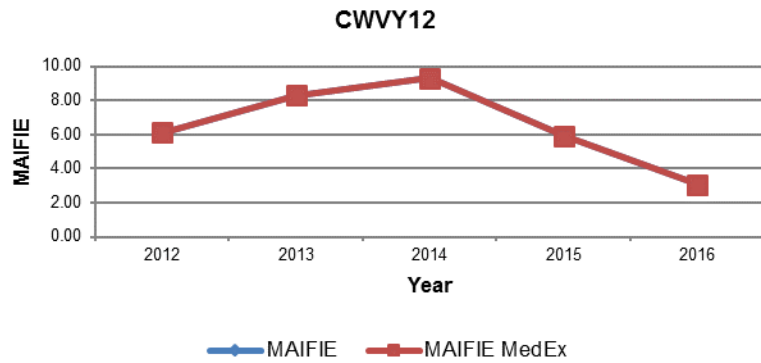


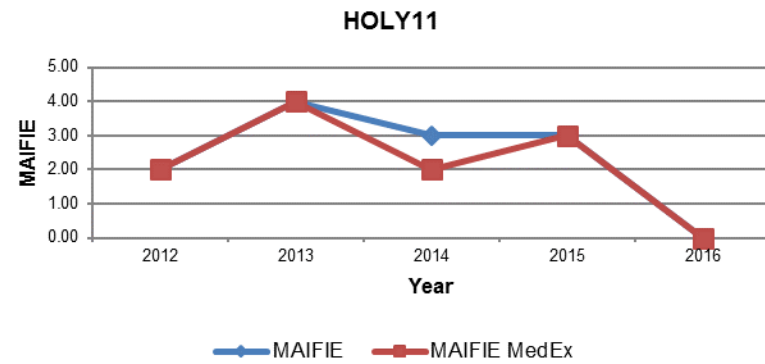
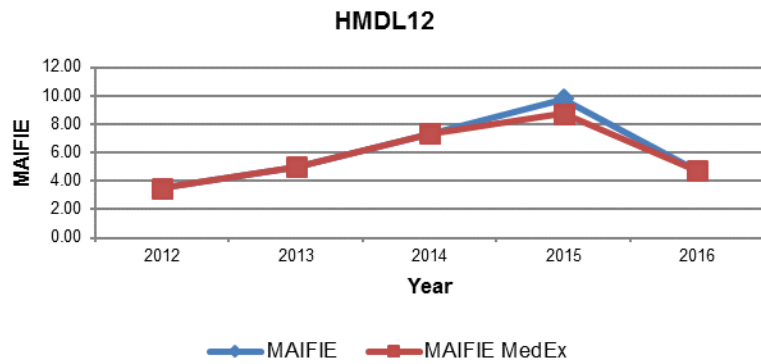
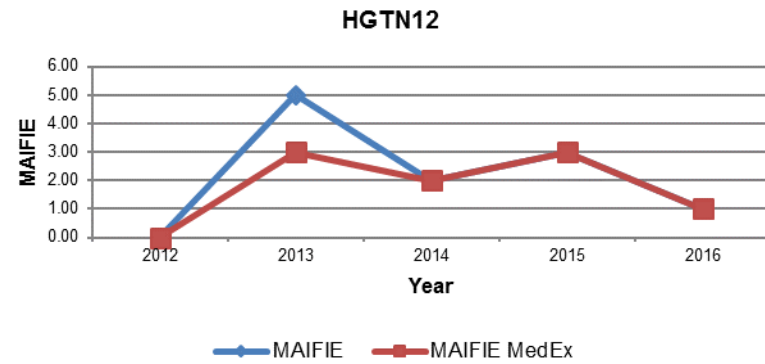
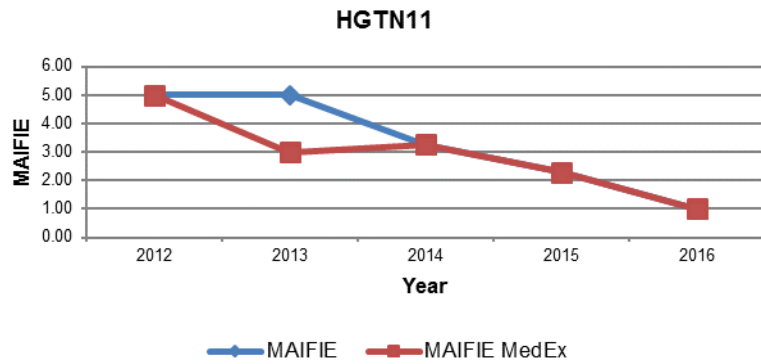
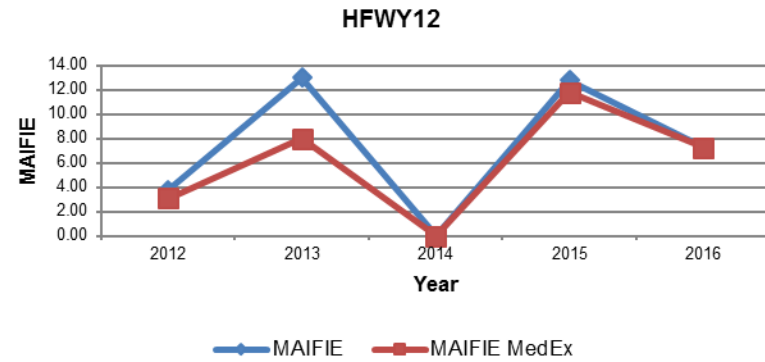
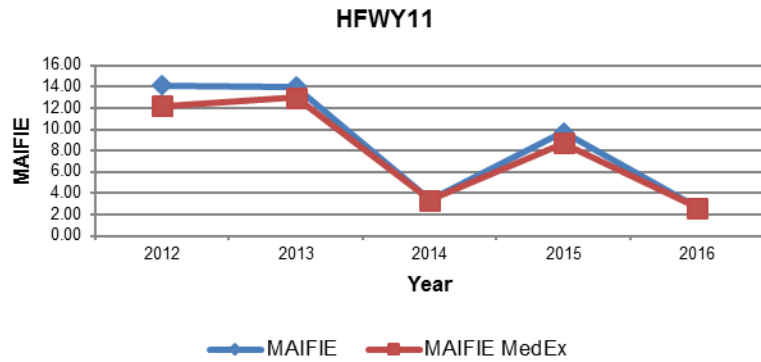
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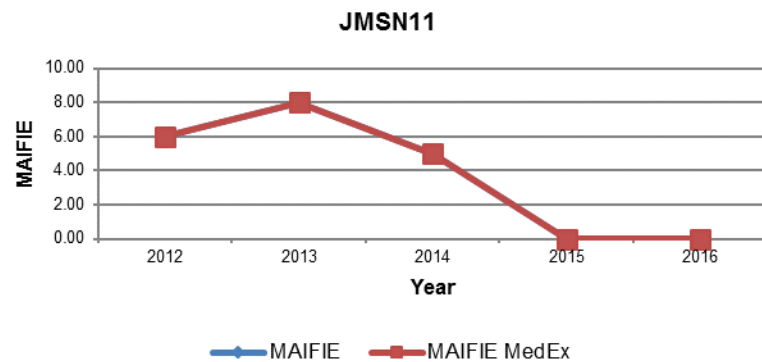
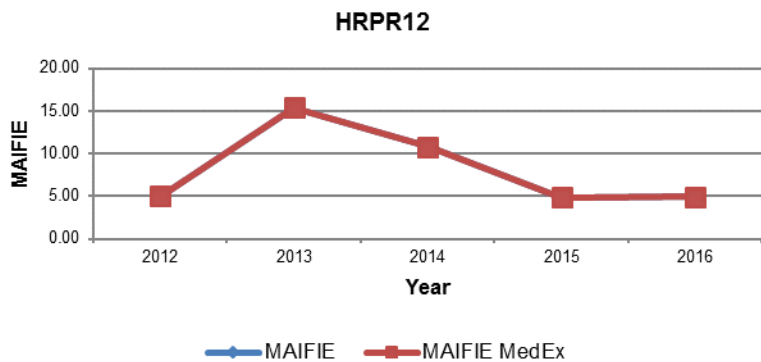
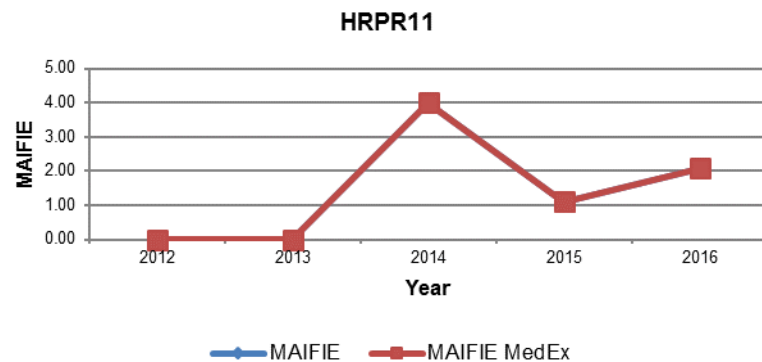
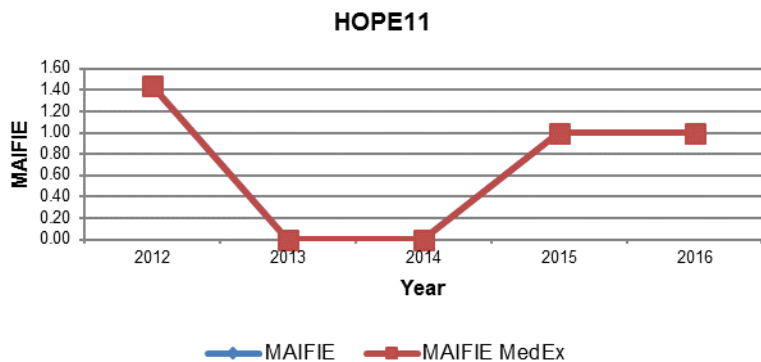
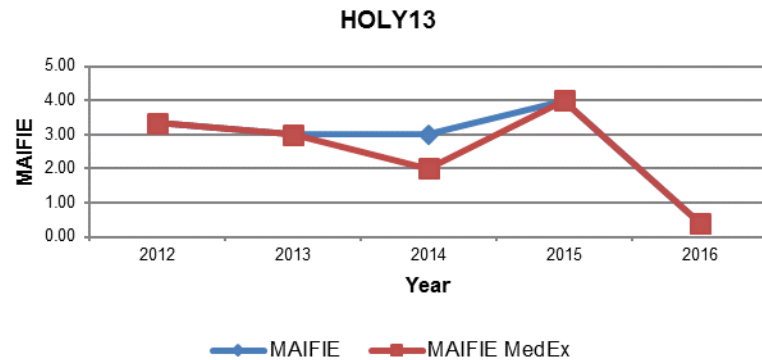
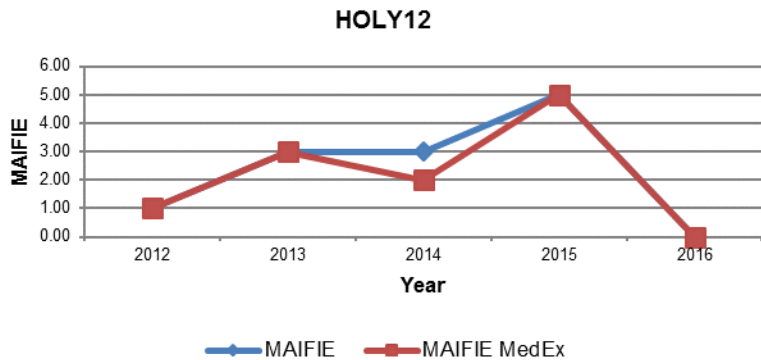


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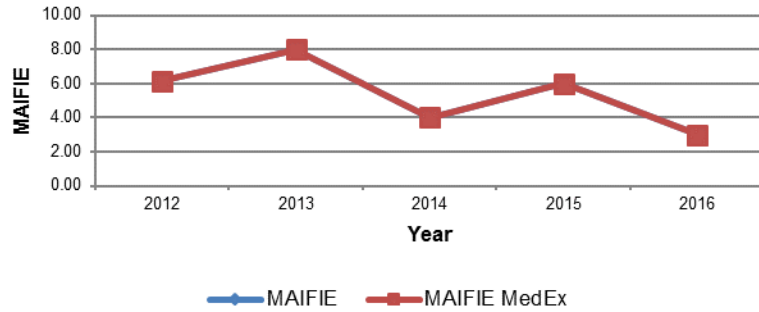




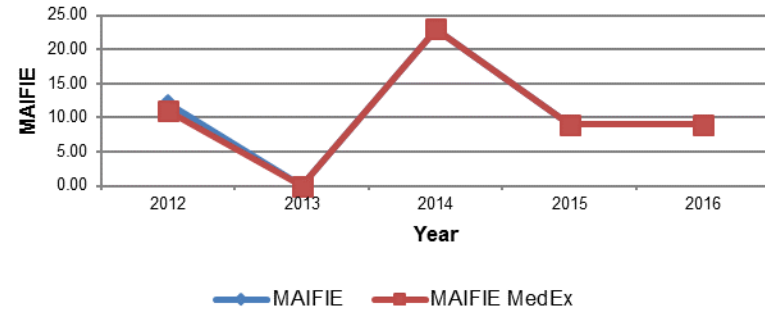




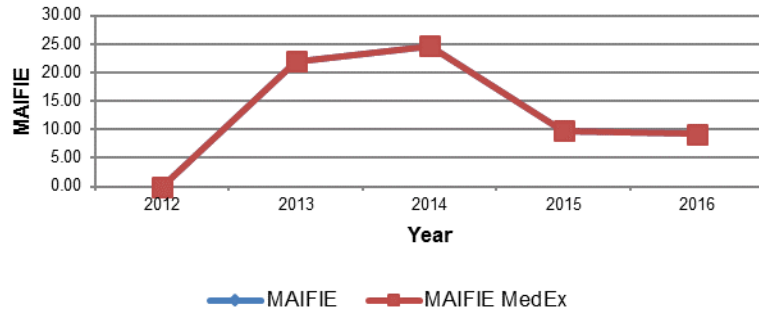
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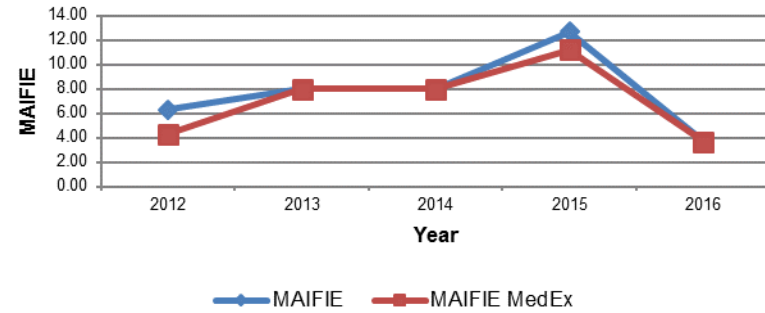
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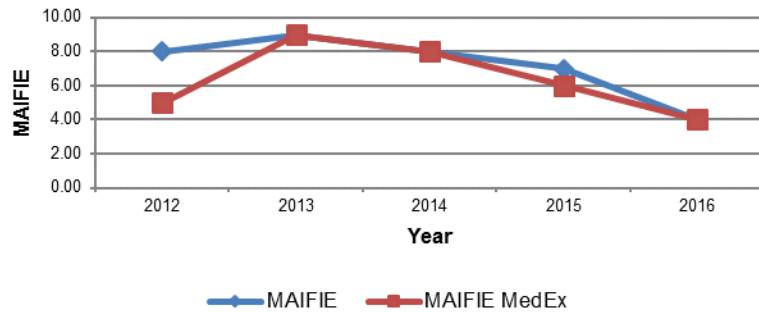
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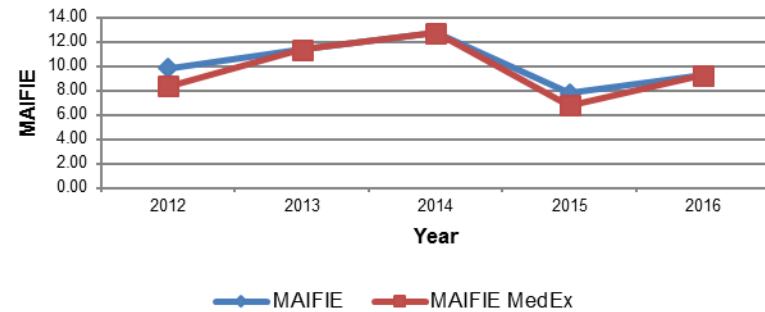
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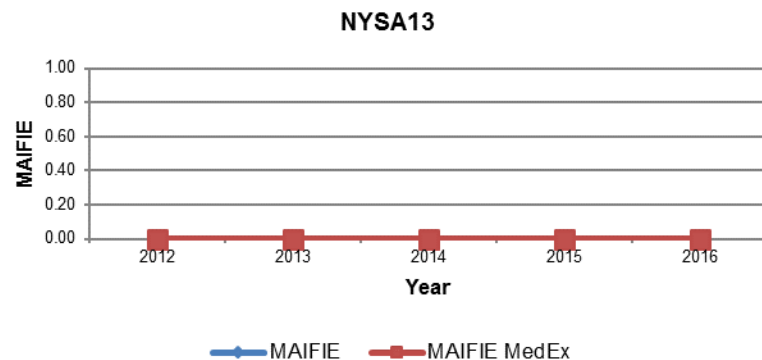
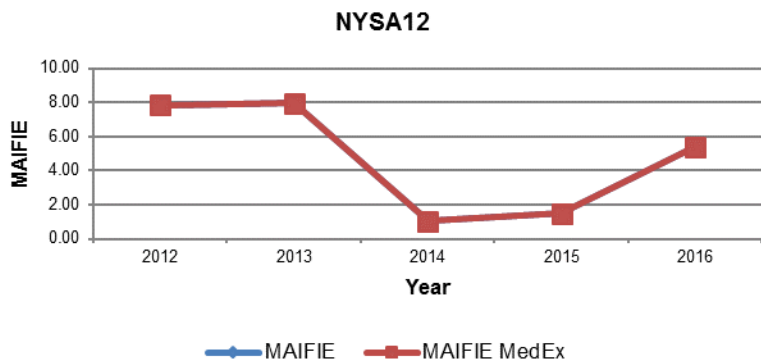
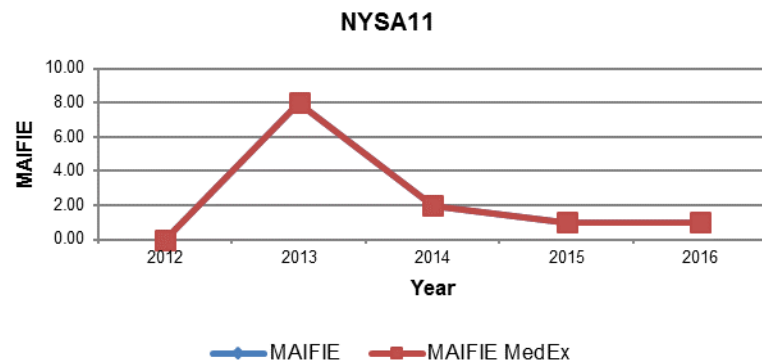
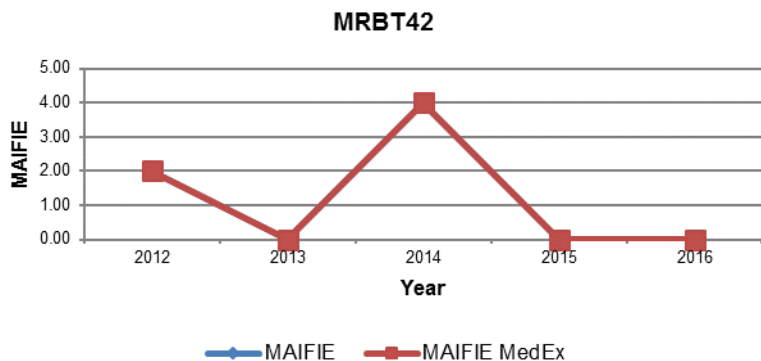
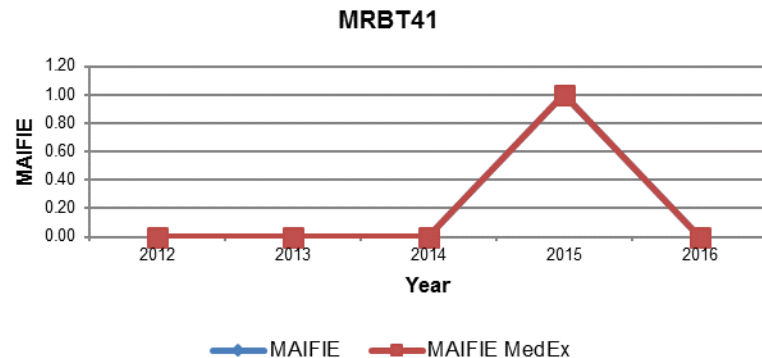
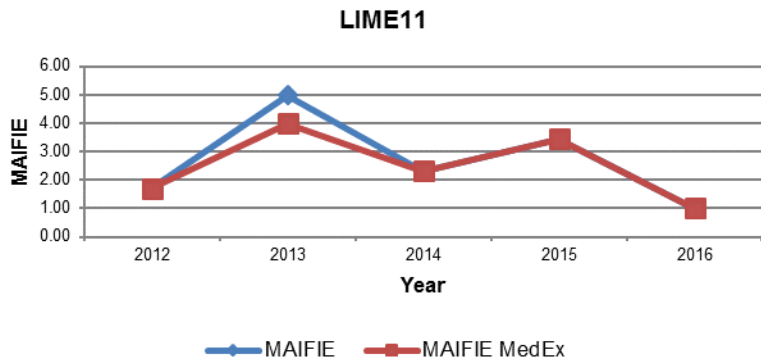


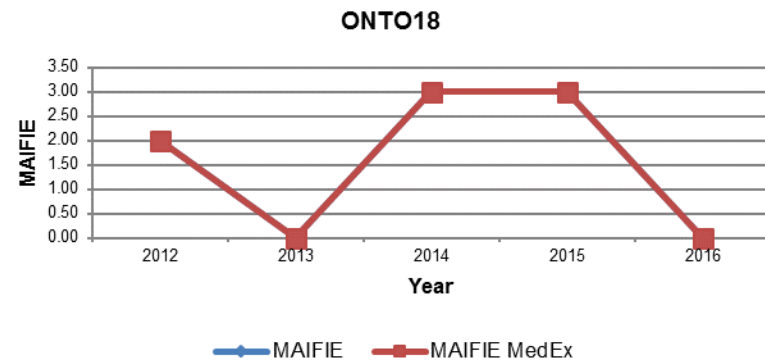
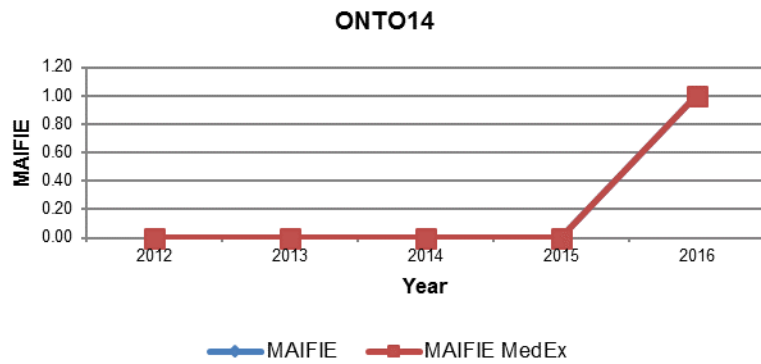
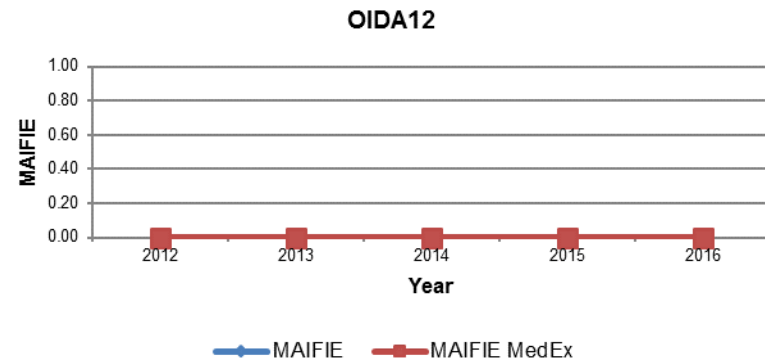
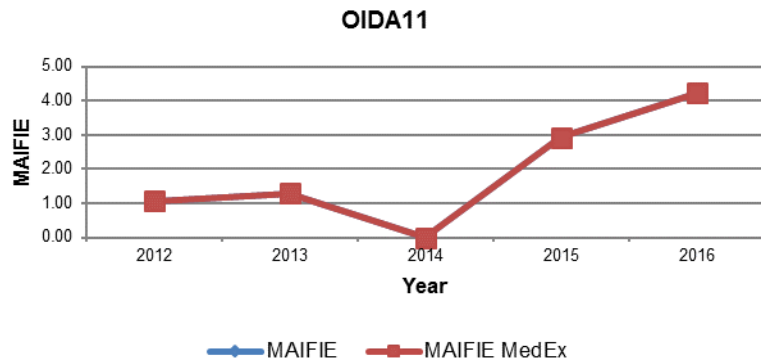
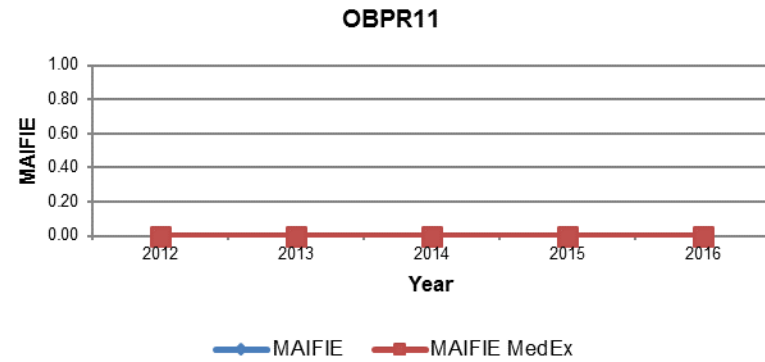
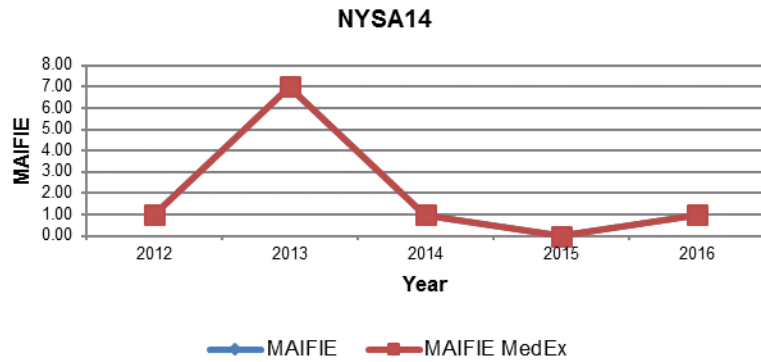
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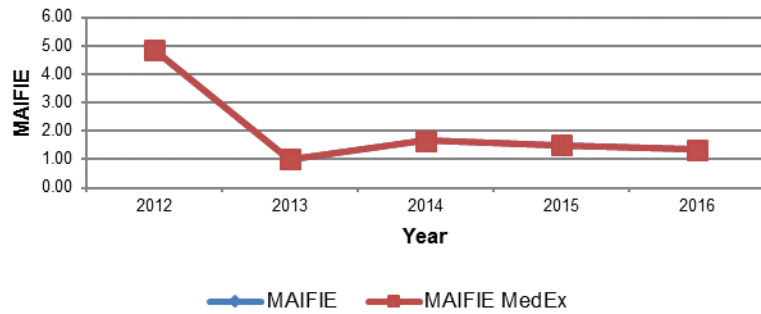
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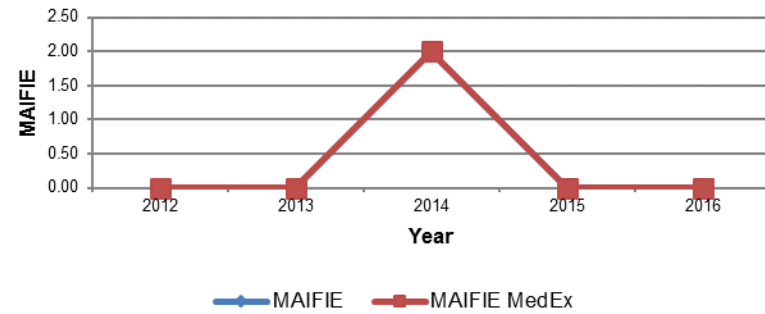




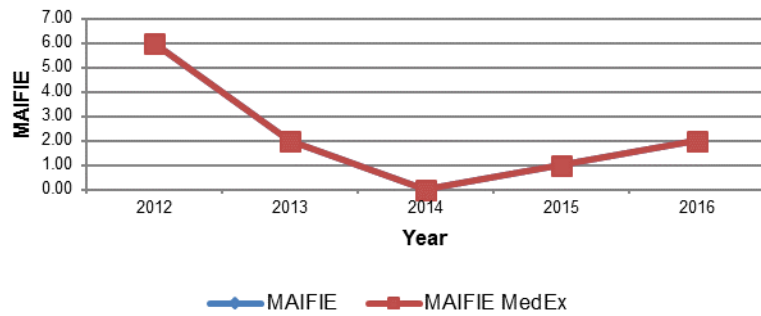
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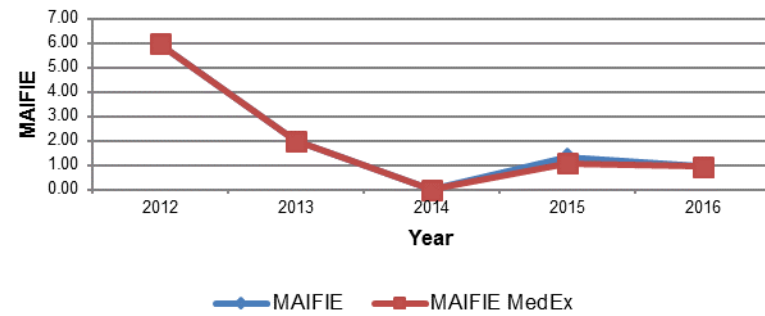
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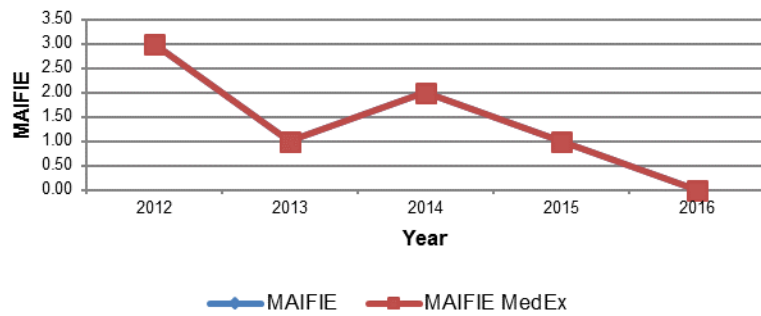
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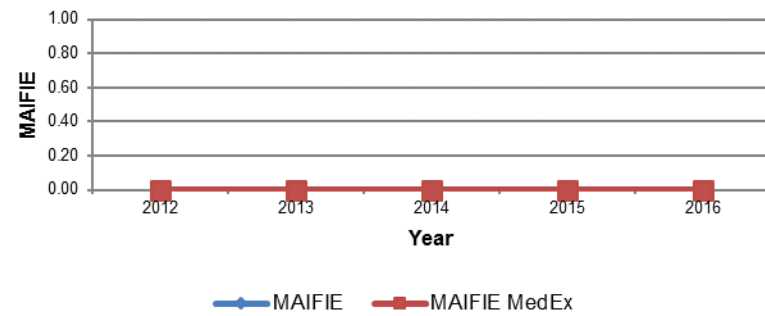
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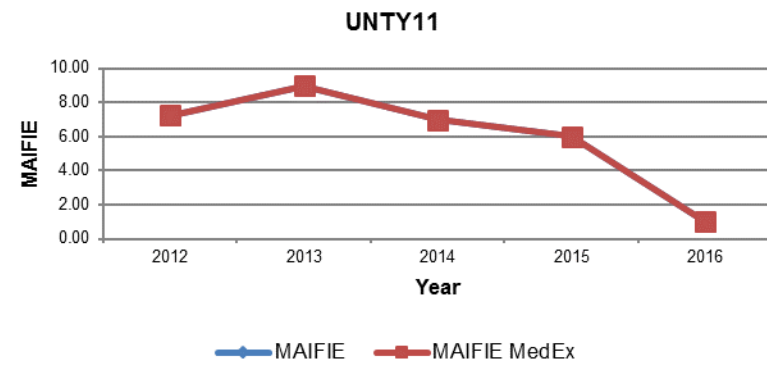
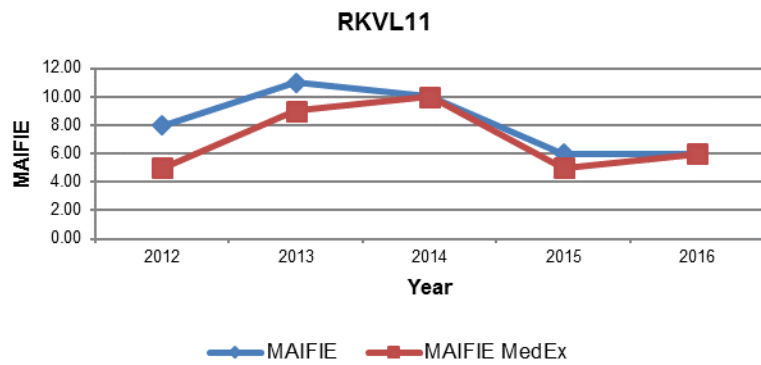
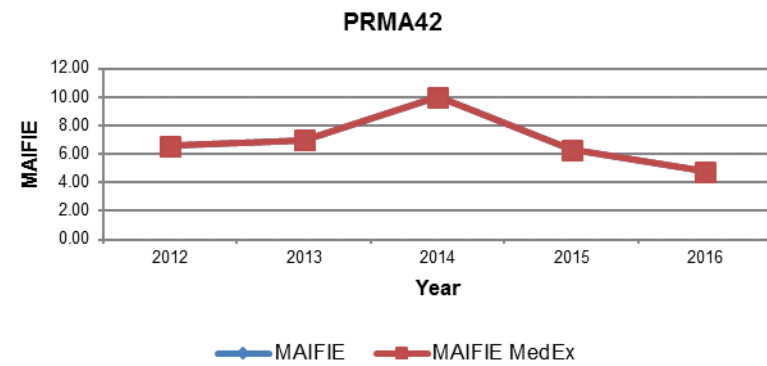
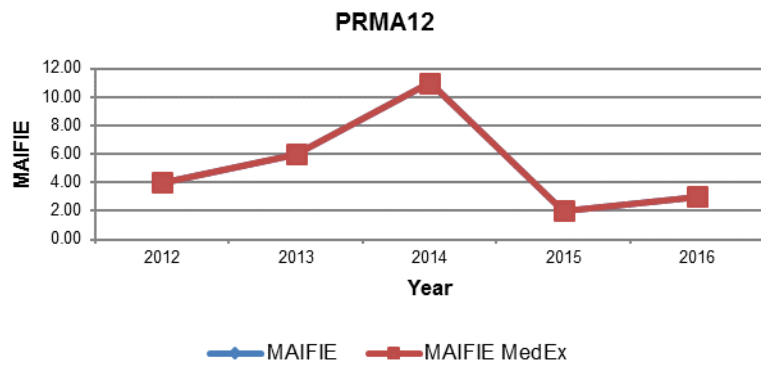
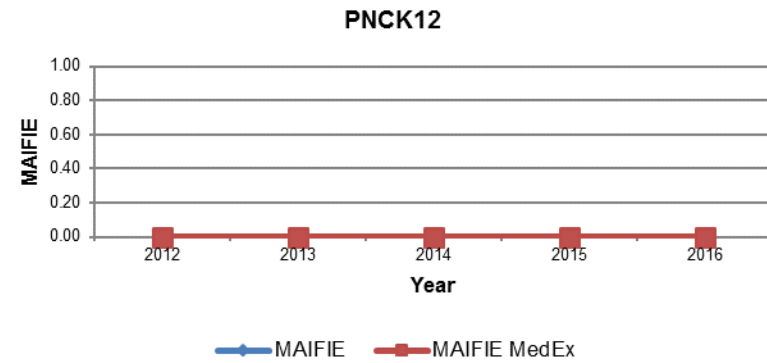
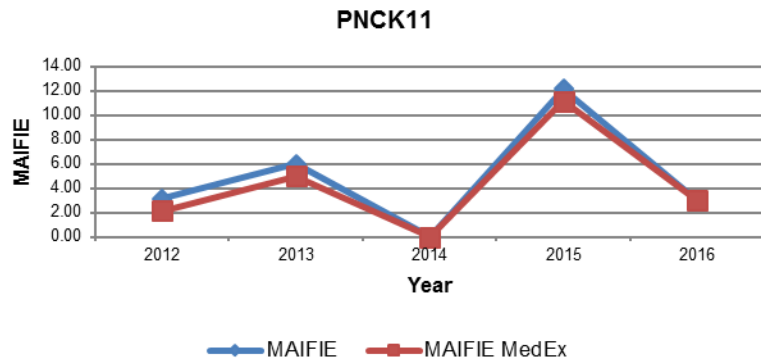


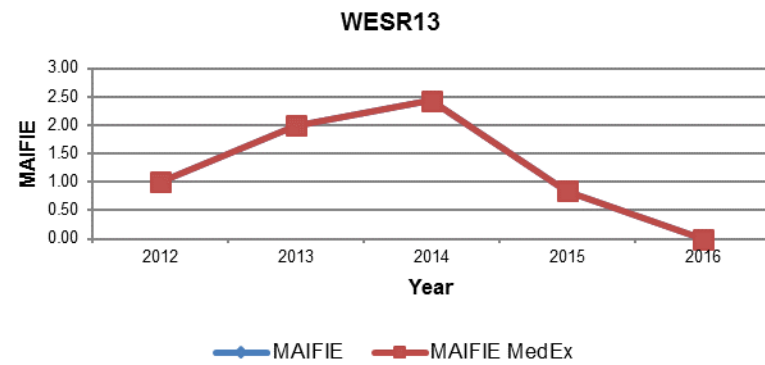
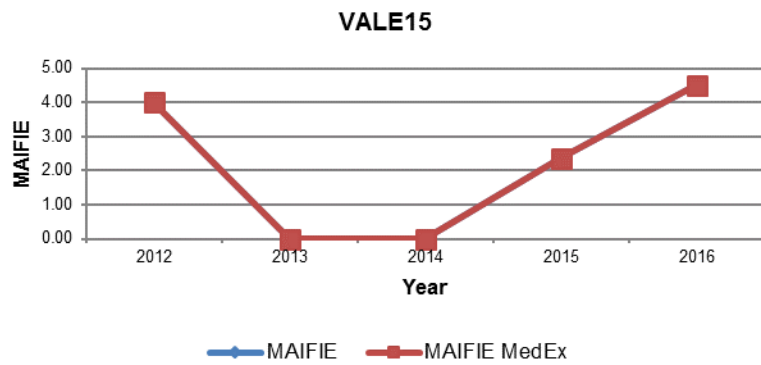
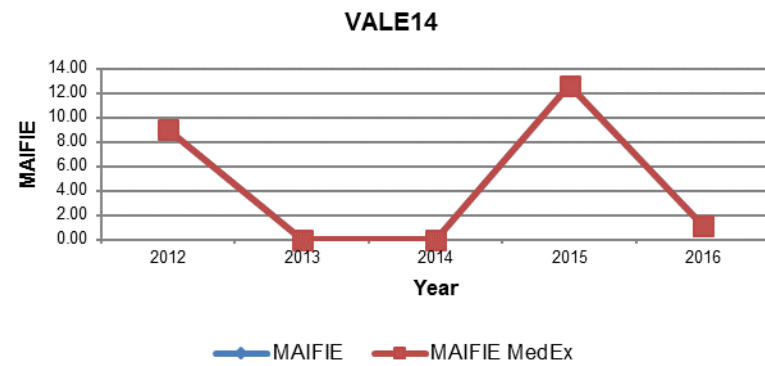
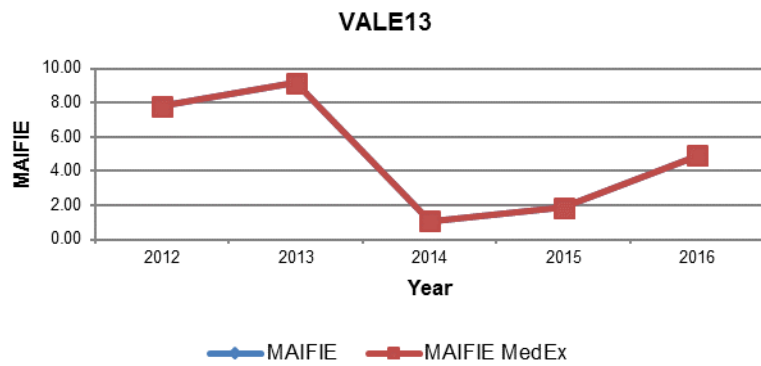
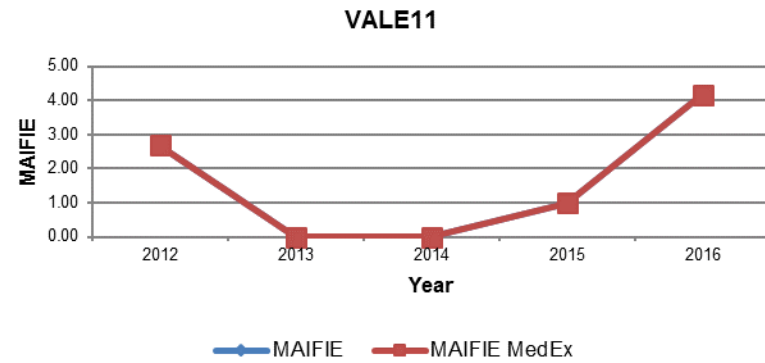
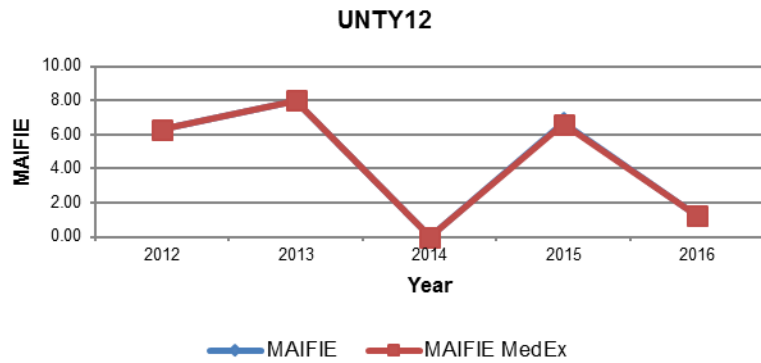
ONTO25



OYDM11







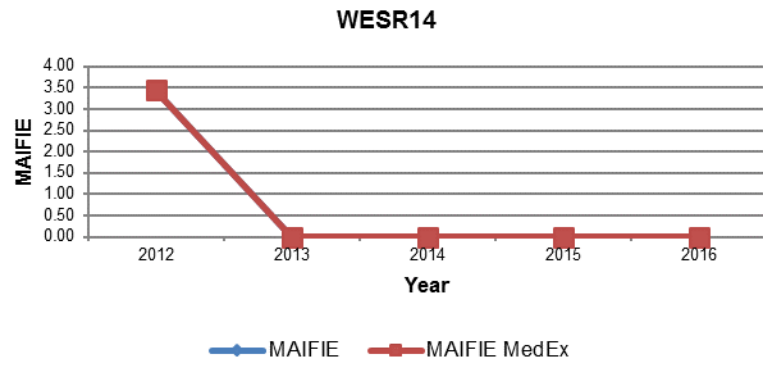


Figure 8 Five Years of Circuit MAIFIE

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2016 Descending Indices by Circuit

Circuit	SAIDI	SAIDI MED Excluded	Circuit	SAIFI	SAIFI MED Excluded	Circuit	MAIFI _E	MAIFI _E MED Excluded
JNVY11	35.11	35.11	PRMA12	8.00	8.00	DRKE11	10.33	10.33
UNTY11	34.95	34.95	JNVY31	6.09	6.09	JNVY31	9.28	9.28
JNVY31	24.13	24.13	ESTN11	5.33	5.33	JNTA12	9.25	9.25
ESTN11	21.72	21.72	NYSA12	4.42	4.42	JNTA11	9.00	9.00
NYSA12	13.97	13.97	JNTA12	3.96	3.96	DWSY11	8.27	8.27
PRMA12	13.68	13.68	HRPR12	3.34	3.34	HFWDY12	7.25	7.25
JNTA12	12.95	12.95	JNTA11	3.33	3.33	RKVL11	6.00	6.00
PNCK11	12.71	12.71	JNVY11	3.25	3.25	NYSA12	5.42	5.42
HRPR12	12.11	12.11	HOPE11	3.19	3.19	CARO12	5.19	5.19
DWSY11	10.16	10.16	HMDL12	3.13	3.13	HRPR12	4.96	4.96
RKVL11	9.57	9.57	DWSY11	3.10	3.10	VALE13	4.90	4.90
JNTA11	8.95	8.95	PNCK11	2.91	2.91	PRMA42	4.76	4.76
HMDL12	7.82	7.82	VALE15	2.84	2.84	HMDL12	4.72	4.72
JNVY12	7.75	7.75	RKVL11	2.52	2.52	VALE15	4.51	4.51
PNCK12	6.73	6.73	NYSA13	2.36	2.36	OIDA11	4.23	4.23
NYSA13	6.68	6.68	ADRN11	2.21	2.21	VALE11	4.17	4.17
HRPR11	6.18	6.18	JNVY12	2.00	2.00	CARO11	4.01	4.01
VALE15	4.94	4.94	PRMA42	1.66	1.66	JNVY12	4.00	4.00
HOPE11	4.93	4.93	HRPR11	1.53	1.53	JNVY11	3.66	3.66
HOLY11	3.85	3.85	NYSA14	1.47	1.47	CWVY12	3.06	3.06
LIME11	3.84	3.84	NYSA11	1.36	1.36	JMSN12	3.00	3.00
NYSA14	3.65	3.65	ADRN12	1.29	1.29	PNCK11	3.00	3.00
PRMA42	3.59	3.59	HOLY11	1.27	1.27	PRMA12	3.00	3.00
UNTY12	3.44	3.44	ONTO20	1.22	1.22	HFWDY11	2.64	2.64
ADRN11	3.22	3.22	HOLY12	1.18	1.18	HRPR11	2.09	2.09
HFWDY12	2.42	2.42	UNTY11	1.17	1.17	ADRN12	2.00	2.00
HFWDY11	2.14	2.14	HFWDY12	1.17	1.17	CARO13	2.00	2.00
CARO11	1.83	1.83	HOLY13	1.09	1.09	ONTO23	2.00	2.00
HOLY13	1.68	1.68	HFWDY11	1.08	1.08	ADRN11	1.91	1.91
HGTN11	1.66	1.66	HGTN11	1.00	1.00	ONTO19	1.36	1.36
HOLY12	1.58	1.58	OIDA12	1.00	1.00	UNTY12	1.22	1.22
JMSN12	1.35	1.35	ONTO14	1.00	1.00	VALE14	1.07	1.07
CWVY12	1.26	1.26	PNCK12	1.00	1.00	CWVY11	1.00	1.00
ADRN12	1.12	1.12	UNTY12	0.90	0.90	HGTN11	1.00	1.00
ONTO20	1.05	1.05	CARO11	0.79	0.79	HGTN12	1.00	1.00
CWVY11	0.95	0.95	LIME11	0.77	0.77	HOPE11	1.00	1.00
OIDA11	0.94	0.94	MRBT41	0.50	0.50	LIME11	1.00	1.00
NYSA11	0.89	0.89	ONTO24	0.44	0.44	NYSA11	1.00	1.00

Circuit	SAIDI		Circuit	SAIFI		Circuit	MAIFI _E	
	SAIDI	MED Excluded		SAIFI	MED Excluded		MAIFI _E	MED Excluded
WESR14	0.85	0.85	WESR14	0.43	0.43	NYSA14	1.00	1.00
JMSN11	0.82	0.82	CWVY11	0.42	0.42	ONTO14	1.00	1.00
OIDA12	0.70	0.70	JMSN11	0.36	0.36	UNTY11	1.00	1.00
MRBT41	0.67	0.67	JMSN12	0.33	0.33	ONTO24	0.94	0.94
DRKE11	0.61	0.61	OIDA11	0.24	0.24	HOLY13	0.42	0.42
ONTO23	0.52	0.52	VALE13	0.23	0.23	DUKE11	0.00	0.00
VALE13	0.52	0.52	MRBT42	0.22	0.22	ESTN11	0.00	0.00
ONTO24	0.46	0.46	CWVY12	0.20	0.20	HCSU11	0.00	0.00
ONTO14	0.42	0.42	DRKE11	0.20	0.20	HOLY11	0.00	0.00
ONTO19	0.40	0.40	WESR13	0.19	0.19	HOLY12	0.00	0.00
MRBT42	0.29	0.29	ONTO25	0.19	0.19	JMSN11	0.00	0.00
WESR13	0.29	0.29	HGTN12	0.19	0.19	MRBT41	0.00	0.00
CARO12	0.23	0.23	CARO12	0.16	0.16	MRBT42	0.00	0.00
ONTO18	0.21	0.21	ONTO19	0.14	0.14	NYSA13	0.00	0.00
HGTN12	0.21	0.21	ONTO23	0.13	0.13	OBPR11	0.00	0.00
VALE11	0.17	0.17	ONTO18	0.12	0.12	OBPR12	0.00	0.00
ONTO25	0.13	0.13	VALE11	0.10	0.10	ONTO18	0.00	0.00
VALE14	0.11	0.11	VALE14	0.05	0.05	ONTO20	0.00	0.00
CARO13	0.00	0.00	CARO13	0.00	0.00	ONTO25	0.00	0.00
DUKE11	0.00	0.00	DUKE11	0.00	0.00	OYDM11	0.00	0.00
HCSU11	0.00	0.00	HCSU11	0.00	0.00	PNCK12	0.00	0.00
OBPR11	0.00	0.00	OBPR11	0.00	0.00	WESR13	0.00	0.00
OYDM11	0.00	0.00	OYDM11	0.00	0.00	WESR14	0.00	0.00

Table 9 2016 Descending Indices by Circuit

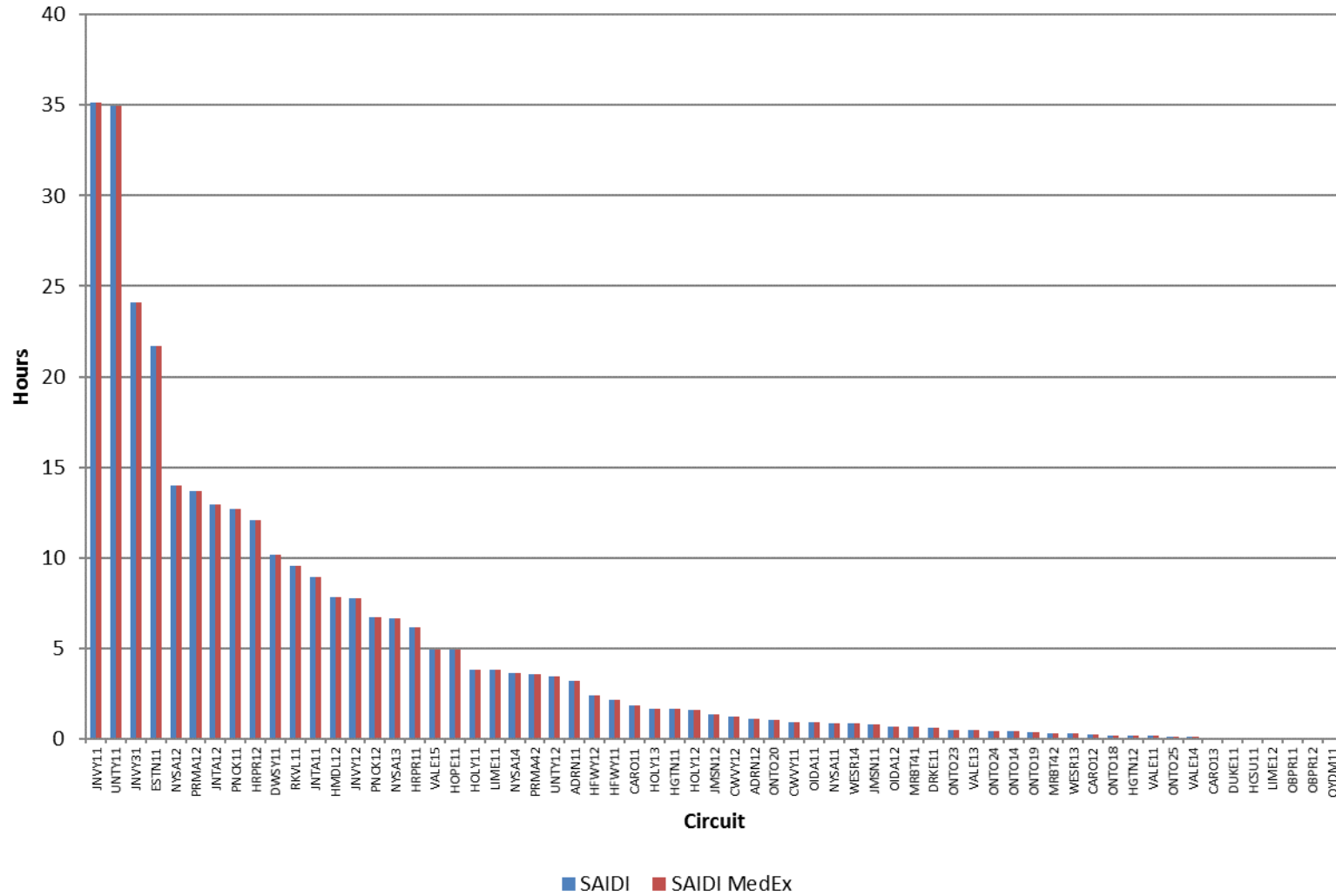


Figure 9 2016 Descending SAIDI by Circuit

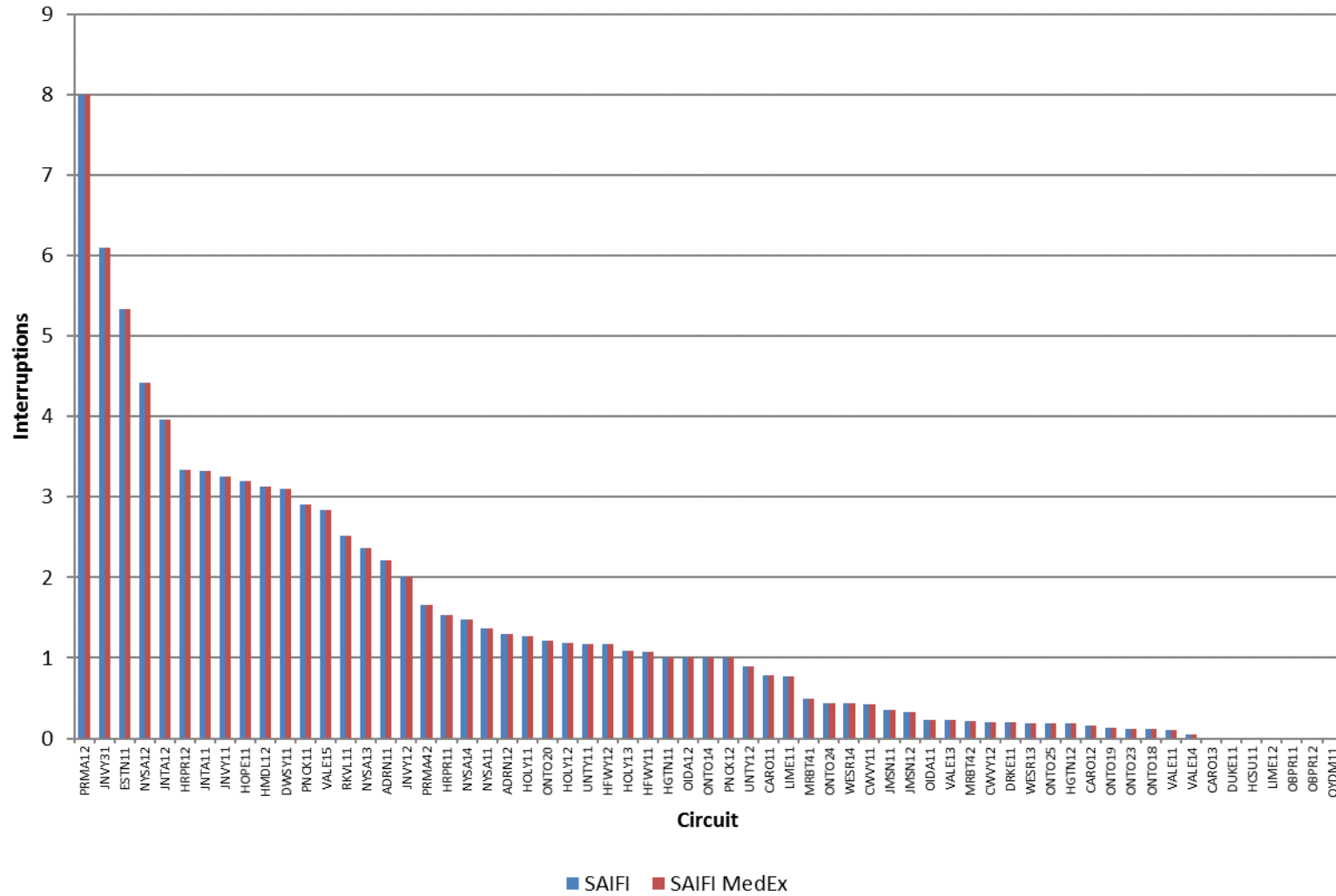


Figure 10 2016 Descending SAIFI by Circuit

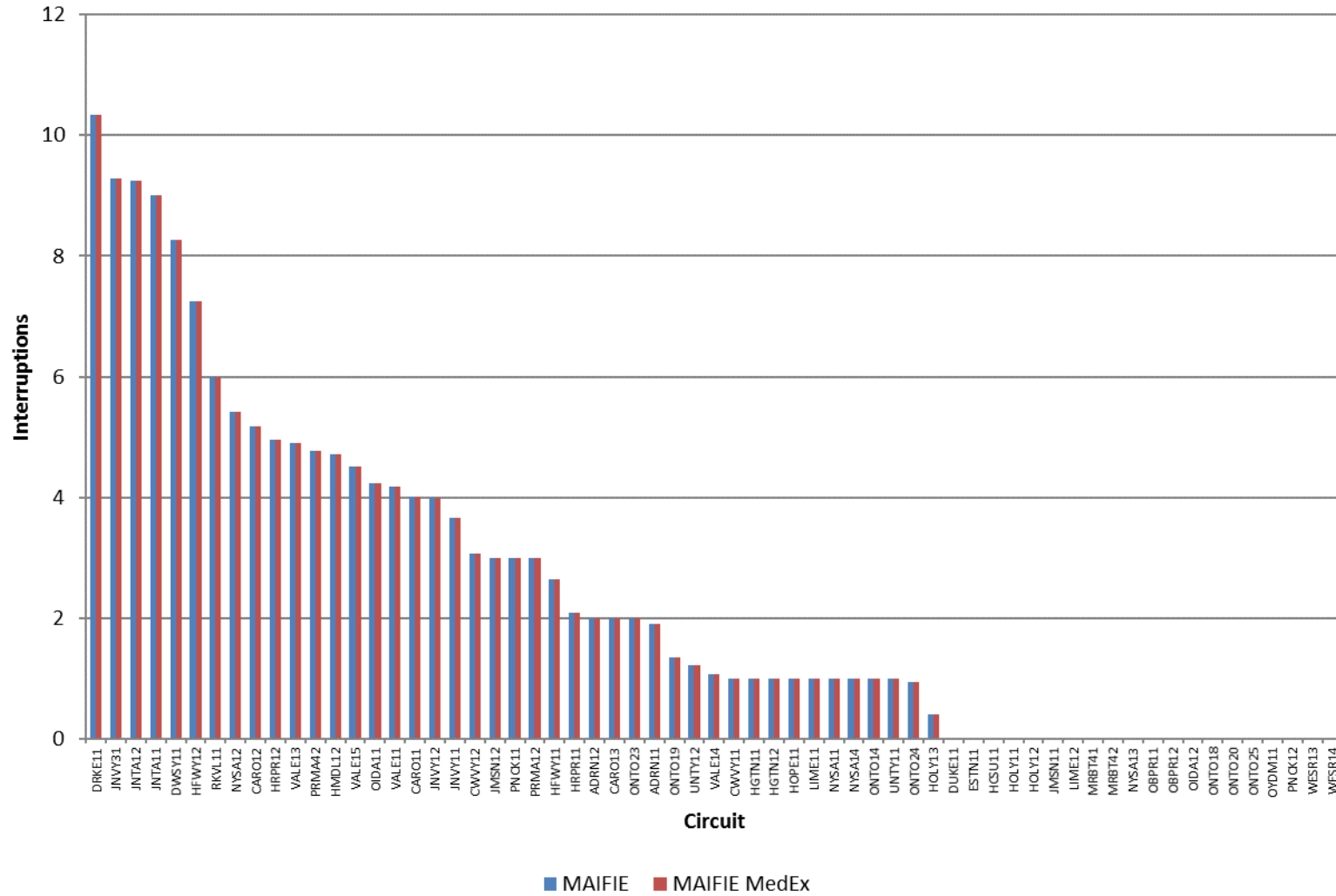


Figure 11 2016 Descending MAIFI_E by Circuit

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APPENDIX

Circuit Reference Information

Circuit	Substation	Operating Area	Voltage (kV)	Customers*
ADRN11	Adrian	Western	12.5	380
ADRN12	Adrian	Western	12.5	592
CARO11	Cairo	Western	12.5	1,214
CARO12	Cairo	Western	12.5	96
CARO13	Cairo	Western	12.5	736
CWVY11	Cow Valley	Western	12.5	45
CWVY12	Cow Valley	Western	12.5	113
DRKE11	Durkee	Western	12.5	165
DUKE11	Duke	Western	12.5	24
DWSY11	Drewsey	Western	12.5	181
ESTN11	Easton	Western	12.5	3
HCSU11	Hells Canyon	Western	12.5	2
HFVY11	Halfway	Western	12.5	755
HFVY12	Halfway	Western	12.5	540
HGTN11	Huntington	Western	12.5	74
HGTN12	Huntington	Western	12.5	301
HMDL12	Homedale	Canyon	12.5	147
HOLY11	Holly	Western	12.5	178
HOLY12	Holly	Western	12.5	77
HOLY13	Holly	Western	12.5	164
HOPE11	Hope	Western	12.5	150
HRPR11	Harper	Western	12.5	104
HRPR12	Harper	Western	12.5	178
JMSN11	Jamieson	Western	12.5	389
JMSN12	Jamieson	Western	12.5	242
JNTA11	Juntura	Western	12.5	61
JNTA12	Juntura	Western	12.5	52
JNVY11	Jordan Valley	Canyon	12.5	87
JNVY12	Jordan Valley	Canyon	12.5	81
JNVY31	Jordan Valley	Canyon	25.0	333
LIME11	Lime	Western	12.5	114
MRBT41	Malheur Butte	Western	34.5	30
MRBT42	Malheur Butte	Western	34.5	9
NYSA11	Nyssa	Western	12.5	842
NYSA12	Nyssa	Western	12.5	303
NYSA13	Nyssa	Western	12.5	706

Circuit	Substation	Operating Area	Voltage (kV)	Customers*
NYSA14	Nyssa	Western	12.5	250
OBPR11	Oxbow	Western	12.5	1
OIDA11	Ore-Ida	Western	12.5	633
OIDA12	Ore-Ida	Western	12.5	1
ONTO14	Ontario	Western	12.5	35
ONTO18	Ontario	Western	12.5	853
ONTO19	Ontario	Western	12.5	1,796
ONTO20	Ontario	Western	12.5	1,196
ONTO23	Ontario	Western	12.5	48
ONTO24	Ontario	Western	12.5	672
ONTO25	Ontario	Western	12.5	499
OYDM11	Owyhee Dam	Western	12.5	15
PNCK11	Pine Creek	Western	12.5	101
PNCK12	Pine Creek	Western	12.5	2
PRMA12	Parma	Western	12.5	2
PRMA42	Parma	Western	34.5	183
RKVL11	Rockville	Canyon	12.5	29
UNTY11	Unity	Western	12.5	145
UNTY12	Unity	Western	12.5	227
VALE11	Vale	Western	12.5	1,034
VALE13	Vale	Western	12.5	558
VALE14	Vale	Western	12.5	297
VALE15	Vale	Western	12.5	464
WESR13	Weiser	Western	12.5	193
WESR14	Weiser	Western	12.5	30

Table 10 Circuit Reference Information

*Some circuits have customers in Idaho and Oregon. The counts in this column are for Oregon customers only as of 12/31/2016.

Five Years of System Pole and Trench Miles

Year	Overhead (OH) Pole Miles	Underground (UG) Trench Miles	Distribution All Miles	Transmission Line (Structure/Pole) Miles*	Percent OH / UG
2016	2,131.38	97.93	2,229.31	760.34	96% / 4%
2015	2,118.88	95.44	2,214.32	759.81	96% / 4%
2014	2,116.10	95.45	2,211.55	692.49	96% / 4%
2013	2,113.58	93.31	2,206.88	688.66	96% / 4%
2012	2,112.38	92.65	2,205.03	686.66	96% / 4%

Table 11 Five Years of System Pole and Trench Miles

*Transmission line miles include some lines that do not directly serve customer load.

2016 Major Event Day System Summary

Date	Cause	Customers	CMI	CI	SAIDI (Minutes)	SAIFI	CAIDI (Minutes)
No MEDs							

Table 12 2016 MED System Summary

2016 Major Event Day Feeder Summary

Date	Feeder	Customers	CMI	CI	SAIDI (Minutes)	SAIFI	CAIDI (Minutes)
No MEDs							

Table 13 2016 MED Feeder Summary

Five Years of Major Event Days

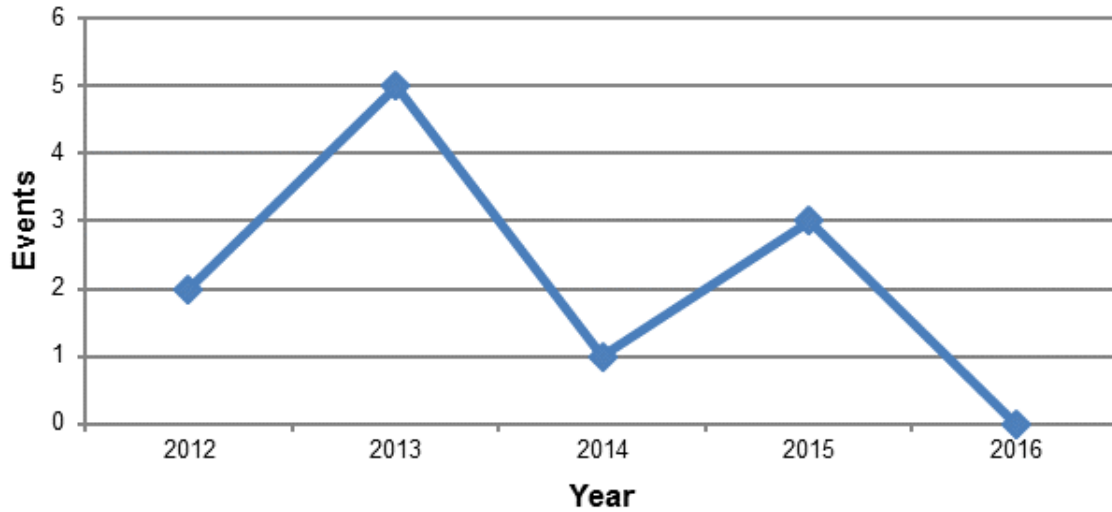


Figure 12 Five Years of MEDs

Cause Category Translation

Idaho Power Cause	OAR 860-023-0151 (2)(b) Cause
Loss of Supply – Transmission*	Loss of Supply – Transmission
Loss of Supply – Station*	Loss of Supply – Substation
Corrosion/Rot	Distribution – Equipment
Electrical Failure	Distribution – Equipment
Loose Hardware	Distribution – Equipment
Mechanical Failure	Distribution – Equipment
Improper Installation	Distribution – Equipment
Contamination	Distribution – Equipment
Lightning	Distribution – Lightning
Other IPC Circuit	Distribution – Other
Other (Define in Comments)	Distribution – Other
Safety Precaution	Distribution – Other
Utility Operating Error	Distribution – Other
Planned Maintenance	Distribution – Planned
Structures (Signs, Buildings)	Distribution – Public
Construction/Dig-in	Distribution – Public
Foreign Object (Pipe, Kite, Tree Trim)	Distribution – Public
Vandalism	Distribution – Public
Vehicle Collision	Distribution – Public
Momentary (Tripping)	Distribution – Unknown
Unknown	Distribution – Unknown
Tree/Vegetation	Distribution – Vegetation
Loading/Unloading (Snow, Ice)	Distribution – Weather (Non-Lightning)
Unstable Earth	Distribution – Weather (Non-Lightning)
Load Shed/Transfer	Distribution – Weather (Non-Lightning)
Wildland/Building Fire	Distribution – Weather (Non-Lightning)
Overload/Cold Load	Distribution – Weather (Non-Lightning)
Bird – Non Raptor	Distribution – Wildlife
Bird – Raptor	Distribution – Wildlife
Large Animal (Livestock)	Distribution – Wildlife
Small Animal	Distribution – Wildlife

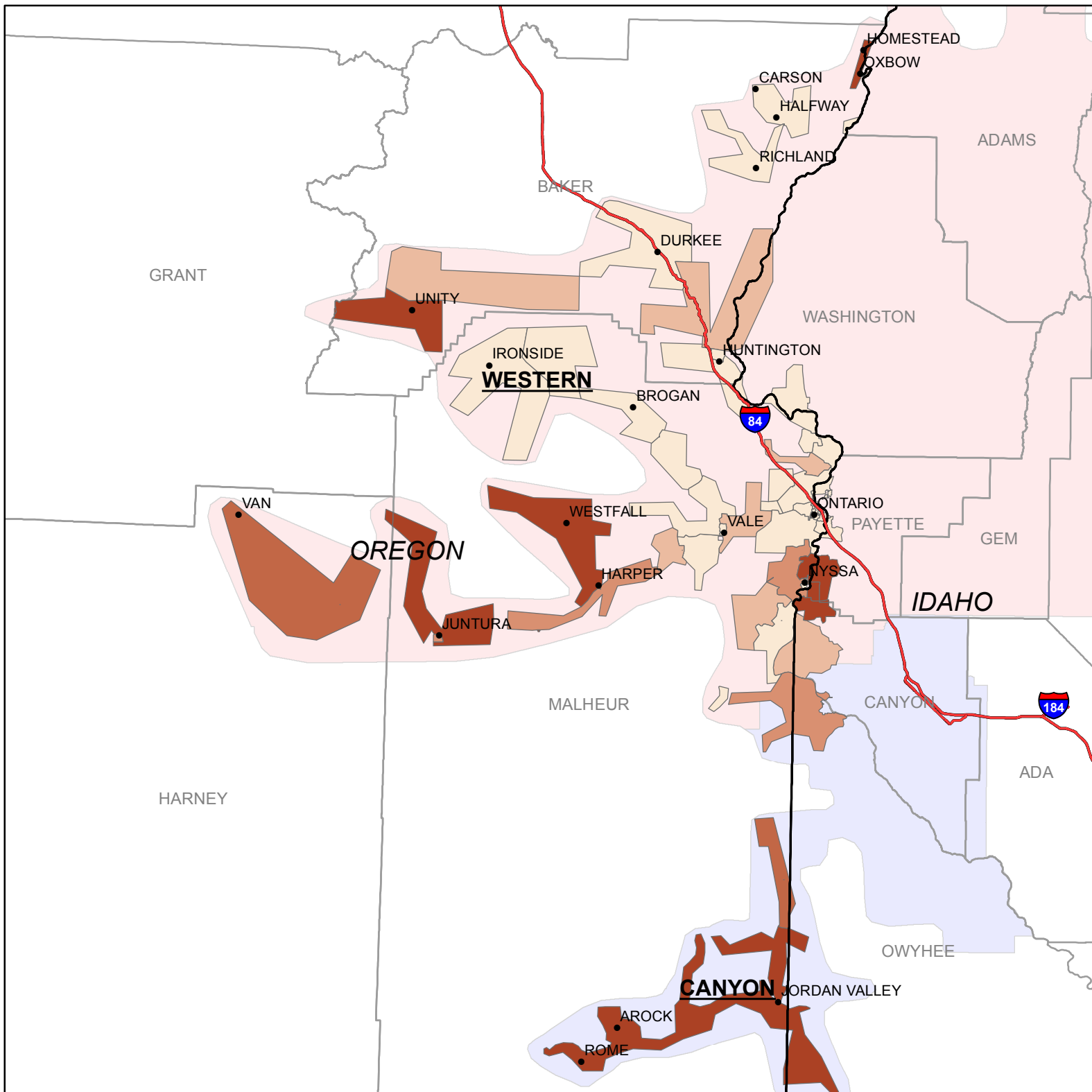
Table 14 Cause Category Translation

*These are also identified from the Idaho Power SYSTEM field. This field has values for “Transmission”, “Substation”, “Distribution Primary OH”, “Distribution Primary UG”, “Secondary/Service OH” and “Secondary/Service UG”. So, Loss of Supply – Transmission in this report includes events where the CAUSE field was “Loss of Supply – Transmission” **or** the SYSTEM field was “Transmission”, and Loss of Supply – Substation includes events where the CAUSE field was “Loss of Supply – Station” **or** the SYSTEM field was “Substation”.

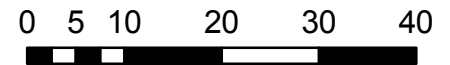
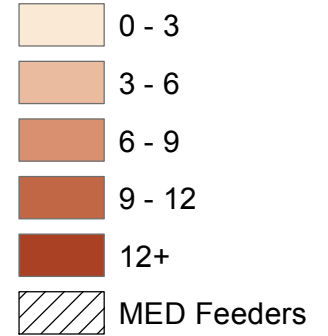
MAPS

This is a placeholder for the maps.

2016 SAIDI With MED Oregon Area



SAIDI

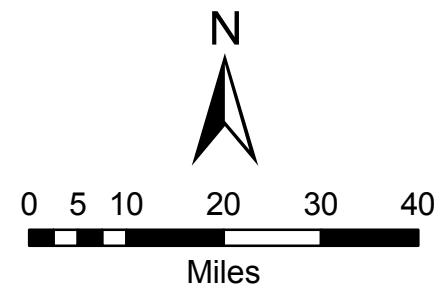
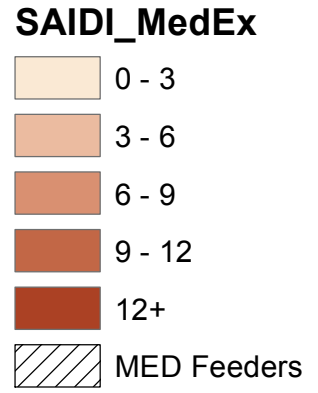
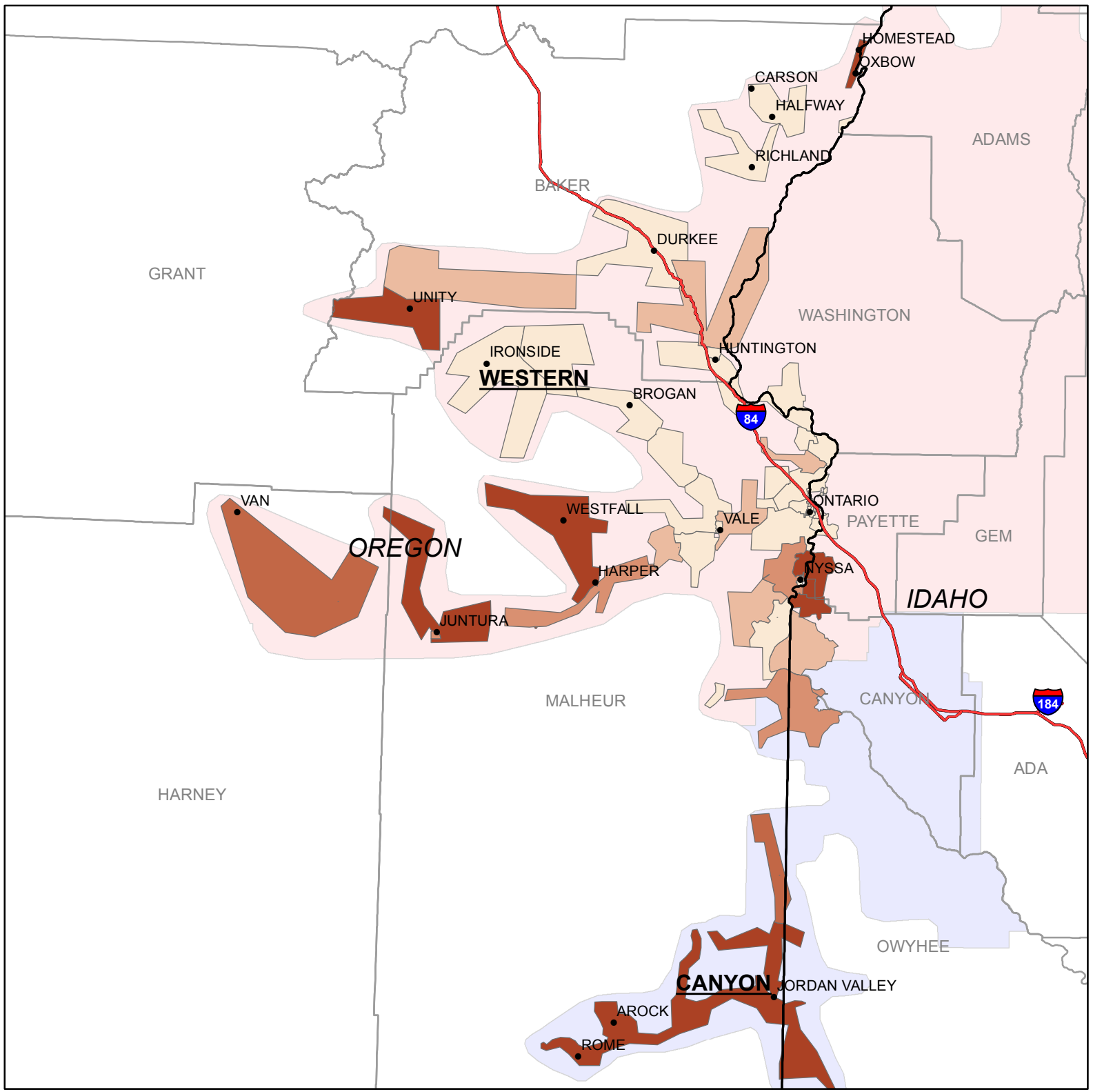


Miles

2/7/2017



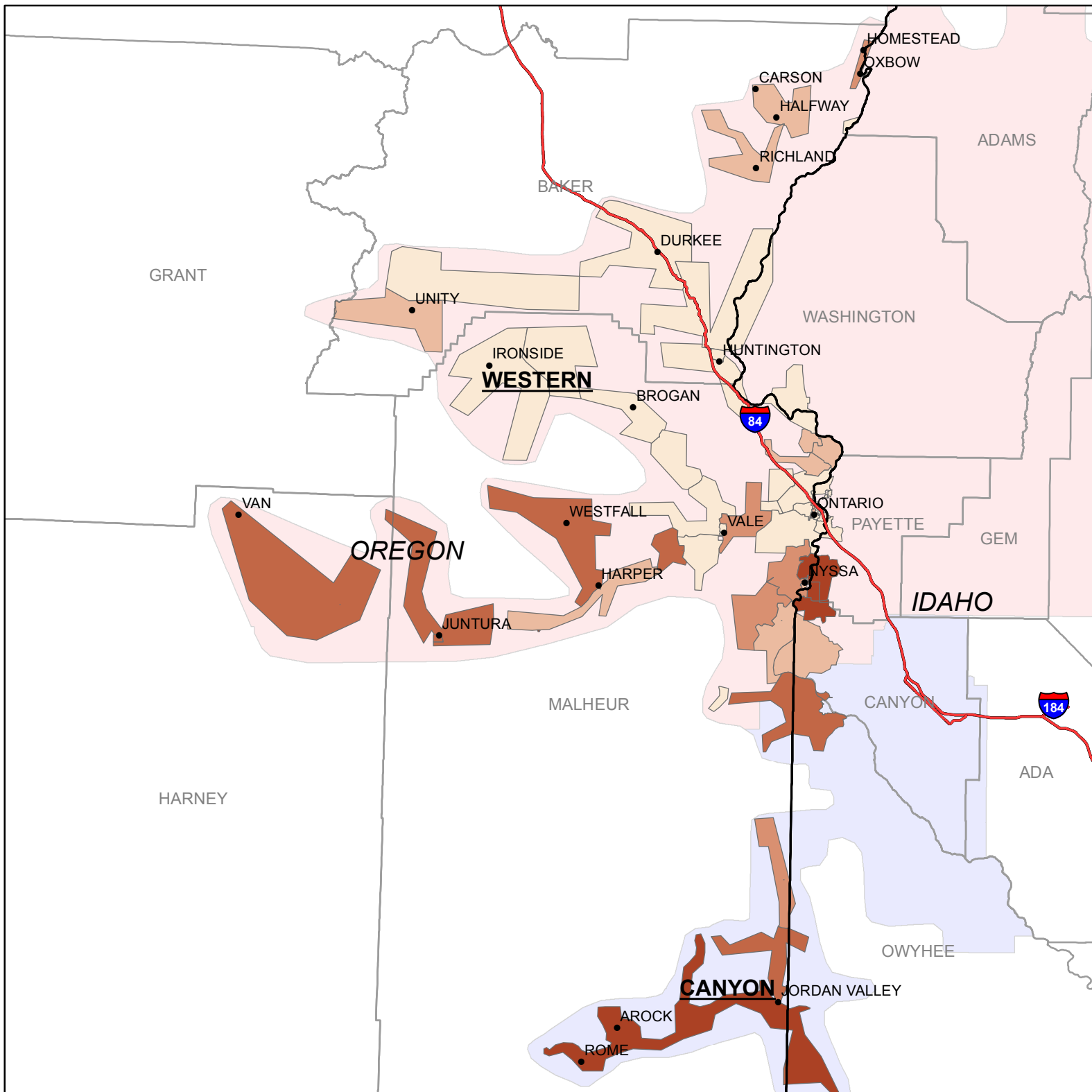
2016 SAIDI Without MED Oregon Area



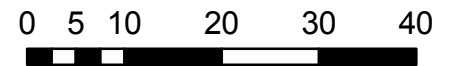
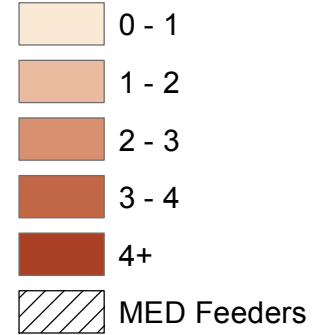
2/7/2017



2016 SAIFI With MED Oregon Area



SAIFI

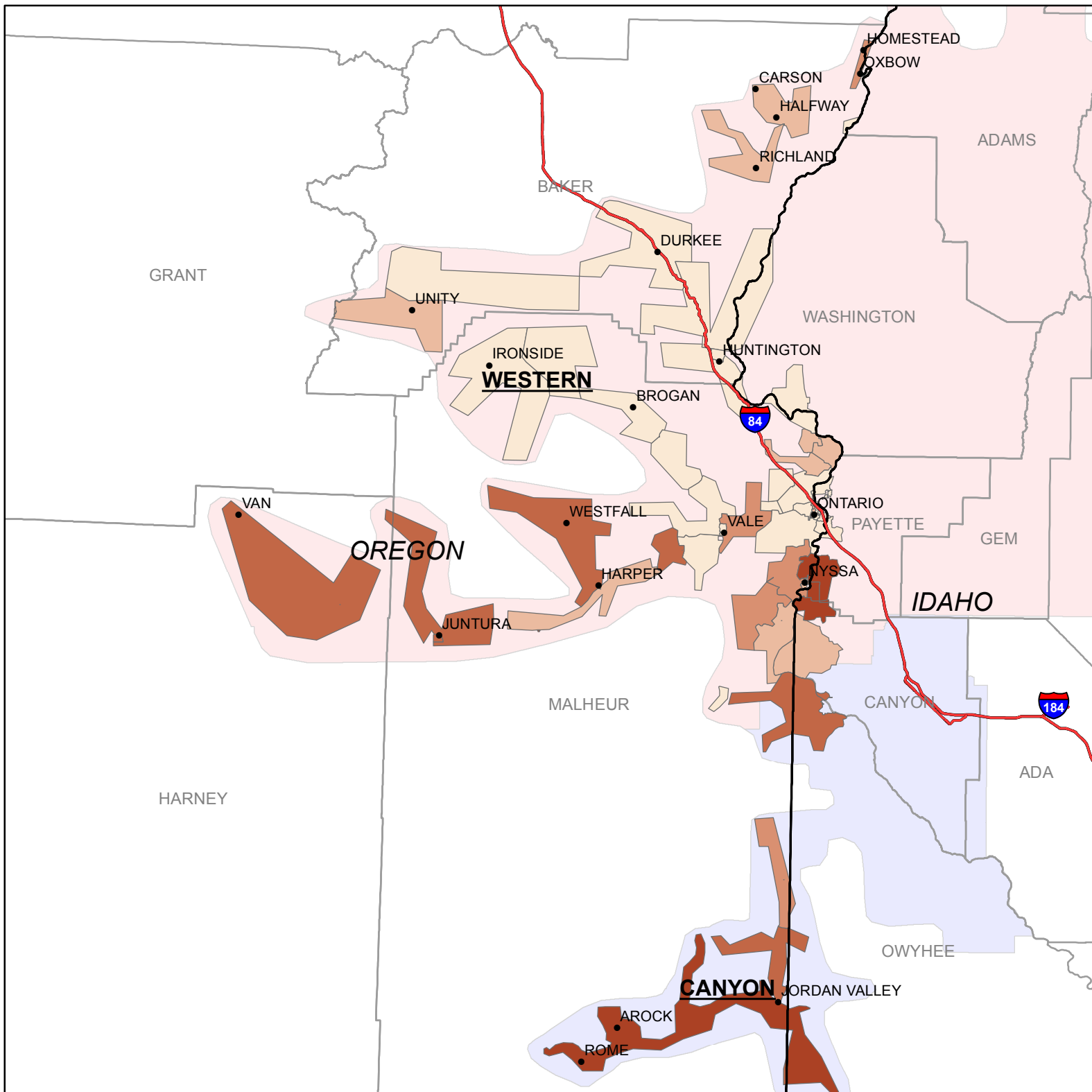


Miles

2/7/2017

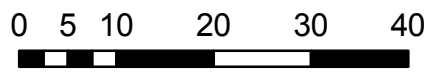


2016 SAIFI Without MED Oregon Area



SAIFI_MedEx

- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4+
- MED Feeders

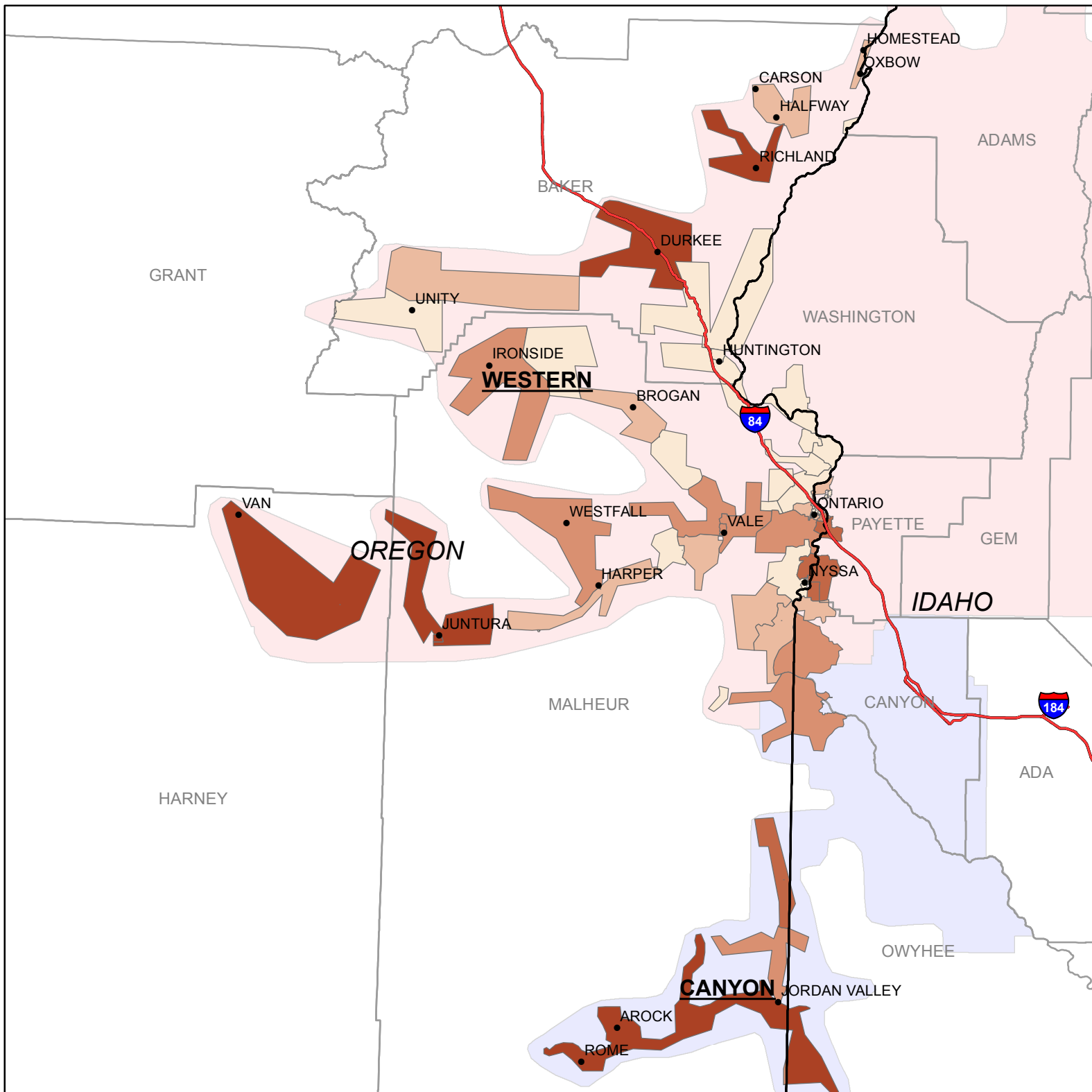


Miles

2/7/2017

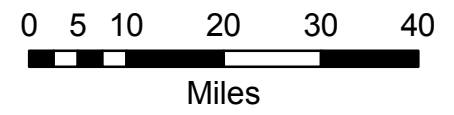


2016 MAIFle With MED Oregon Area



MAIFle

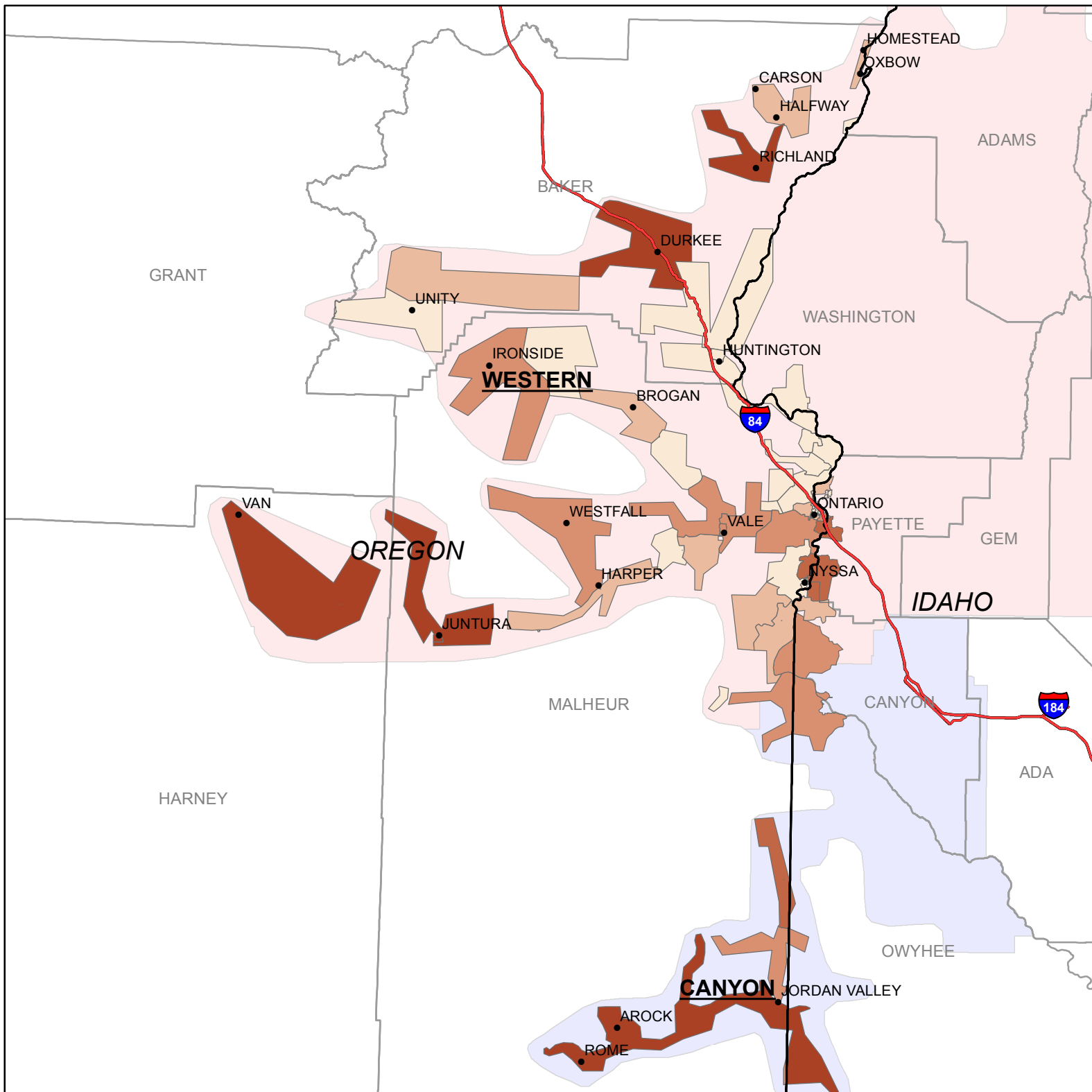
- 0 - 1
- 1 - 3
- 3 - 5
- 5 - 7
- 7+
- MED Feeders



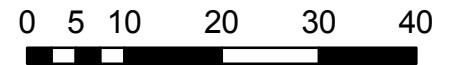
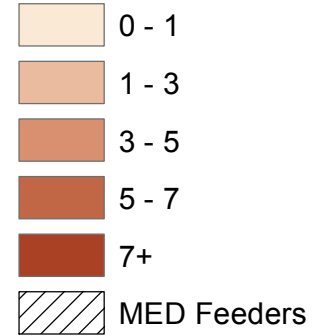
2/7/2017



2016 MAIFle Without MED Oregon Area



MAIFle_MedEx



Miles

2/7/2017

