

All That's Worth KNOWING: How to assess the VALUE of a Retinal Specialist with and without “Big Data”

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Panelists:

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D. Wilkin Parke MD and John Pollack MD

Relevant Disclosures

WE ALL TAKE CARE OF PATIENTS
EXTENSIVE EHR/REGISTRY PARTICIPATION

Pollack – Vestrum Founder

Registry Data

- Increasing focus on clinical practice oversight
- Shift to “Big Data”
- Panel focus —
 - IRIS AAO Registry
 - Vestrum Registry
- Potential pitfalls/benefits of Registry Data
- Valuation of retinal specialty clinical care

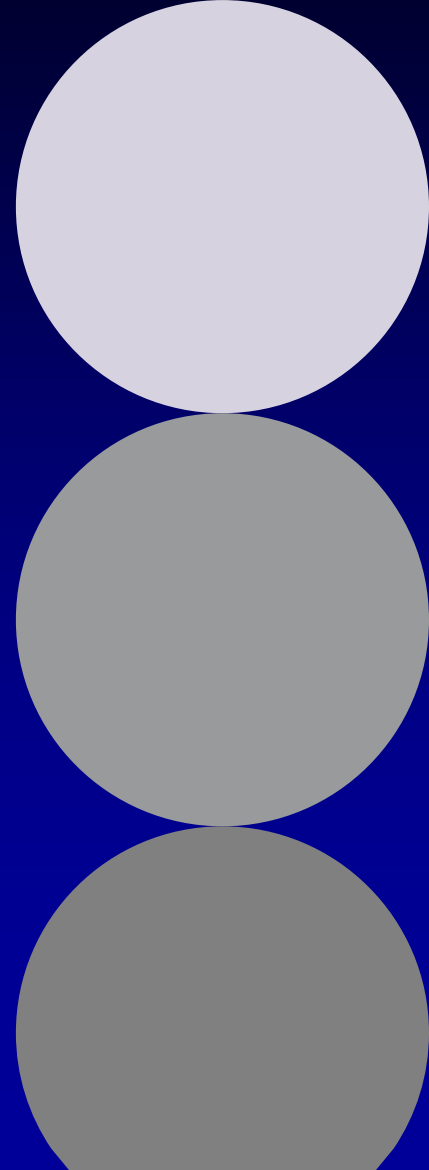


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IRIS Registry Update

AAO 6/2018



Current Stats – July 1, 2018

Contracted

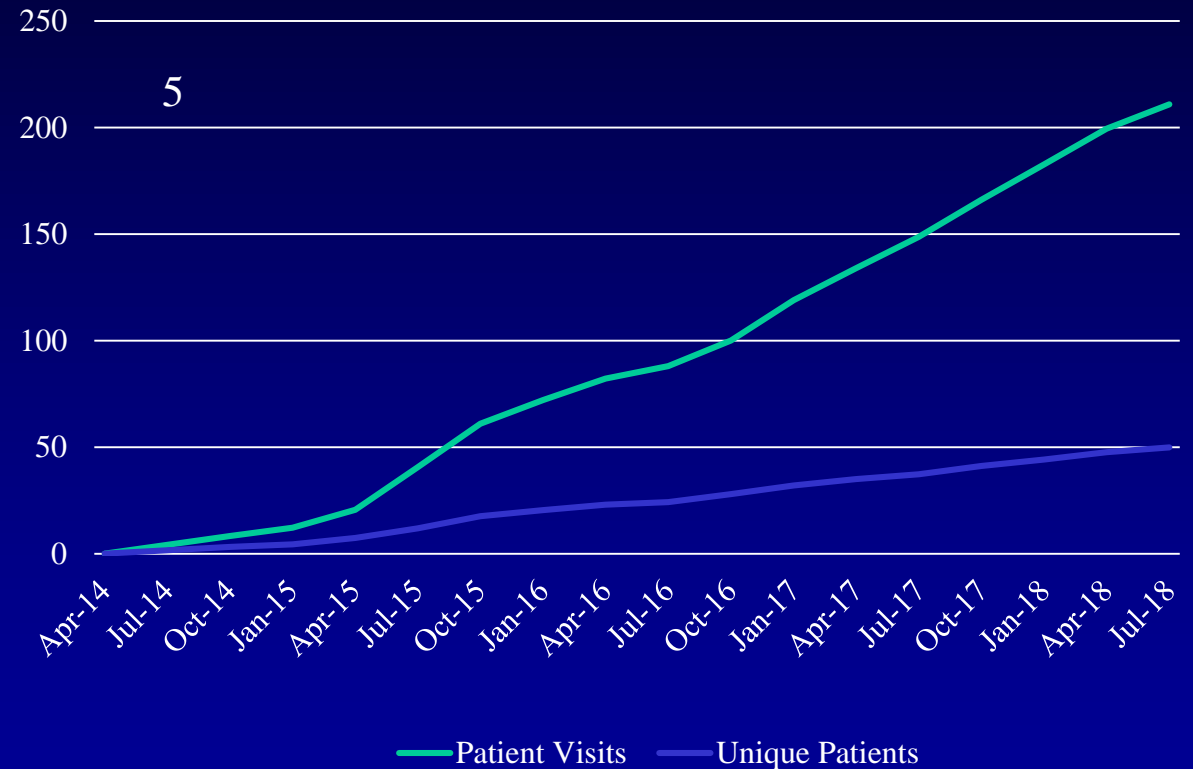
- **18,078** physicians from **5,172** practices

Contracted for EHR Integration

- **15,640** physicians from **3,491** practices

Number of patient visits

- **210** million visits, representing **49** million patients



Penalty Avoidance Using IRIS Registry

Year	Ophthalmologists Submitted by IRIS Registry	Average Medicare Fee Schedule (2014)	PQRS Penalty Avoided	VM Penalty Avoided	MU Penalty Avoided	Total Penalties Avoided for Ophthalmologists
2014	2,523	\$272,600	\$13.7M	\$3.6M	\$10.4M	\$27.7M
2015	5,984	\$272,600	\$32.6M	\$41.1M	\$39.5M	\$113.2M
2016	7,721	\$272,600	\$42.1M	\$53.0M	\$52.5M	\$147.6M
2017	10,000(est)	\$272,600				\$186.0M
2018	12,000(est)	\$272,600				\$279.0M

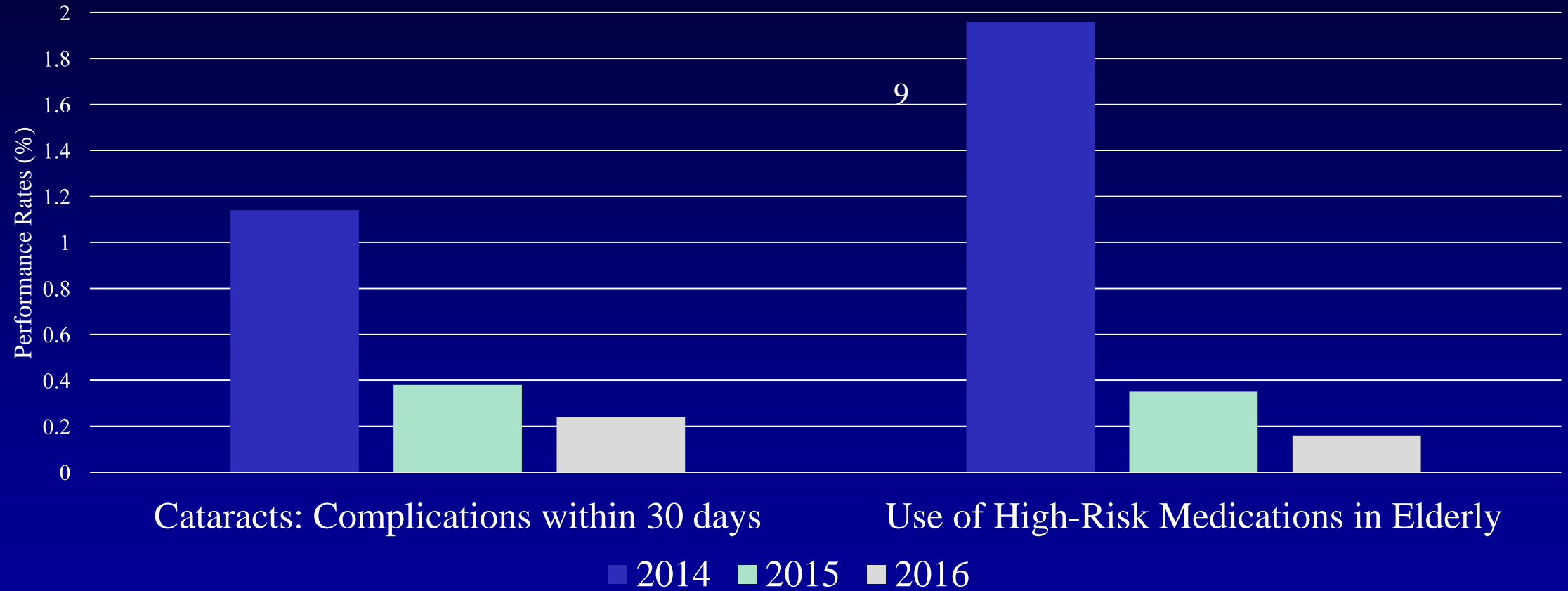
Benefits of the IRIS Registry

- Quality improvement with actionable feedback
- Comparison to a national benchmark
- Contribution to a national database for scientific discovery
- Strengthening profession with data to support policy priorities
- Meets MIPS Reporting Requirements

Quality Improvement with Actionable Feedback

- Demonstrated improvement on quality measures over 3 years' time with physician feedback from the IRIS Registry
- Another example was the complication rates of cataract surgery
- Rich W et al. Performance Rates Measured in the American Academy of Ophthalmology IRIS® Registry (Intelligent Research in Sight). Ophthalmology 2018

Trends over Time



Comparison to a National Benchmark

Unique value to the physician

- Provides views of performance
- Allows comparison to benchmarks
 - Registry benchmark (all participants)
 - CMS benchmark (all who reported on measure)

ID	MEASURE	PERFORMANCE
IRIS 1	Primary Open Angle Glaucoma (POAG): Optic Nerve Evaluation	94.17% (Registry Benchmark: 79.42%)
IRIS 2	Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy	13.72% (Registry Benchmark: 38.91%)
IRIS 3	Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care	0.00% (Registry Benchmark: 27.17%)
IRIS 4	Cataracts: 20/40 or Better Visual Acuity within 90 Days Following Cataract Surgery	79.51% (Registry Benchmark: 86.28%)
IRIS 5	Complications within 30 Days Following Cataract Surgery Requiring Additional Surgical Procedures	0.00% (Registry Benchmark: 0.62%)
IRIS 6	Diabetes: Eye Exam	80.92% (Registry Benchmark: 87.05%)
IRIS 14	Preventive Care and Screening Tobacco Use: Screening and Cessation Intervention	87.96% (Registry Benchmark: 82.20%)
IRIS 15-1	Use of High-Risk Medications in the Elderly	0.00% (Registry Benchmark: 1.71%)
IRIS 15-2	Use of High-Risk Medications in the Elderly	0.00% (Registry Benchmark: 0.28%)
IRIS 16	Falls: Screening for Future Fall Risk	0.00% (Registry Benchmark: 2.38%)
IRIS 17	Documentation of Current Medications in the Medical Record	94.69% (Registry Benchmark: 88.57%)
IRIS 18	Controlling High Blood Pressure	0.00% (Registry Benchmark: 19.41%)
IRIS 19	Closing the referral loop: receipt of specialist report	0.00% (Registry Benchmark: 21.00%)
		100.00%

Today's Big Data Insights

- Characterization of patient population
- Disease prevalence
- Clinical outcomes
- Practice patterns
- Risk factors and confounders





Nonexudative AMD (3,797,382 eyes)

Year	Patients	Eyes
2013	703,715	835,235
2014	858,596	1,022,564
2015	922,255	1,085,869
2016	1,357,061	1,612,355
2017	1,724,639	1,883,769





Exudative AMD (1,151,452 eyes)

Year	Patients	Eyes
2013	272,702	291,097
2014	336,831	362,291
2015	337,855	363,286
2016	518,780	554,120
2017	649,372	675,753





Diabetic Retinopathy (2,663,195 eyes)

Year	Patients	Eyes
2013	470,359	561,501
2014	587,306	709,085
2015	660,692	788,698
2016	978,390	1,202,781
2017	1,158,627	1,281,136





Anti-VEGF Intravitreal Injections (9,963,830)

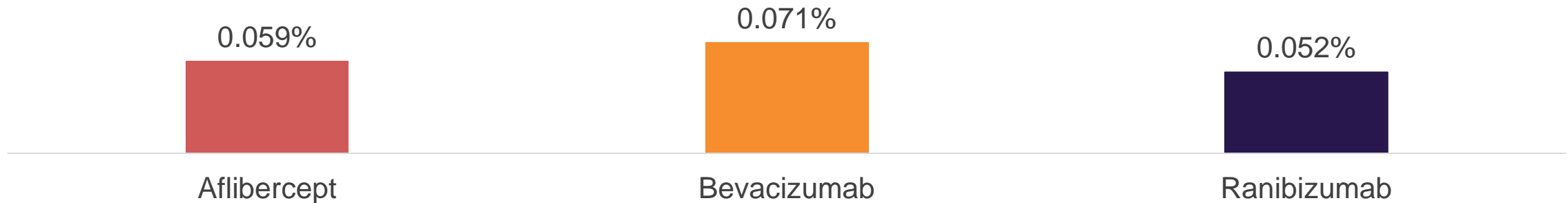
Year	Patients	Eyes
2013	265,678	266,969
2014	380,235	381,944
2015	424,961	426,090
2016	624,565	626,603
2017	745,023	749,561



Strengthening the Profession with Data to Support Health Policy Priorities

- FDA was investigating infections caused by issues at compounding pharmacies
- There was concern that there would be restrictions on bevacizumab use
- IRIS Registry data supported the safe use of bevacizumab using data driven analysis

Crude Endophthalmitis Rates within 15 days among AMD Patients, by Anti-VEGF Agent Injection



*Chi-square tests show that differences in rates are not statistically significant at $p < 0.05$ level



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Data source: IRIS® Registry, January 2013 to
June 2016

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VESTRUM HEALTH

Retina Treatment and Outcomes Database

2013 Established

250+ retina specialists

Demographically diverse

Projects nationally

1 million + patients

Vestrum Registry

- Track and monitor key practice metrics
- Compare outcomes to regional/national benchmarks
- Understand impact of treatments on patients
- Link outcomes analysis to treatment approaches
- Monthly physician quick trend results

Quick Trend Analysis



For any questions or comments
please contact Jonathan Foster at
203-571-8808 or by email to
jfoster@vestrumhealth.com

Physician Counts

- 11 physicians in your practice
- 42 physicians in your region

Practice Quick Trends

Feb 2017

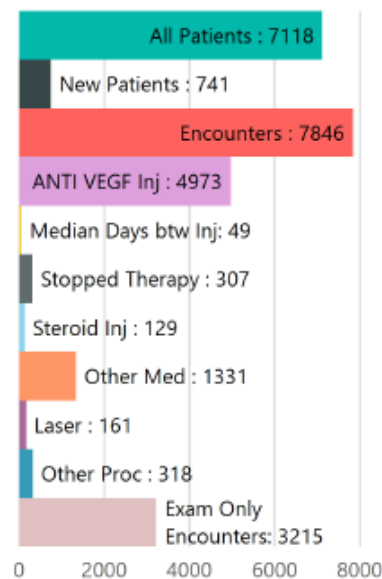
Prepared Exclusively for: Vestrum Health Sample Practice

Practice Size: [10+]

Vestrum Region: Midwest

MONTHLY SERVICE METRICS

MONTHLY QUICK VIEW




<div>ENCOUNTERS</div> <div>7,846</div> <div>LAST MONTH8,393-7 %▼</div> <div>LAST YEAR7,5684 %▲</div>	<div>ANTI VEGF INJECTIONS</div> <div>4,973</div> <div>LAST MONTH5,619-11 %▼</div> <div>LAST YEAR4,6547 %▲</div>
<div>STEROID INJECTIONS</div> <div>129</div> <div>LAST MONTH1253 %▲</div> <div>LAST YEAR130-1 %▼</div>	<div>OTHER MEDICATIONS</div> <div>1,331</div> <div>LAST MONTH1,531-13 %▼</div> <div>LAST YEAR1,3241 %▼</div>
<div>LASER</div> <div>161</div> <div>LAST MONTH1554 %▲</div> <div>LAST YEAR216-25 %▼</div>	<div>OTHER PROCEDURES</div> <div>318</div> <div>LAST MONTH27914 %▲</div> <div>LAST YEAR27715 %▲</div>
<div>EXAM ONLY</div> <div>3,215</div> <div>LAST MONTH3248-1 %▼</div> <div>LAST YEAR31512 %▲</div>	<div>STOPPED THERAPY</div> <div>307</div> <div>LAST MONTH324-5 %▼</div> <div>LAST YEAR26516 %▲</div>
<div>UNIQUE PATIENTS</div> <div>7,118</div>	<div>NEW PATIENTS</div> <div>741</div>

Impact of Data Reporting

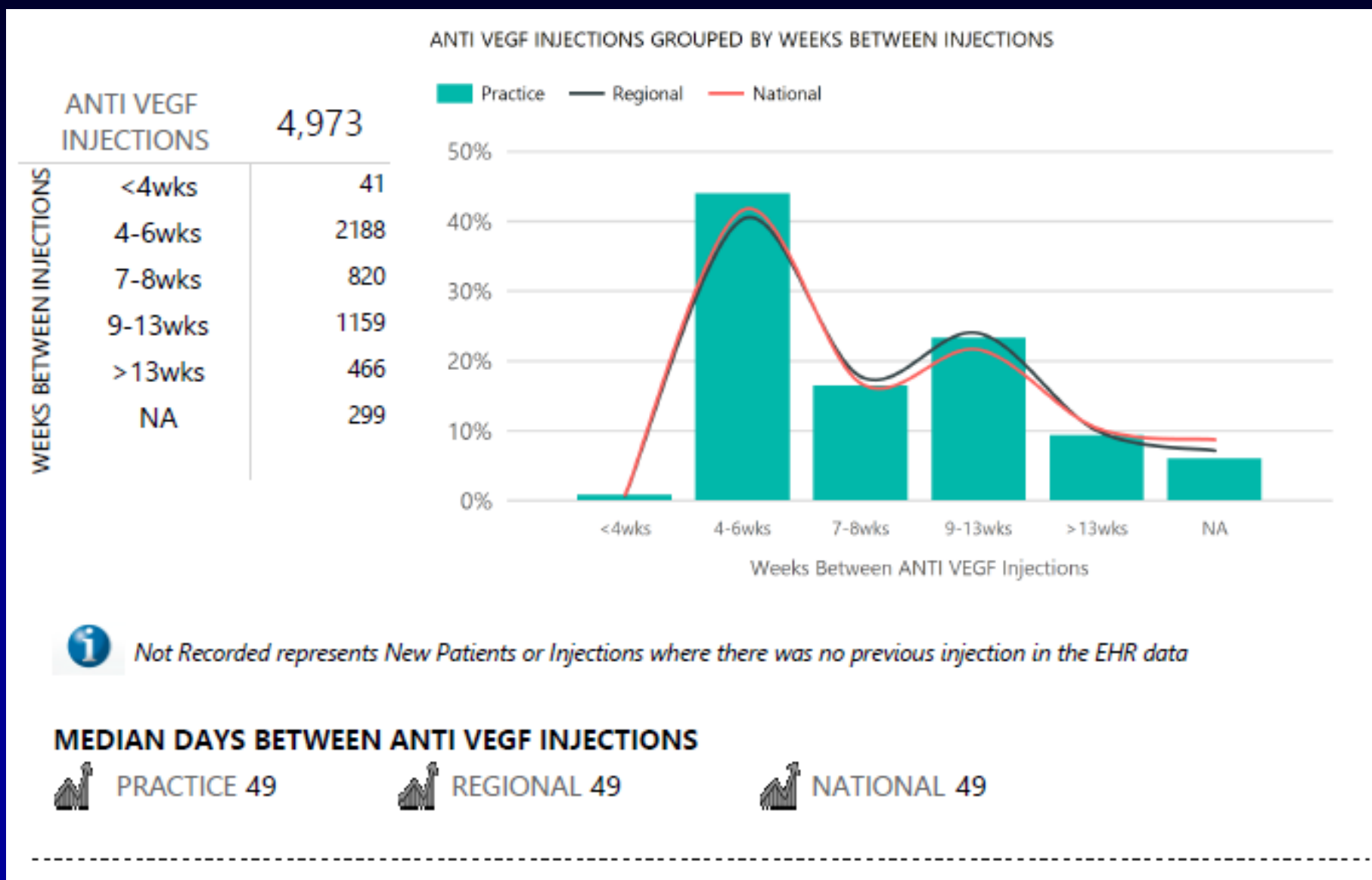
QUICK TRENDS REPORT

- Physician level data
- Variance
- Practice benchmark
- Regional benchmark
- National benchmark

 The table below compares the current month's value against the benchmarks of Last Month, 12 Month Average, Practice Average, Regional Average and National Average. The Indicators in the table show whether or not the current month's metric is above or below the benchmark.

Physician Name		CURRENT MONTH	LAST MONTH		12 MONTH AVG		PRACTICE AVG		REGIONAL AVG		NATIONAL AVG	
Physician 1	Encounters	749	832	▼	807	▼	713	▲	568	▲	522	▲
	ANTI VEGF	442	482	▼	433	▲	452	▼	296	▲	238	▲
	Steroid	20	19	▲	18	▲	12	▲	9	▲	9	▲
	Other Meds	137	113	▲			89	▲	68	▲	31	▲
	Laser	21	14	▲	18	▲	15	▲	22	▼	19	▲
	Other Proc	47	45	▲			18	▲	9	▲	10	▲
	Exam Only	319	379	▼	377	▼	292	▲	275	▲	273	▲
Physician 2	Encounters	462	531	▼	606	▼	713	▼	568	▼	522	▼
	ANTI VEGF	304	316	▼	363	▼	452	▼	296	▲	238	▲
	Steroid	4	2	▲	3	▲	12	▼	9	▼	9	▼
	Other Meds	83	102	▼			89	▼	68	▲	31	▲
	Laser	7	8	▼	9	▼	15	▼	22	▼	19	▼
	Other Proc	5	9	▼			18	▼	9	▼	10	▼
	Exam Only	181	234	▼	266	▼	292	▼	275	▼	273	▼
Physician 3	Encounters	193	198	▼	225	▼	713	▼	568	▼	522	▼
	ANTI VEGF	137	130	▲	140	▼	452	▼	296	▼	238	▼

Interval to anti-VEGF injection



Outcomes Analysis: Injection Frequency



Below shows the visual acuity results of patients who started therapy 12-15 months ago. The starting visual acuity score is taken at the time of the first injection while the one year visual acuity score is taken at 12 months.

Increase the accuracy of your reports by inputting a visual acuity measurement at every encounter!

ONE YEAR VISUAL ACUITY RESULTS

	AVG Starting VAS	AVG One Year VAS	Change in VAS
PRACTICE	70.45	75.62	5.17
<=6 INJECTIONS	73.12	76.93	3.81
>=7 INJECTIONS	69.48	75.15	5.67
REGIONAL	70.24	75.74	5.50
<=6 INJECTIONS	70.47	73.75	3.29
>=7 INJECTIONS	70.14	76.68	6.54
NATIONAL	67.48	73.29	5.81
<=6 INJECTIONS	66.59	70.75	4.16
>=7 INJECTIONS	68.03	74.86	6.83

ONE YEAR VISUAL ACUITY GAIN/LOSS BY INJECTION FREQUENCY



ASRS PATIENT SURVEY

- Kindle Fire Based
- Amazon Application – ASRS Patient Surveys
- First Vitreoretinal “Big Data” Patient Survey
- Cross-sectional with potential for longitudinal review
- 20 year anniversary of Preference and Trend Survey

All That's Worth KNOWING: How to assess the VALUE of a Retinal Specialist with and without “Big Data”

- Ginsburg EHR Errors
- Thompson Devaluation
- Parke IRIS Registry Analysis

- Panel Discussion