Trio Health

Real-World Evidence: Hepatitis C Treatment Demand & Non-Starts

March 8, 2017

Disclosure: Data Collection Process

Data Collection:

Data is collected through Trio Health Advisory Group, Inc.'s ("Trio Health") Innervation Platform (the "Trio Platform"), a proprietary platform designed as a portal for specialty pharmacies (SPs) and physicians to collaborate, communicate, and manage patient information for the purpose of improving patient care. Baseline information as well as outcomes data are collected through both the SPs and clinicians that work with Trio Health. Data is updated by a combination of nightly file feeds and manual user entry. Following the input of clinical data, the portal applies proprietary logic to identify errors and prompts SPs and clinicians to input data to ensure all data are complete and accurate.

Each physician and SP enrolled in the portal sign agreements representing that they are and will comply with all rules and regulations regarding the disclosure of patient information to a shared prescription database. Trio Health Analytics, Inc. ("Trio Analytics") a wholly owned subsidiary of Trio Health, is provided with de-identified, Health Insurance Portability and Accountability Act (HIPAA) compliant patient information from the Trio Platform for multiple purposes, including licensing of the de-identified data. Trio Analytics is provided with data that replaces patient identifiers, treating physician and practice names with generic codes (e.g., Patient 001, Physician 001, and Practice 001). This process was approved as an institutional review board exemption under category 45 CFR 46 without waivers from specific institutions (Western Institutional Review Board #1-921115-1).

Disclosures: Scientific Steering Committee

The Scientific Steering Committee (SSC) consists of (in alphabetical order):

Nezam Afdhal, MD – Professor of Medicine, Harvard University; Chairman of Trio Health's Scientific Steering Committee (SSC)
Bruce Bacon, MD – Professor of Internal Medicine, St Louis University and Endowed Chair of Gastroenterology, St. Louis University, St Louis, MO
Michael Curry, MD – Section Chief, Hepatology, Director of Liver Transplantation – Beth Israel Deaconess Medical Center, Boston, MA
Douglas Dieterich, MD – Professor of Medicine, Division of Liver Diseases and Director, Institute of Liver Medicine, Icahn School of Medicine and Mount Sinai Medical Center, NY, NY.
Steven Flamm, MD – Professor of Medicine and Surgery, Northwestern University Feinberg School of Medicine and Chief of Transplantation Hepatology and Medical Director of Liver Transplantation.
Kris Kowdley, MD- Director of the Liver Care Network and Organ Care Research at Swedish Medical Center, Seattle WA.
Naoky Tsai, MD – Medical Director of the Queens Liver Center. Founded first liver transplantation center in Hawaii.
Zobair Younossi, MD, MPH- Chairman of the Department, Inova Fairfax Hospital, and Vice President for Research for Inova Health System. Professor of Medicine, Virginia Commonwealth University, and affiliate Professor of Biomedical Sciences at George Mason University

Dr. Dieterich consults for and advises for Gilead, Bristol-Myers Squibb, AbbVie, and Merck. Dr. Younossi consults for, advises for, and received grants from Gilead. He consults for and advises for AbbVie, Bristol-Myers Squibb, and Intercept. Dr. Lee is employed by and owns stock in Trio Health. She received grants from Gilead, AbbVie, and Merck. Dr. Milligan is employed by Trio Health. He received grants from Gilead, AbbVie, and Merck. Dr. Flamm advises for, is on the speakers' bureau for, and received grants from Gilead and AbbVie. He advises for and is on the speakers' bureau for Merck. Dr. Curry consults for and received grants from Gilead. He consults for Trio Health, AbbVie, and Bristol-Myers Squibb. Dr. Kowdley consults for, advises for, and received grants from Gilead and Intercept. He advises for and received grants from AbbVie and Trio Health. He advises for Enanta and Verlyx. He received grants from Evidera, Galectin, Immuron, Merck, NGM, Novartis, and Tobira. Dr. Tsai consults for, advises for, is on the speakers' bureau for, and received grants from Gilead, Bristol-Myers Squibb, and Merck. Dr. Afdhal consults for, advises for, and received grants from Gilead. He consults for and advises for Merck, Echosens, GlaxoSmithKline, Ligand, Janssen, Roivant, Co-Crystal, and Shionogi. He received grants from AbbVie and Bristol-Myers Squibb. He is employed by and owns stock in Spring Bank and Trio Healthcare. Dr. Bacon consults for, is on the speakers' bureau for, and received grants from Merck. He advises for, is on the speakers' bureau for, and received grants from AbbVie and Gilead. He advises for and is on the speakers' bureau for Janssen. He advises for and received grants from Bristol-Myers Squibb. He is on the speakers' bureau for Valeant.

Disclosure: Trio Health Analytics

Trio Analytics receives sponsorship from all of the manufacturers of oral direct-acting antiviral's (DAA's) agents to treat HCV including AbbVie Inc., Gilead Sciences and Merck & Co.

Trio Analytic's Scientific Steering Committee (SSC) consists of national key opinion leaders that actively treat patients, conduct clinical trials as well as serve on national scientific and educational boards to the HCV companies. SSC's role for Trio Analytics is to serve as an unbiased clinical team to assess ideas for research who are committed to presenting real-world data and outcomes with no bias to a company or product type.

To enhance the commitment to good research, it is agreed upon with every manufacturer client that all studies are Investigator Sponsored Research (ISR) with the SSC to have final veto power to maintain unbiasedness on all clinical protocols, data results and presentations.

The 2016 Access to Care database with over 15,000 patients was sponsored by Trio Analytics and our specialty pharmacy partners to advocate on behalf of all Hepatitis C patients that have been denied treatment.

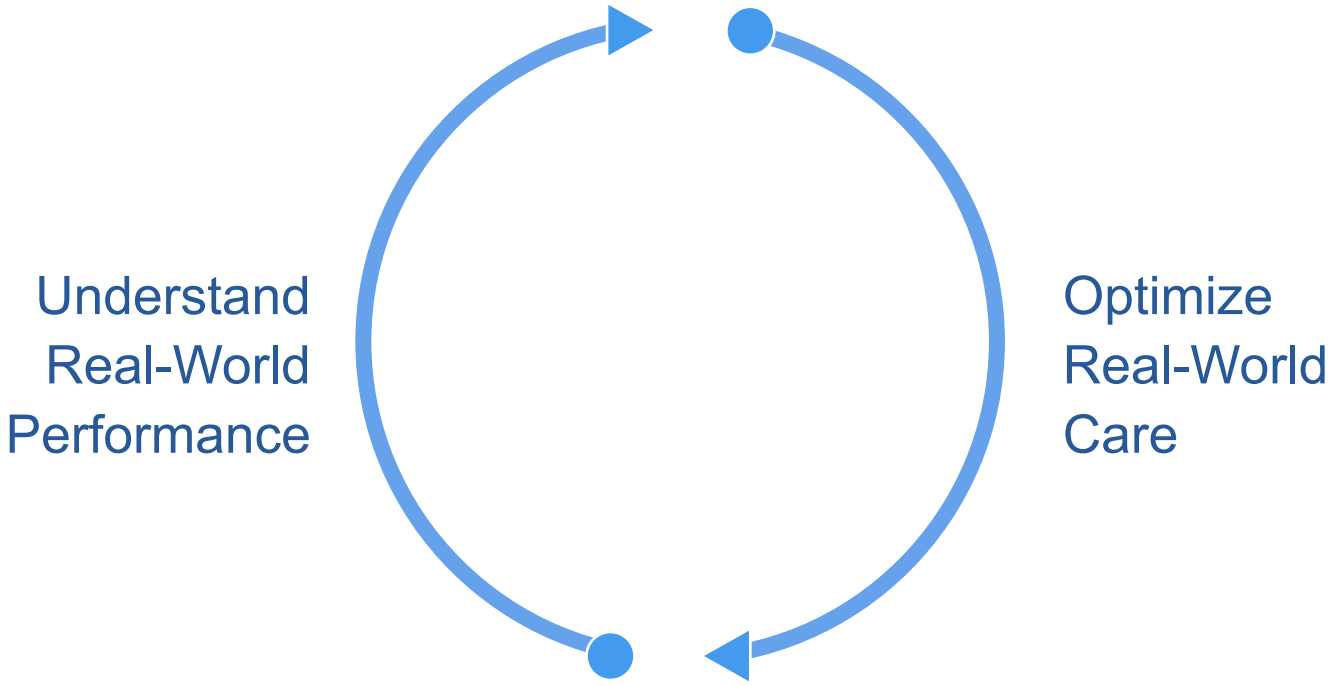
AGENDA

Overview	Brent Clough CEO, Trio Health Inc
Real-World Evidence: Access to Care	Nezam Afdhal, MD Professor of Medicine, Harvard Medical School Chairman, Trio Scientific Steering Committee Scott Milligan, PhD Head of Analytics, Trio Health Inc
Health Care Policy	Jayson Slotnik, Partner Healthcare Policy Strategies, LLC

Trio Health

Trio Health's Mission

Trio's mission is to improve the quality of care and outcomes of real-world patients through the coordination of all patient stakeholders.



Trio's Business Principles

Our Commitment To Provide Independent And High Integrity Insights

Control of Data

Trio Health owns the data for the purpose of medical research

Disease-Based RWE

Heterogeneous data (all drugs, physicians, patients) derived from real-world setting

Business Model

Increased sponsorship drives sample size that improves confidence level (p-Value)

Investigator Committee

Scientific Steering Committee comprised of leading thought-leaders for a given disease

Independent Publications

Studies are classified as Investigator Sponsored Research (ISR) with the MFRs

Independent HCV Scientific Steering Committee

- Published hundreds of peer-review articles and research
- Participated in pivotal HCV clinical trials
- Serve on national and international advisory boards

Nezam Afdhal, MD

Bruce Bacon, MD

Michael Curry, MD

Douglas Dieterich, MD

Steven Flamm, MD

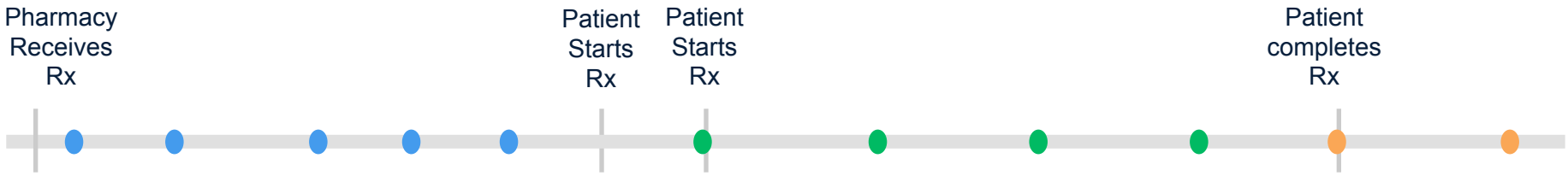
Kris Kowdley, MD

Naoky Tsai, MD

Zobair Younossi, MD, MPH

Data Completeness and Integrity

Track the patient journey similar to FedEx tracking a package. Audit the performance of each stakeholder to measure their impact on the patient.



Prior to Therapy

- Non-starts, Time to Fill
- Baseline Data: labs, severity, co-infections
- Transfers between specialty pharmacies
- Payer insights
- Earlier view of product demand
- Transfer patients

During Therapy

- Discontinuations
- Dispensing data
- Lab data

Out of Therapy

- Outcomes

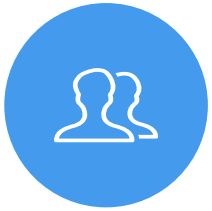
How Do We Achieve Our Mission?

Awareness

Collect timely real-world clinical evidence to inform, educate and promote best practices for the care of patients.

Accountability

Evaluate the safety, efficacy and tolerability for all disease-based regimens. Measure the impact that physicians, pharmacies and other care givers have on the performance of patients.

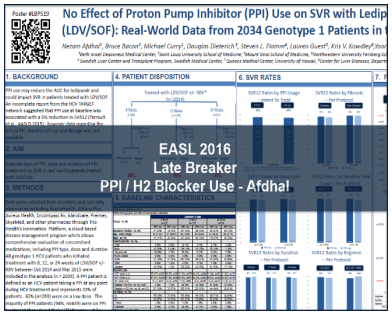


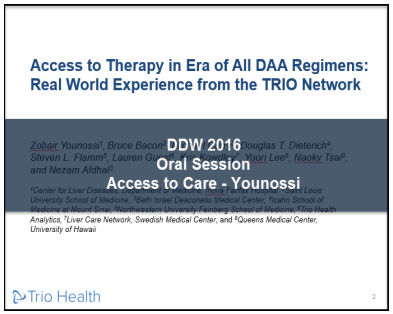
Advocacy

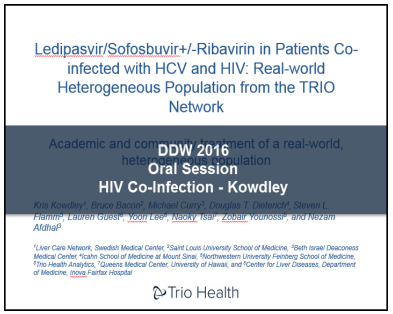
Leverage high integrity clinical data so that patients have access to the best therapy from the right support team.

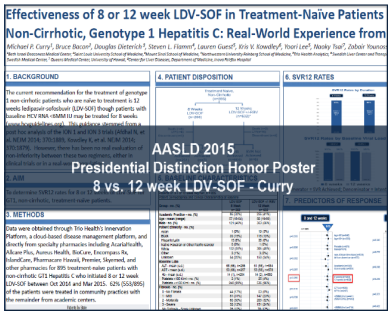
Trio's Hepatitis C Global Publications

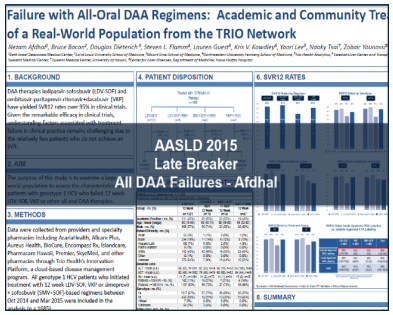
>30+ peer-reviewed publications in HCV since 2014

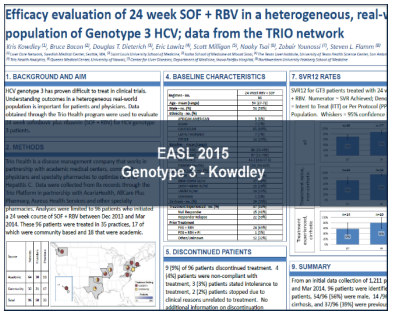












BOSTON SAN FRAN | SAN FRAN | WASH DC SAN DIEGO | AUSTRIA SPAIN | HAWAII | PHILADELPHIA | SOUTH KOREA | JAPAN | WASH DC

Patient Stakeholders Do Impact Performance

Failure with All-Oral DAA Regimens: Academic and Community Treatment of a Real-World Population from the TRIO Network

Nezam Afdhal[1], Bruce Bacon[2], Douglas Dieterich[3], Steven L. Flamm[4], Lauren Guest[5], Kris V. Kowdley[6], Yoori Lee[5], Naoky Tsai[7], Zobair Younossi[8]

[1]Beth Israel Deaconess Medical Center, [2]Saint Louis University School of Medicine, [3]Mount Sinai School of Medicine, [4]Northwestern University Feinberg School of Medicine, [5]Trio Health Analytics, [6]Swedish Liver Center and Transplant Program, Swedish Medical Center, [7]Queens Medical Center, University of Hawaii, [8]Center for Liver Diseases, Department of Medicine, Inova Fairfax Hospital

Trio Health

Only six treatment options available. 9% of the patients were prescribed an outside the label regimen that yielded a 11% decline in cure rates. Outside the label results impacted overall performance by 100 basis points.

SVR12 Rates Inside Approved FDA Labeling vs. Outside Approved FDA Labeling

	LDV-SOF +/-RBV	VKP +/-RBV	SMV+SOF +/-RBV	Total
Outside Approved FDA Labeling	85% (115/135)	83% (5/6)	63% (5/8)	84% (125/149)
Inside Approved FDA Labeling	95% (1391/1462)	93% (38/41)	82% (27/33)	95% (1456/1536)
Total	94% (1506/1597)	91% (43/47)	78% (32/41)	94% (1581/1685)

*Patients prescribed outside approved FDA labeling: GT1a on VKP without RBV, tx failure cirrhotic patients on 12 weeks of VKP+/-RBV, LDV-SOF without RBV, or SMV+SOF+/-RBV

Hepatitis C Market: 2014 to Present

FACTS

Trio has collected real-world evidence on 15,000 HCV patients and published over 30 studies since the launch of Sovaldi and Olysio in 2014.

Cure rates for latest HCV therapies exceed 95% in the real-world and require only 8 to 12 weeks of treatment. Up until 5 years ago, standard of care treatment required 24 to 48 weeks of therapy with 20% discontinuation rates and cure rates of only 50%.

HOWEVER…

1 **Non-Start Rates Have Increased**

Non-start rates have increased from 8% in 2014 to over 30% in 2016, predominantly due to insurance denials

2 **Payers Have Imposed Restrictions**

Restrictions include fibrosis criteria, sobriety requirements, and prescriber limitations; these restrictions did not exist for the older regimens

3 **If for HCV, Why Not Cancer?**

Cancer drugs do not cure patients in 8 to 12 weeks, nor do Payers deny access to Stage I or II patients

PERCEPTION

Patient Demand

Declining patient demand based on new starts

Access to Care

High costs require payers to restrict access

Healthcare Policy

Acceptable to restrict access for Hepatitis C patients

REALITY

Patient Demand

New starts do not reflect actual demand

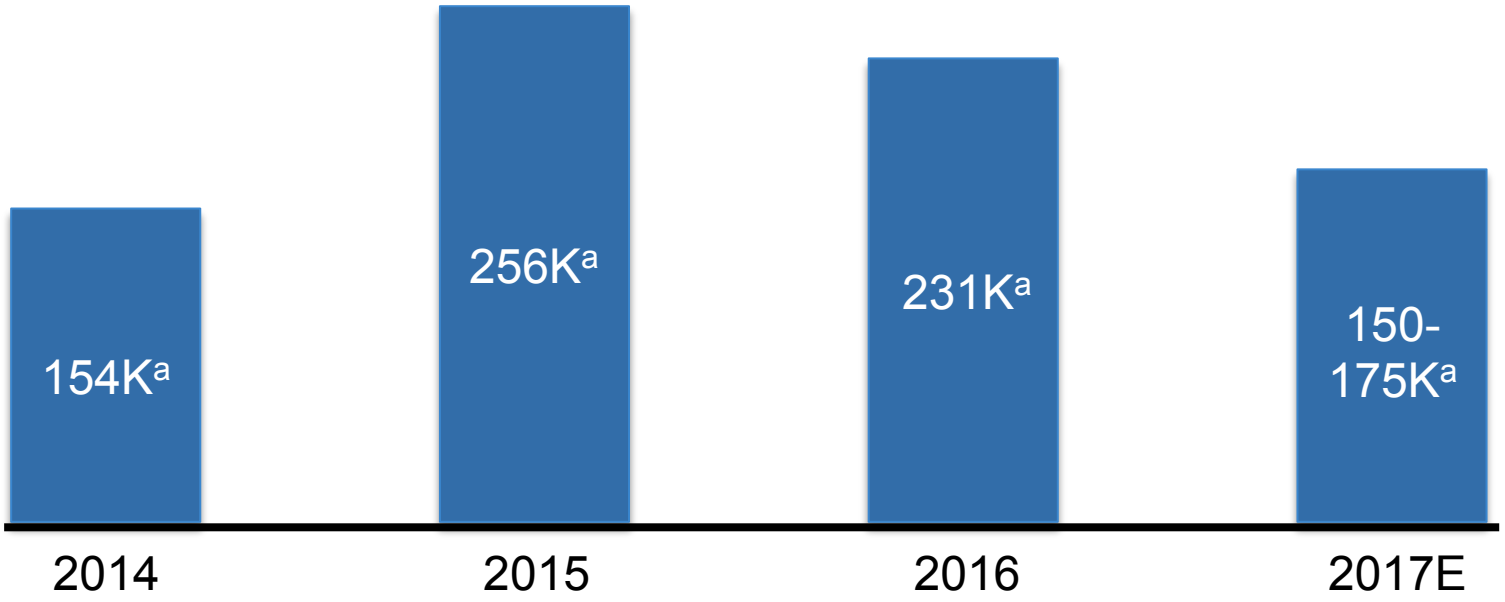
Access to Care

True costs are a fraction of real costs after discounts and rebates

Healthcare Policy

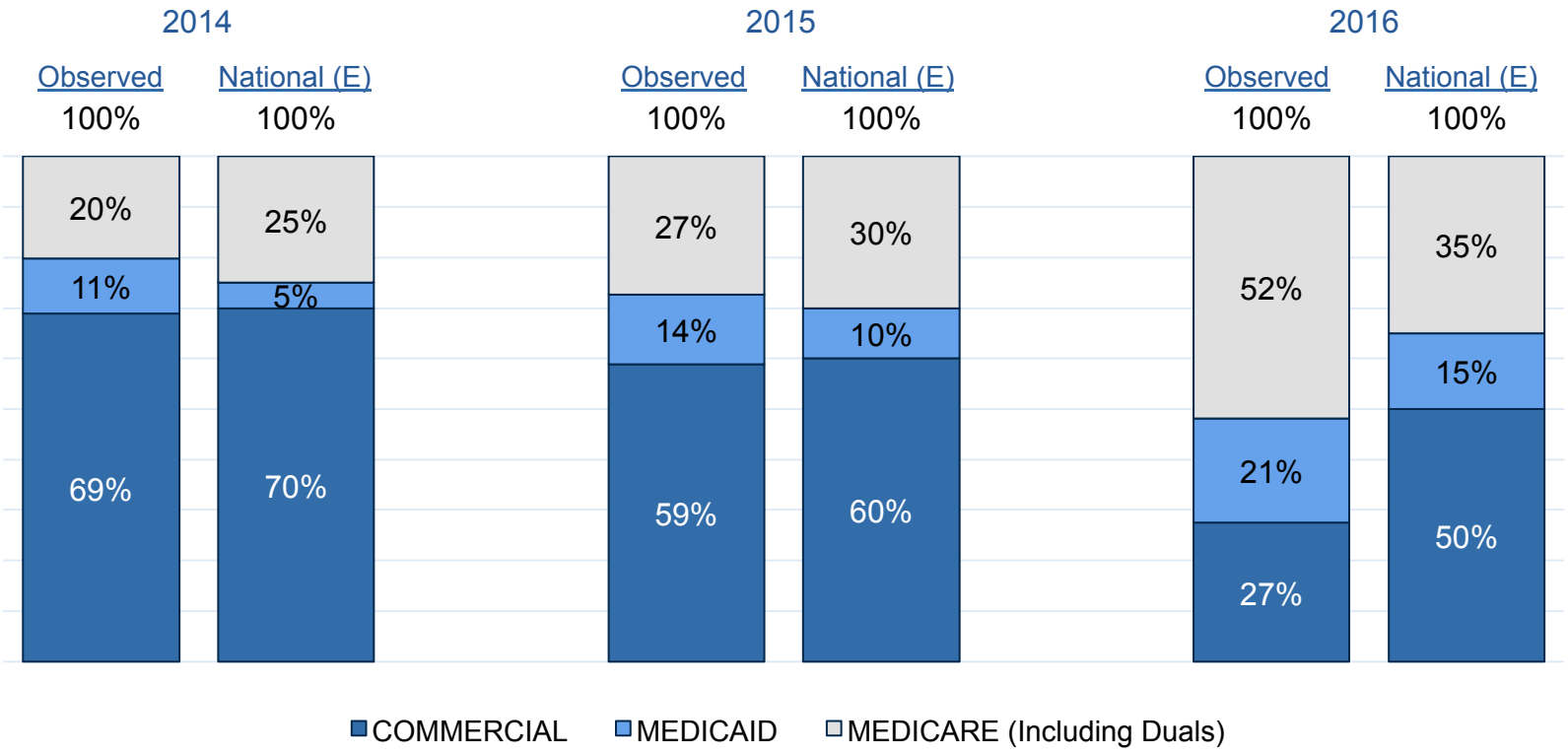
Restrictions at odds with policy and legal precedent along with all other diseases

HCV Total Market Patient Starts
(Gilead Estimates)



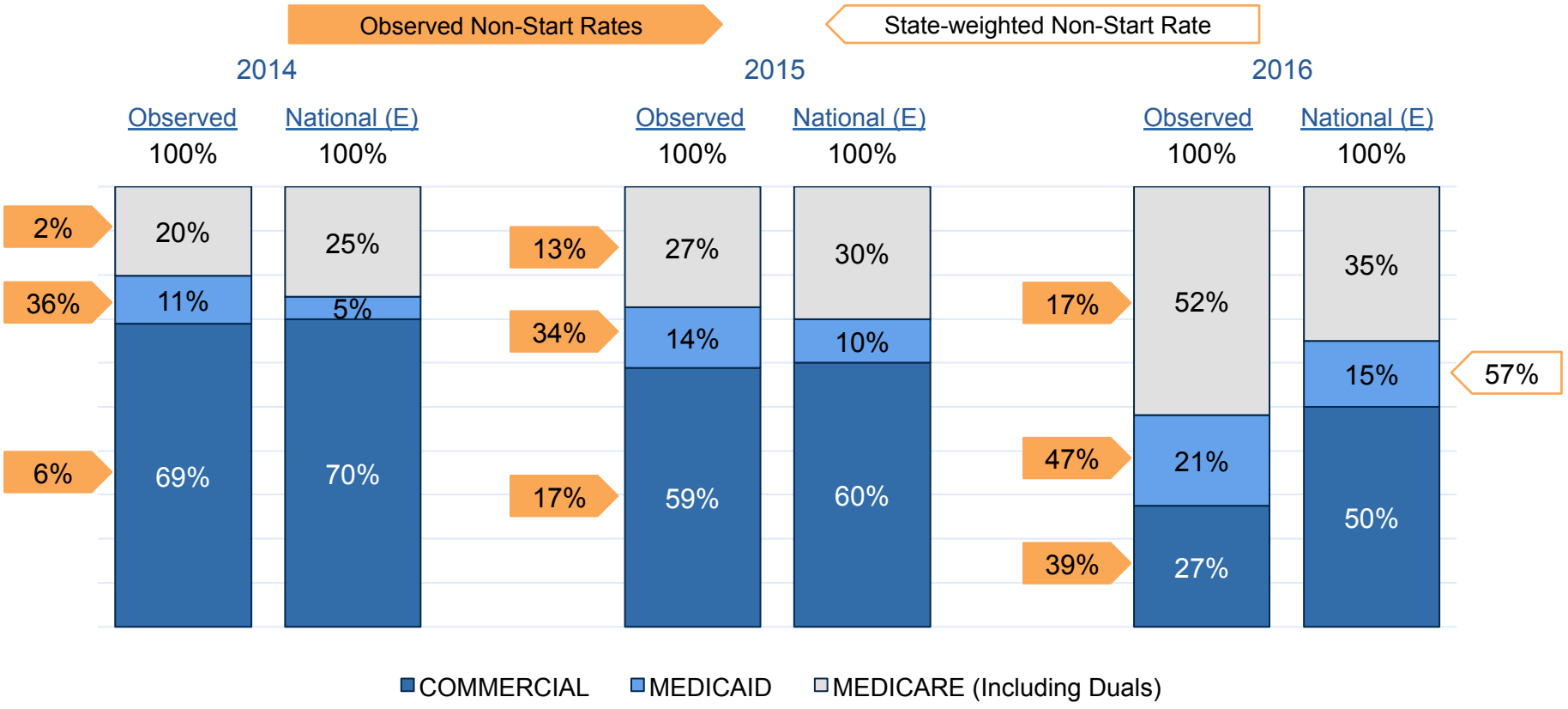
[a]Gilead Earnings Presentation, page 24 4Q16, Feb. 7, 2017

Trio Health Observed and Estimated Starts Distribution by Payer Mix



Adjusted Start Rates were based on National Estimated Start distributions by payer type (see Methods: Estimating Total Demand). 2016 adjusted was also weighted by Medicaid State sample (see Methods). Trio Health Observed Payer type distribution for Patients that started therapy in different time frames: 2014 (Dec 2013 to Sep 2014); 2015 (Oct 2014 to Mar 2015); 2016 (Oct 2015 to Sep 2016). For simplicity, distributions were set to 3 payer types. In the Trio Health Sample, patient assistance, self-pay, VA and unknown account for 2 to 10% of starts.

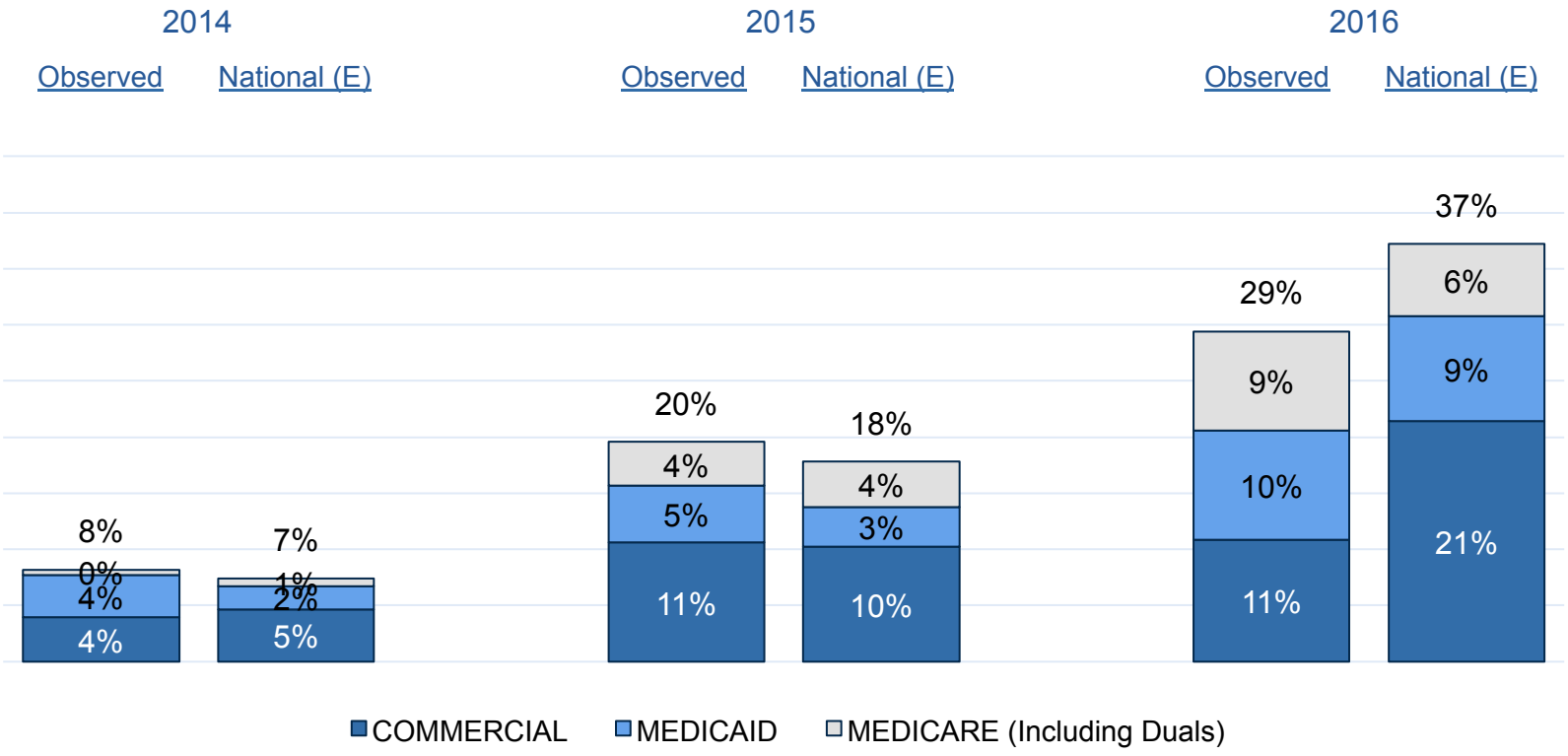
Trio Health Observed and Estimated Starts Distribution by Payer Mix



Adjusted Start Rates were based on National Estimated Start distributions by payer type (see Methods: Estimating Total Demand). 2016 adjusted was also weighted by Medicaid State sample (see Methods). Trio Health Observed Payer type distribution for Patients that started therapy in different time frames: 2014 (Dec 2013 to Sep 2014); 2015 (Oct 2014 to Mar 2015); 2016 (Oct 2015 to Sep 2016). For simplicity, distributions were set to 3 payer types. In the Trio Health Sample, patient assistance, self-pay, VA and unknown account for 2 to 10% of starts.

Trio Health Observed and Adjusted Non-Start Rates

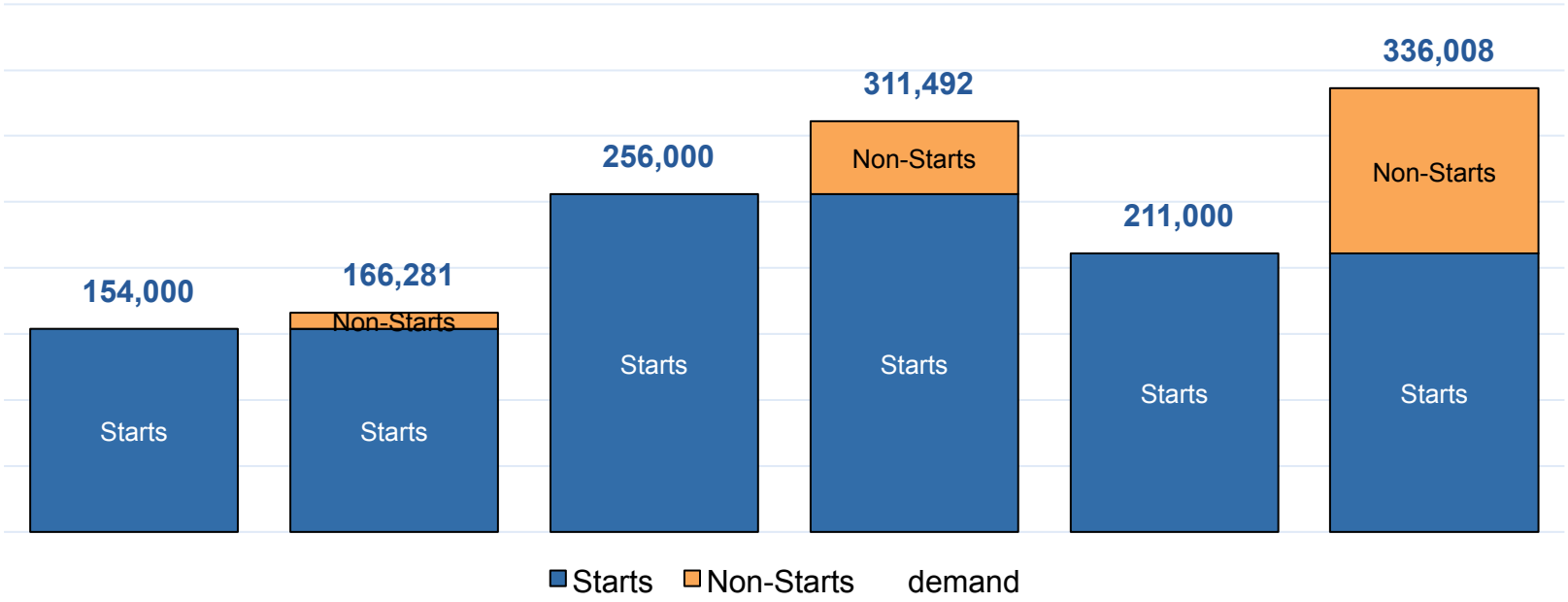
Data Labels are weighted non-start Rates.
Area sizes represent contribution of Payer Type to overall non-start rate



Adjusted Start Rates were based on National Estimated Start distributions by payer type (see Methods: Estimating Total Demand). 2016 adjusted was also weighted by Medicaid State sample (see Methods). Trio Health Observed Payer type distribution for Patients that started therapy in different time frames: 2014 (Dec 2013 to Sep 2014); 2015 (Oct 2014 to Mar 2015); 2016 (Oct 2015 to Sep 2016). For simplicity, distributions were set to 3 payer types. In the Trio Health Sample, patient assistance, self-pay, VA and unknown account for 2 to 10% of starts.

Estimated US Hepatitis C Treatment Demand

Trio Health Non-Start Rates Observed and Adjusted for Payer Mix					
2014		2015		2016	
Starts	+ Non-Starts (Adjusted)	Starts	+ Non-Starts (Adjusted)	Starts	+ Non-Starts (Adjusted)
Non-Start Rates	**7%**		**18%**		**37%**
154,000	**+12,281**	256,000	**+55,492**	211,000	**+125,008**



Starts from Gilead Earnings Presentation 4Q16, Feb. 7, 2017. 2016 Starts account for removal of 20K due to VA contracting. Observed Non-Start rates from Trio Health (periods 2014 (Dec 2013 to Sep 2014); 2015 (Oct 2014 to Mar 2015); 2016 (Oct 2015 to Sep 2016)) were adjusted by Payer Mix using national estimates. For 2016, Medicaid rates by state were weighted to yield an aggregate Medicaid non-start rate prior to generating the overall non-start rate. See Methods.

Media Focus on Cost not Cure

FEBRUARY 5, 2015

Prices for the miracle drugs that cure Hepatitis C are collapsing

Max Nisen

SEPTEMBER 2, 2015

The New York Times

The Opinion Pages | EDITORIAL

Costly Hepatitis C Drugs for Everyone?

By THE EDITORIAL BOARD SEPT. 2, 2015

NOVEMBER 23, 2015

HEALTH NEWS | Mon Nov 23, 2015 | 4:33pm EST

Expensive new Hep C drugs may be cost-effective even for early disease

By Andrew M. Seaman

APRIL 14, 2016

This is the most expensive drug in America

By Emma Court

Published: Apr 14, 2016 5:45 p.m. ET

It costs $84,000 per treatment -- but was originally only supposed to cost $36,000.

What Are The Rebates & Discounts To Payers?

As Evercore ISI analyst Mark Schoenebaum pointed out on the call, AbbVie once claimed it wouldn't use price to grab share from Gilead's (GILD) Harvoni when it hit the market with Viekira Pak. But then AbbVie negotiated an exclusive deal with PBM Express Scripts, touching off an all-out pricing war and discounting its med by 50%.

FiercePharma October 28, 2015

"We continue to work to ensure patients have access to HCV medications. For example, in the U.S., we've offered very generous rebates and discounts into the various entities that reimburse for prescription drugs. Contrary to the sometimes misleading headlines citing our list pricing, in 2016 in the U.S., the volume-weighted average price for Harvoni was reduced to less than $15,000 per bottle inclusive of discounts and rebates. This average was skewed by the significant discounts provided to Medicaid and the VA and the 340B program. For example, our average price per bottle to Medicaid is less than $10,000 for states that are opening up access to all patients. Prices for 2017 are expected to be similar."

John Milligan, CEO Gilead February 7, 2017
Seeking Alpha Earnings Call Transcript

Patient Access & Guidance Rulings

2014: Payers largely require severe fibrosis for treatment

61% of state Medicaids require severe fibrosis (F3/F4)*

Nov 2015: CMS Release 172

Guidance for state Medicaids regarding access

2016: Restrictions Decrease

45% of state Medicaids require severe fibrosis (F3/F4)*

Feb 2017: UnitedHealthcare Agrees to Eliminate Fibrosis and Sobriety Requirements

Agrees to expand coverage in effort to settle a class action lawsuit

*National Viral Hepatitis Roundtable, 11/14/2016
Center for Health Law and Policy Information, Harvard Law School

Legal and Innovative Approaches to Improve Access

InsideHealthPolicy
An Inside Washington news service

NON-SUBSCRIBER OPTIONS
FREE TRIAL | NEWSSTAND

HOME FDA WEEK INSIDE CMS HEALTH EXCHANGE ALERT FEATURES TOPICS ABOUT US

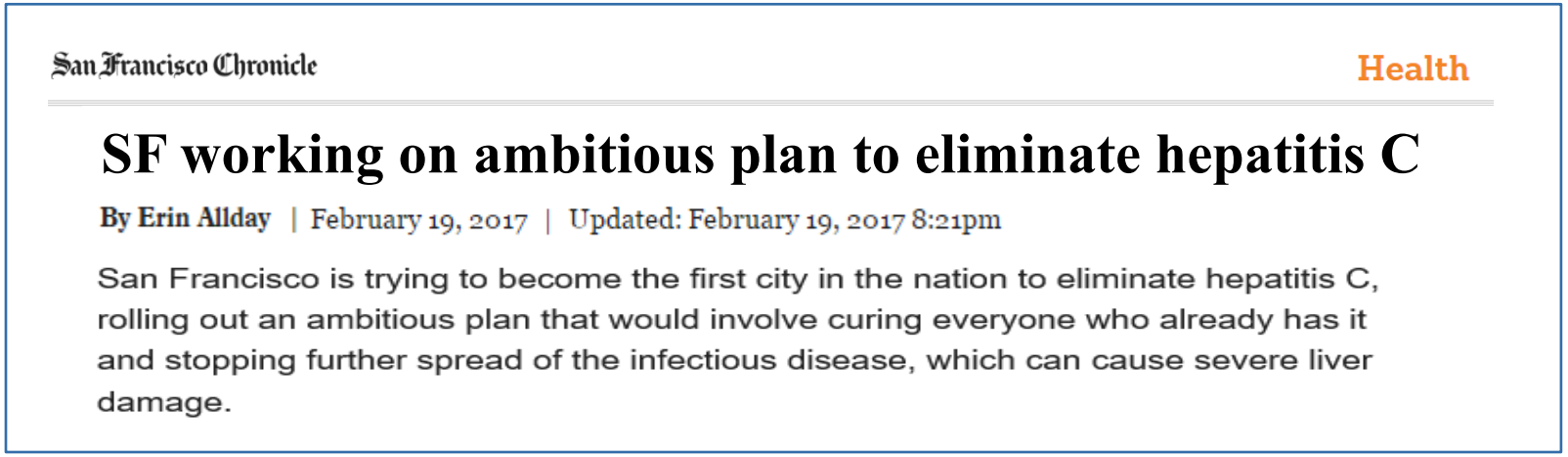
Thursday, March 02, 2017

DAILY NEWS

Delaware Removes Hepatitis C Restrictions In Medicaid Under Threat Of Lawsuit

June 14, 2016

Delaware, facing the threat of a class action lawsuit, recently tossed out its policy of offering Medicaid hepatitis C coverage to only those individuals who had progressed to the point of significant liver damage or cirrhosis. At the end of May, a federal judge relied in part on CMS' warning to states against restricting coverage of hepatitis C drugs when he ordered Washington state to cover the drugs for all Medicaid beneficiaries who are infected, and Delaware risked facing a...



San Francisco Chronicle

Health

SF working on ambitious plan to eliminate hepatitis C

By Erin Allday | February 19, 2017 | Updated: February 19, 2017 8:21pm

San Francisco is trying to become the first city in the nation to eliminate hepatitis C, rolling out an ambitious plan that would involve curing everyone who already has it and stopping further spread of the infectious disease, which can cause severe liver damage.

Methods

Methods: Estimating Total Demand

		a	b	c
	[a]National (E) Starts Distribution	2014	2015	2016
1	Total	100%	100%	100%
2	Commercial	70%	60%	50%
3	Medicaid	5%	10%	15%
4	Medicare (plus Duals)	25%	30%	35%

Application of National (E) Starts Distribution to Gilead Starts

	[b]Gilead Starts	2014	2015	2016
5	Total	154000	256000	211000
6	Commercial	107800	153600	105500
7	Medicaid	7700	25600	31650
8	Medicare (plus Duals)	38500	76800	73850

Total Weighted is the Gilead Starts (row 5) / Total Demand (row 13)

	[c]Trio Observed Start Rates	2014	2015	2016
9	Total (weighted)	93%	82%	63%
10	Commercial	94%	83%	61%
11	Medicaid	64%	66%	43%
12	Medicare (plus Duals)	98%	87%	83%

Total Demand calculated by payer type (e.g. Row 6 / Row 10)

	Total Demand (E)	2014	2015	2016
13	Total	166281	311492	336008
14	Commercial	114698	184320	173805
15	Medicaid	12119	38752	73386
16	Medicare (plus Duals)	39464	88420	88817

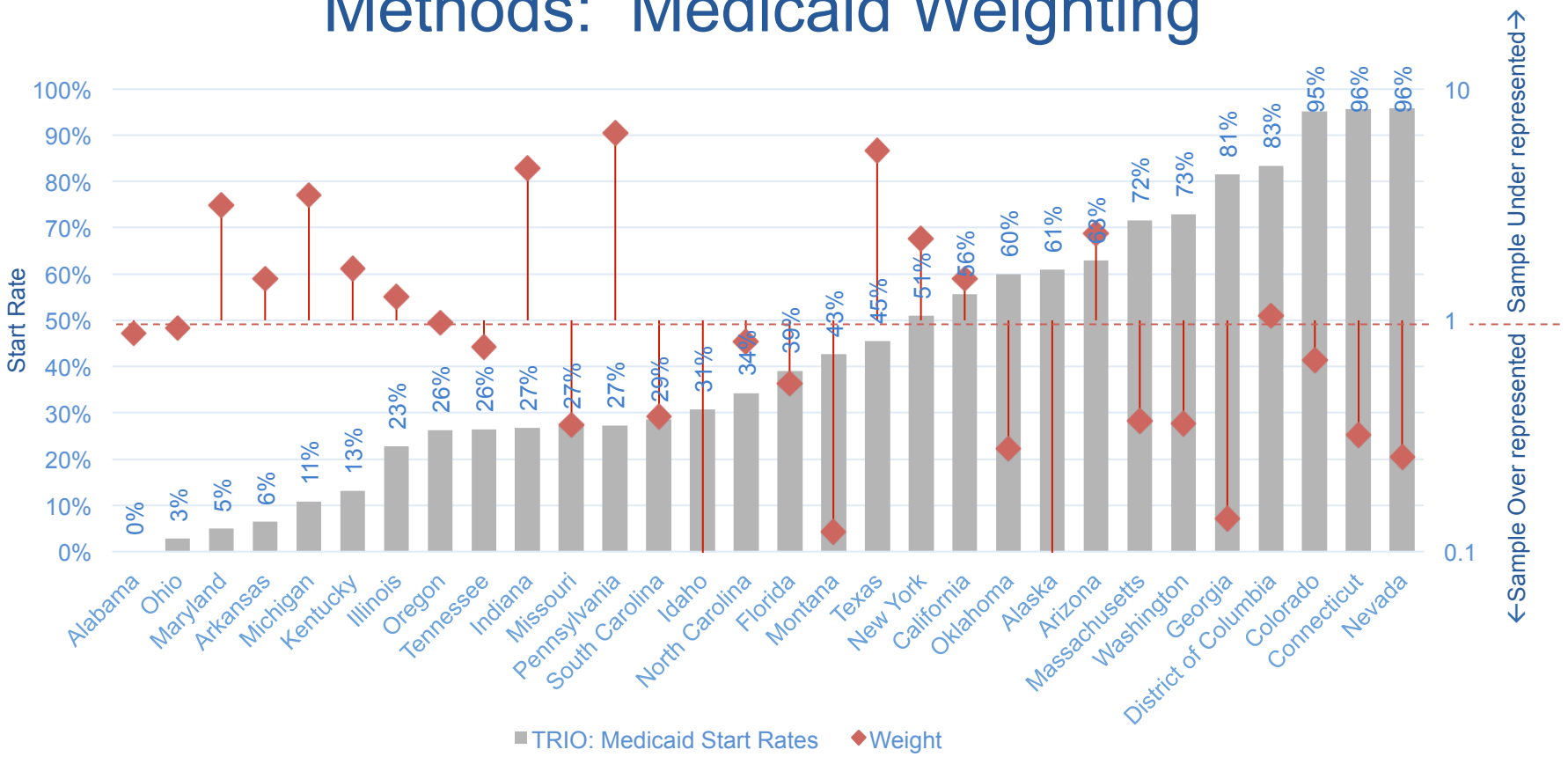
[a]National Starts Distribution based on literature estimates and adjusted where information was lacking using Trio Health data.

[b]Gilead Earnings Presentation 4Q16, Feb. 7, 2017; Starts for 2016 after removal of 20K per Gilead that reflects one time VA contracting.

[c]Trio Health Observed Payer start rates. For 2016, weightings for state sample were applied in the Medicaid Start Rate (See Methods: Medicaid Weighting).

Time frames for Trio Health data are 2014 (Dec 2013 to Sep 2014); 2015 (Oct 2014 to Mar 2015); 2016 (Oct 2015 to Sep 2016)

Methods: Medicaid Weighting



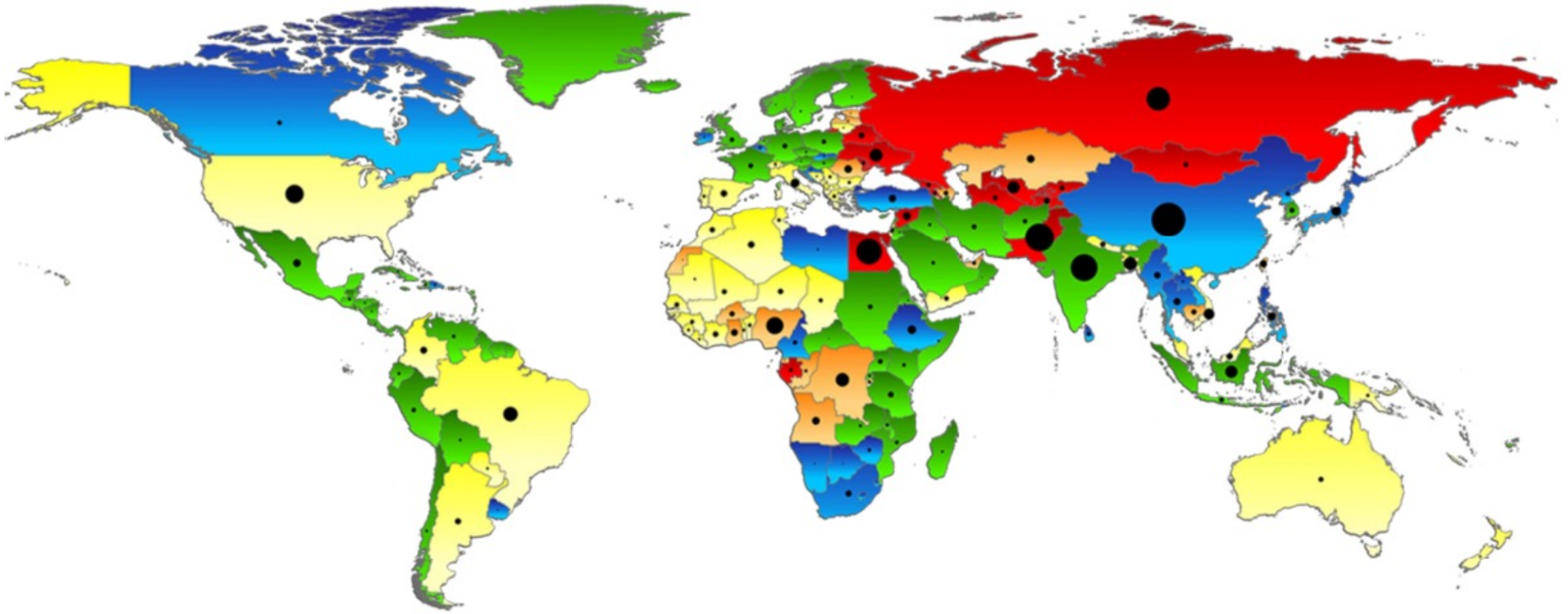
Trio Medicaid Sample was weighted by State based on Sep 2016 Adult Monthly Medicaid Enrollment. For states not reporting Child and CHIP enrollees for Sep 2016 (TN, DC, AZ), overall 50.5% Children/CHIP was used to determine Adult counts.

30 states with Trio patients >10 for Medicaid, and which represented 85% of all adult Medicaid enrollees, were used to generate an aggregate weighted start rate, which was applied 2016 Gilead starts (Gilead Earnings Presentation 4Q16, Feb. 7, 2017 and previous slide) to generate a total demand number for Medicaid.

Real-World Evidence

Nezam Afdhal, MD

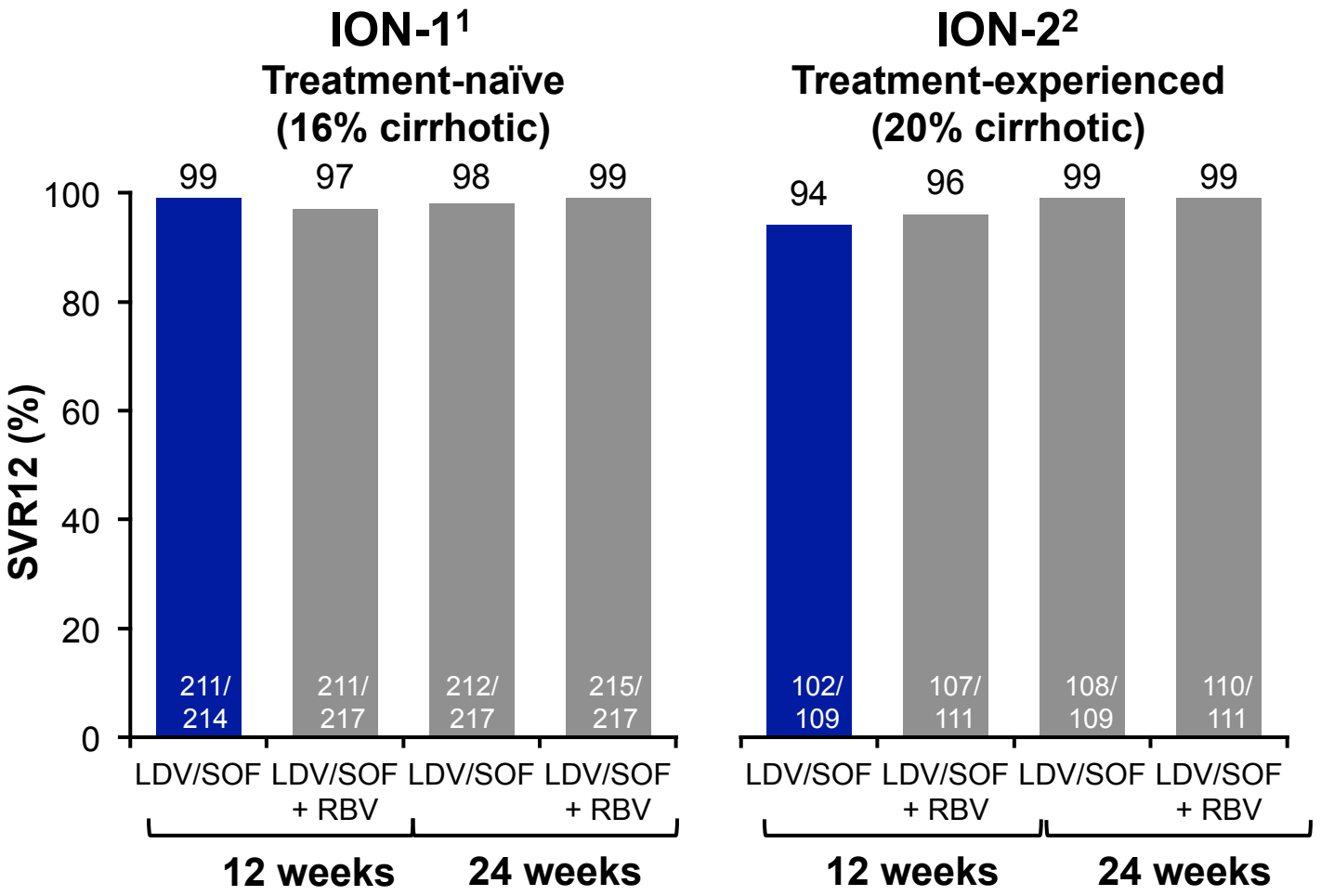
Polaris Observatory: Global prevalence of hepatitis C



Current treatment rate is not sufficient to achieve the WHO aim to eliminate HCV by 2030

Blach S, et al. AASLD 2016, Boston. #753

LDV/SOF ± RBV in GT 1 patients: overall efficacy in the ION-1 and ION-2 clinical trials



1. Afdhal N, et al. N Engl J Med 2014;370:1889–98;
2. Afdhal N, et al. N Engl J Med 2014;370:1483–93

LDV/SOF + RBV for 12 or 24 weeks and LDV/SOF for 24 weeks may not be licensed to treat patients with GT 1 HCV in your country. Refer to your countries Prescribing Information for specific details. Unlicensed regimens are shown in Grey throughout.
SVR: sustained virological response

Patients are more complex in clinical practice than in clinical trials

RCTs

Homogenous population
Optimal compliance
Excludes complex patients
Excludes co-morbidities

Real-world data

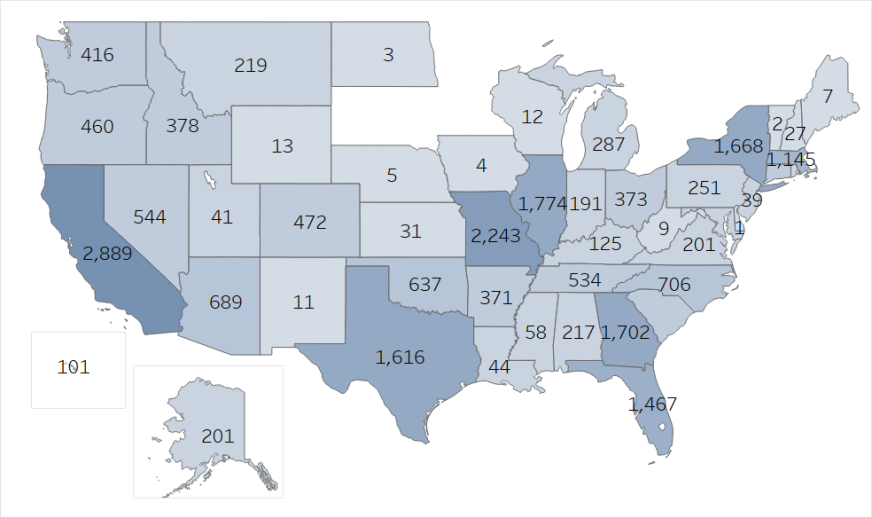
Heterogeneous population
Real-world compliance
Includes complex patients
(PWID, psychiatric, etc.)
Multiple co-morbidities

Efficacy versus effectiveness

PWID: People who inject drugs; RCT: randomised clinical trial

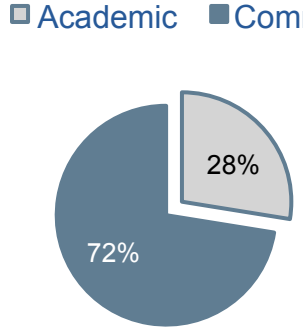
Real-world data from Trio Health Network

Patients prescribed anti-HCV therapy Oct 2013 to Sep 2016

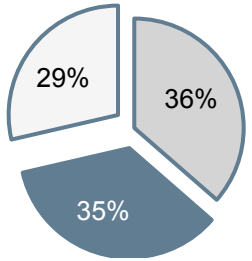


Oct 2013 to Sep 2014	Oct 2014 to Mar 2015	Oct 2015 to Sep 2016	All periods
3841	**2537**	**16912**	**23290**

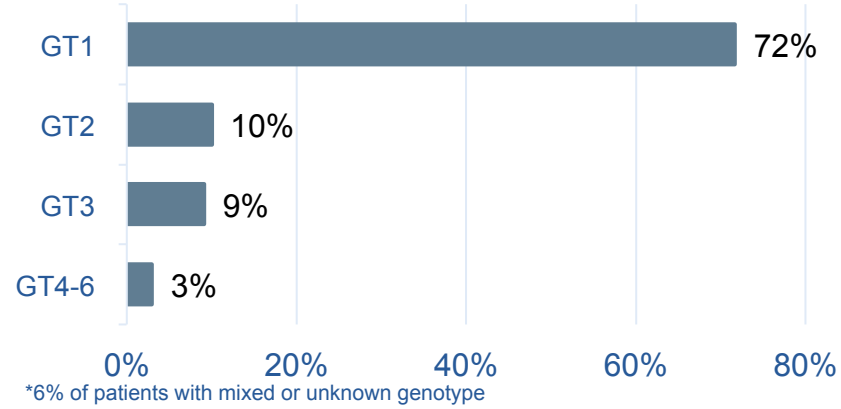
Patients by Practice Type



Patients by Fibrosis

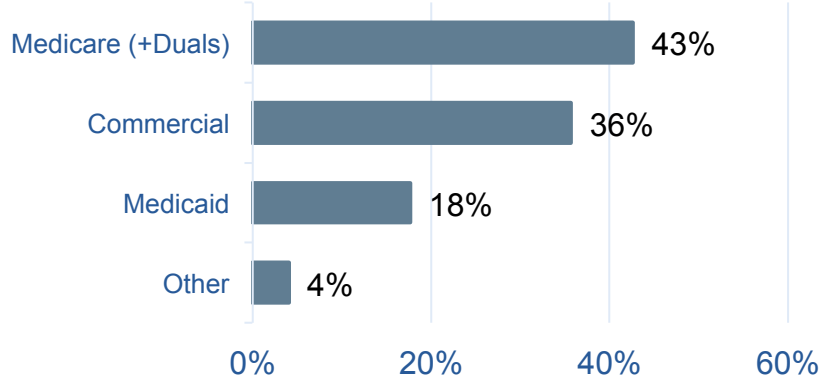


Patients by Genotype



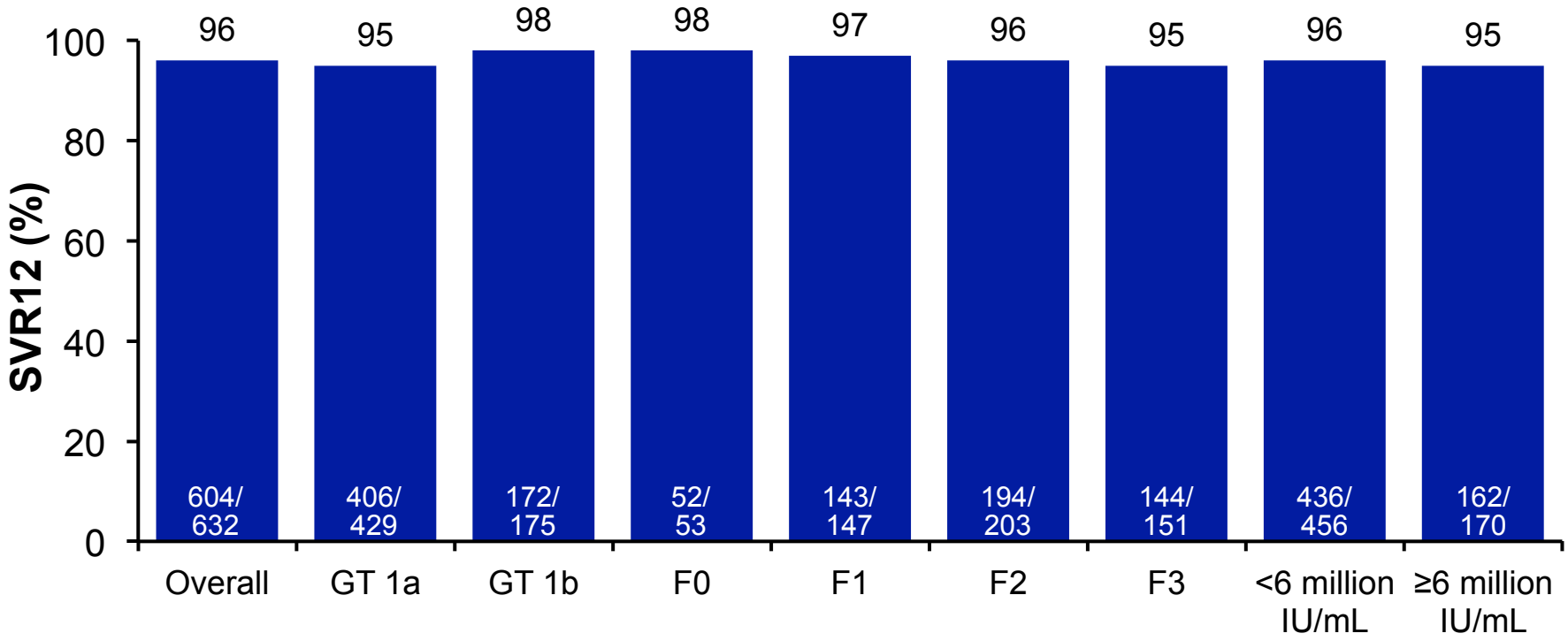
*6% of patients with mixed or unknown genotype

Patients by Primary Payer



Trio Health

Real-world data support the efficacy of LDV/SOF for 12 weeks in GT 1 patients



Curry MP, et al. AASLD 2015; Poster #1046

Trio Health

21 patients also received RBV, LDV/SOF + RBV may not be licensed to treat patients with GT 1 HCV in your country. Refer to your countries Prescribing Information for specific details.

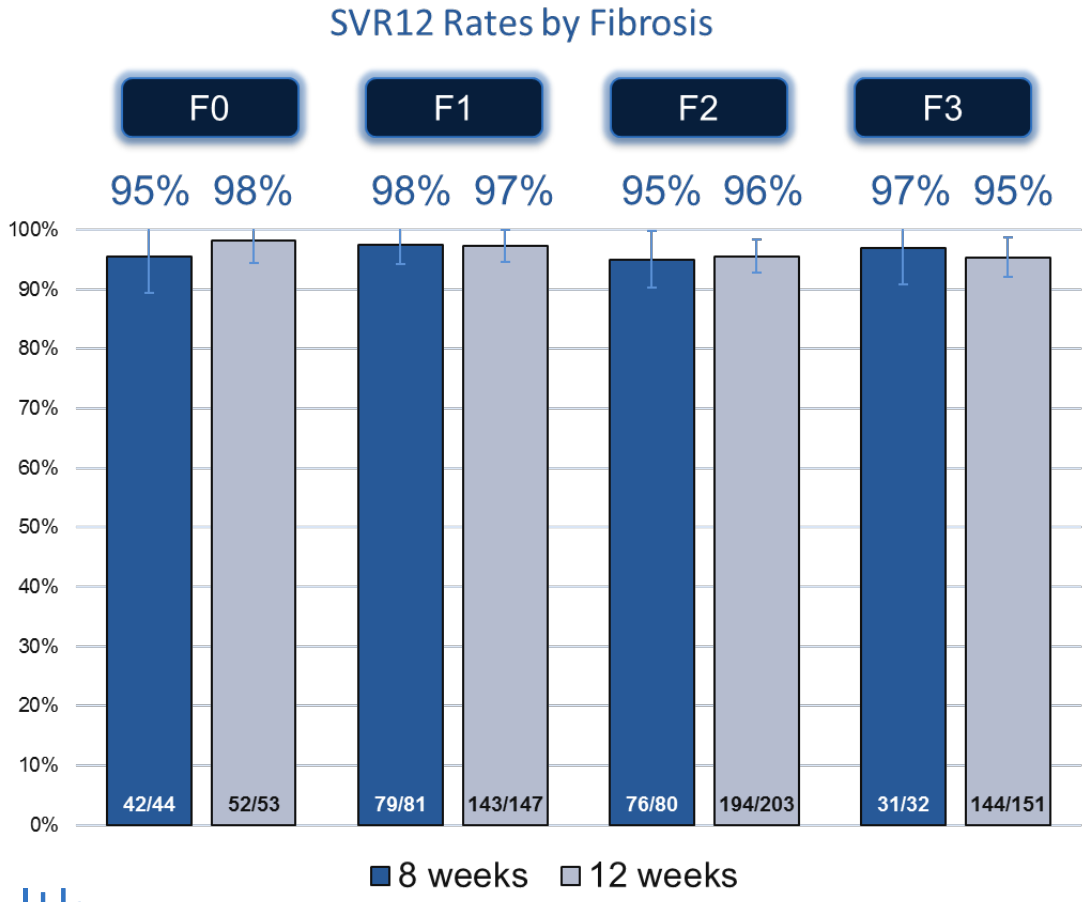
GT1, Treatment-naïve, non-cirrhotic patients can be treated with 8 weeks of therapy, 33% less drug

Effectiveness of 8 or 12 week LDV-SOF in Treatment-Naïve Patients with Non-Cirrhotic, Genotype 1 Hepatitis C: Real-World Experience from the TRIO Network

Michael P. Curry[1], Bruce Bacon[2], Douglas Dieterich[3], Steven L. Flamm[4], Lauren Guest[5], Kris V. Kowdley[6], Yoori Lee[5], Naoky Tsai[7], Zobair Younossi[8]

[1]Beth Israel Deaconess Medical Center, [2]Saint Louis University School of Medicine, [3]Mount Sinai School of Medicine, [4]Northwestern University Feinberg School of Medicine, [5]Trio Health Analytics, [6]Swedish Liver Center and Transplant Program, Swedish Medical Center, [7] Queens Medical Center, University of Hawaii, [8]Center for Liver Diseases, Department of Medicine, Inova Fairfax Hospital

Trio Health



Effect of Ethnicity on HCV Patient Outcomes and Access to Therapy in Era of All DAA Regimens: Real-World Experience From the Trio Network

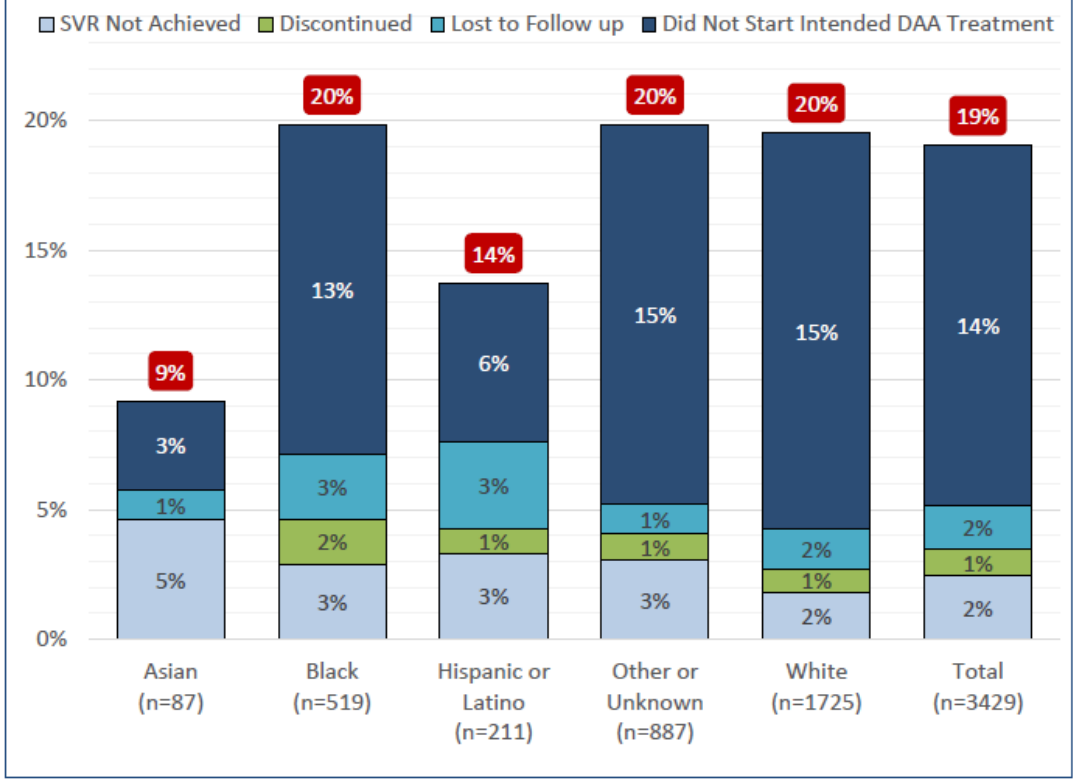
Kevin Korenblat[1], Bruce Bacon[2], Michael Curry[3],Douglas Dieterich[4], Steven L. Flamm[5], Kris V. Kowdley[6], Yoori Lee[7], Naoky Tsai[8], Zobair Younossi[9] and Nezam Afdhal[3]

[1]Washington University School of Medicine, [2]Saint Louis University School of Medicine, [3]Beth Israel Deaconess Medical Center, [4]Icahn School of Medicine at Mount Sinai, [5]Northwestern University Feinberg School of Medicine, [6]Liver Care Network, Swedish Medical Center, [7]Trio Health Analytics, [8]Queens Medical Center, University of Hawaii, [9]Center for Liver Diseases, Department of Medicine, Inova Fairfax Hospital

Trio Health

Types and Rates of Care Failure

Percentage of patients indicated for DAA therapy who failed to start treatment, received non-standard treatment, started treatment but discontinued or lost to follow up, or completed the intended treatment but did not achieve SVR.



Care failure includes those that discontinue therapy, do not achieve SVR12, are lost to follow up and those who do not start the prescribed therapy.

With the high efficacy of all-DAA treatment in real world use, the main driver of care failure is access to treatment.

HEPATOLOGY
December 2016, Volume 64, No.6

Evaluation of Proton Pump Inhibitor Use on Treatment Outcomes With Ledipasvir and Sofosbuvir in a Real-World Cohort Study

Elliot B. Tapper, Bruce R. Bacon, Michael P. Curry, Douglas T. Dieterich, Steven L. Flamm, Lauren E. Guest, Kris V. Kowdley, Yoori Lee, Naoky C. Tsai, Zobair M. Younossi, and Nezam H. Afdhal

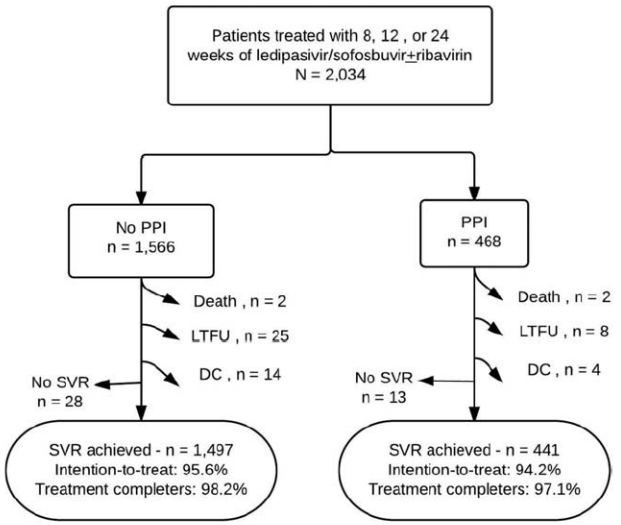


FIG. 1. Outcomes by proton pump inhibitor use. Abbreviations: DC, discontinued; LTFU, lost to follow-up.

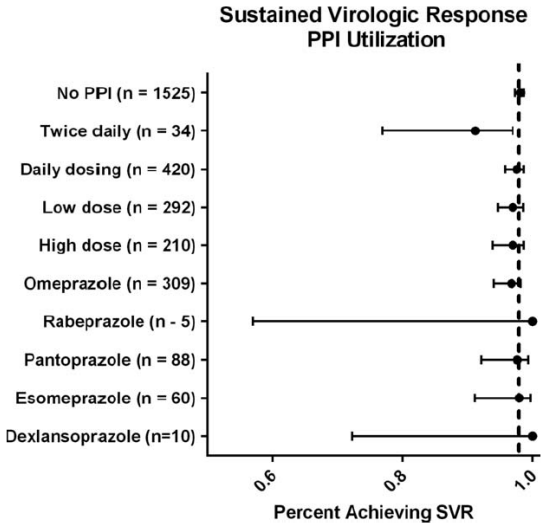
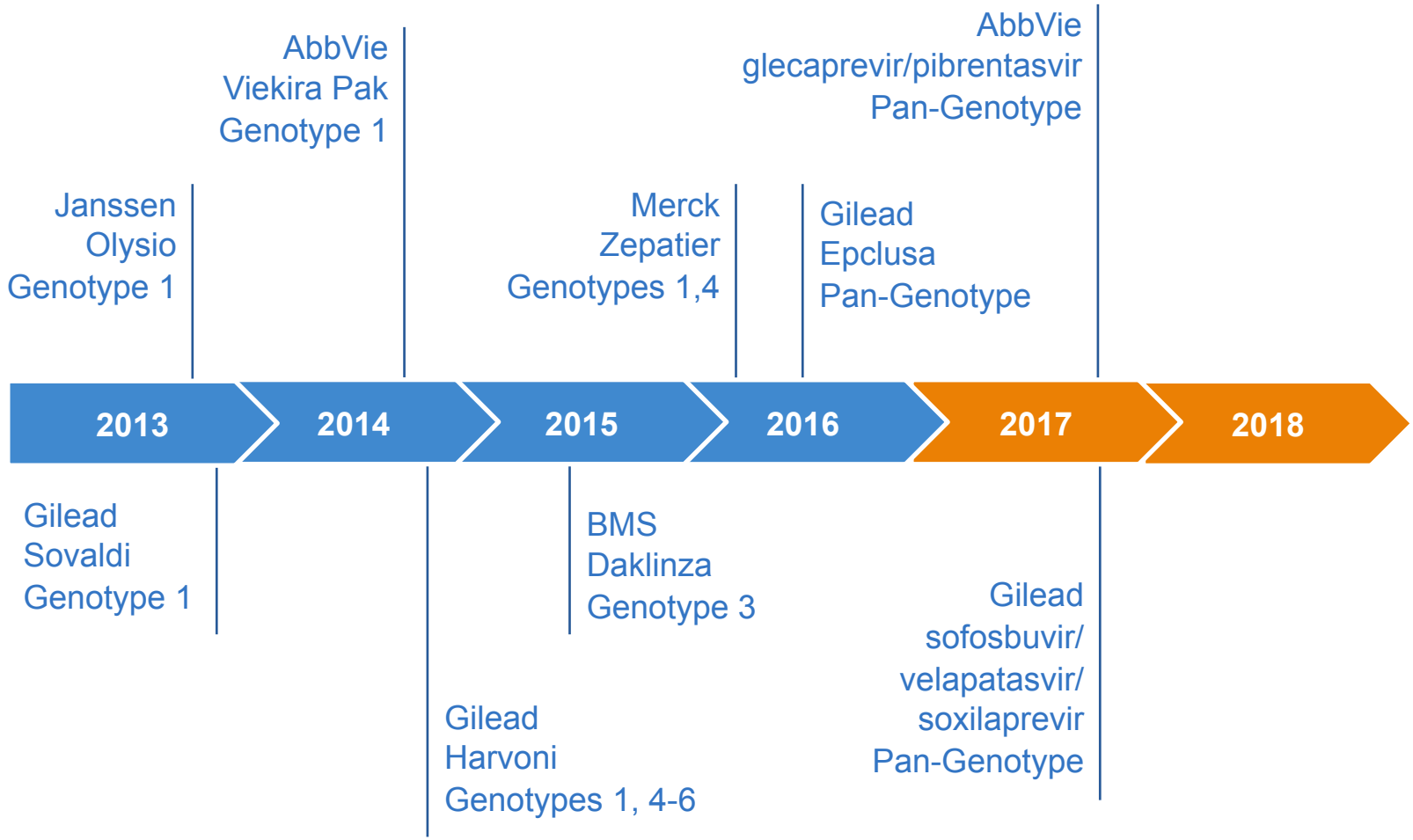


FIG. 2. Predictors of SVR: univariate associations. The dotted line indicates the overall sustained virological response rate (97.9%) in the per-protocol analysis.

"Neither low- nor high-dose PPI was associated with decreased SVR, although patients taking twice-daily PPI achieved a lower SVR12 rate…"

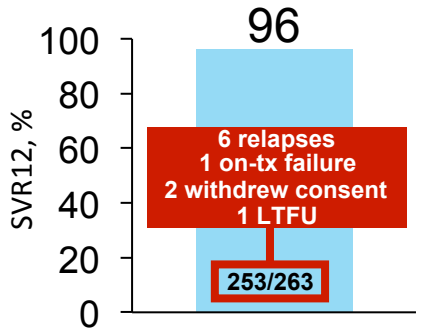
Conclusion: These data from a cohort of real-world patients receiving hepatitis C antibody therapy with LDF/SOF 6 RBV support the prescription labeling suggesting that patients take no more than low-dose (20-mg omeprazole equivalents) PPI daily.

Past and Near Future

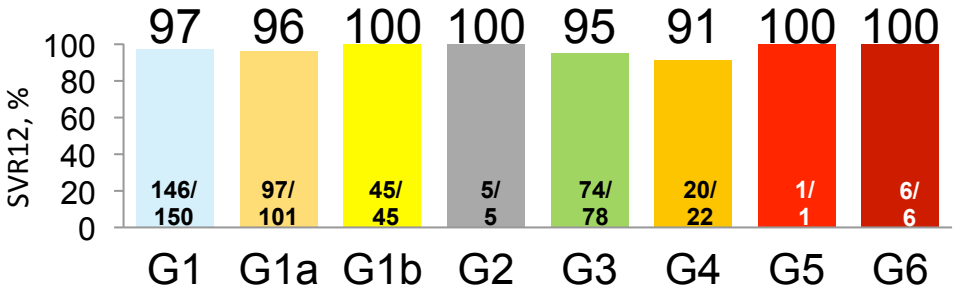


SOF/VEL/VOX (Gilead) for 12 weeks as a salvage regimen in NS5A inhibitor-experienced G1–6 patients: The Phase 3 POLARIS-1 study

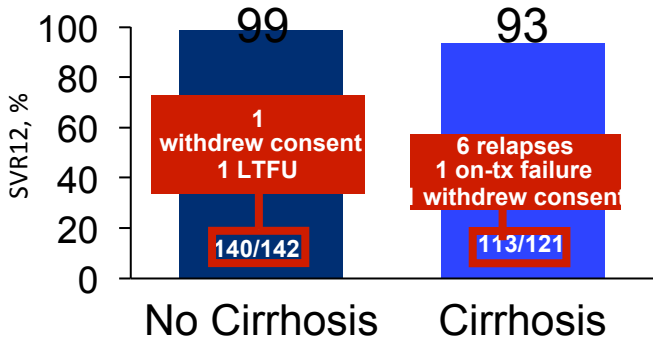
(i) Overall SVR12 (ITT)



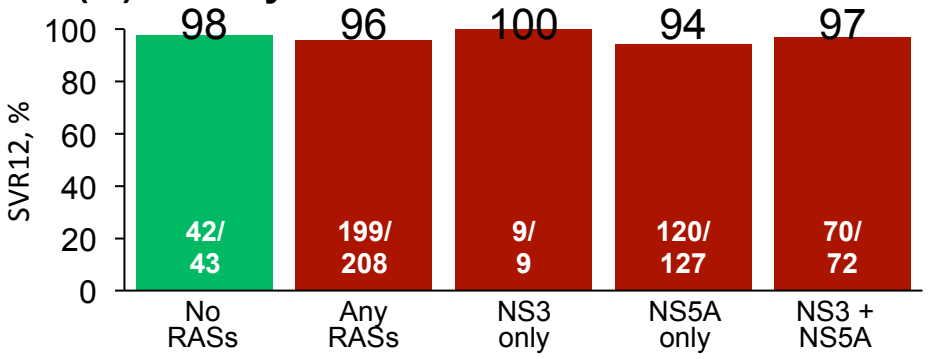
(ii) SVR by genotype



(iii) SVR by cirrhosis



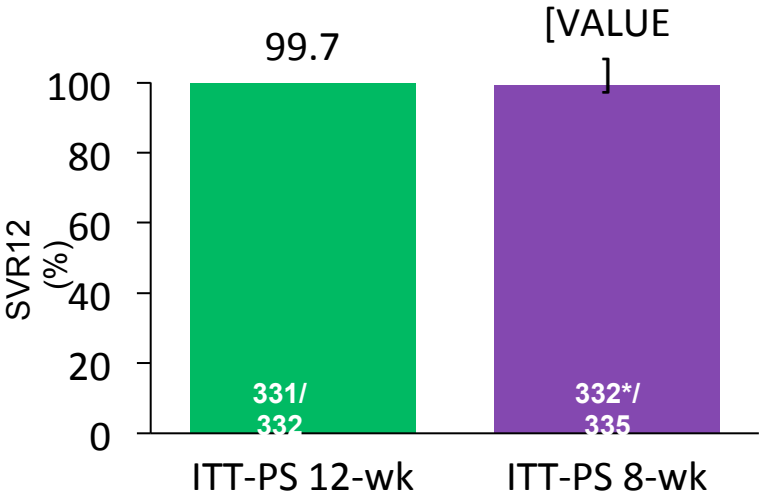
(iv) SVR by NS5A RASs



- **All virologic failures had cirrhosis**

Bourlière M, et al. AASLD 2016, Boston. #194

ENDURANCE-1: Efficacy and safety of 8- vs 12-week treatment with glecaprevir/pibrentasvir (AbbVie) in G1 patients



*1 patient with G1a infection in the 8-week treatment arm experienced on-treatment virologic failure at Day 29

ITT-PS: ITT population, excluding HIV coinfected *and* SOF-experienced patients

Event, n (%)	G/P 8 weeks	G/P 12 weeks
Any AE	216 (62)	234 (66)
AEs leading to study drug d/c	0	1 (0.3)†
Serious AEs	5 (1)	4 (1)‡
Death	0	1 (0.3)§
AEs occurring in ≥10% total pts		
Headache	68 (19)	62 (18)
Fatigue	31 (9)	43 (12)
Lab abnormalities		
AST		
Grade ≥3 (>5 × ULN)	0	1 (0.3)
Grade 4	0	0
ALT		
Grade ≥3 (>5 × ULN)	0	0
Grade 4	0	0
Total bilirubin (3–5 × ULN)	2 (0.6)	1 (0.3)

possibility of being related to DAAs

‡ SAEs: Pneumonia aspiration, atrial fibrillation, angina unstable, radius fracture, transient ischemic attack, and IBS. Bronchitis, uterine myoma, suicide attempt (all post-treatment)

§Female pt died in post-treatment period (unknown causes unrelated to study drug, autopsy pending)

Zeuzem S, et al. AASLD 2016, Boston. #253

Conclusions: Real-world Evidence

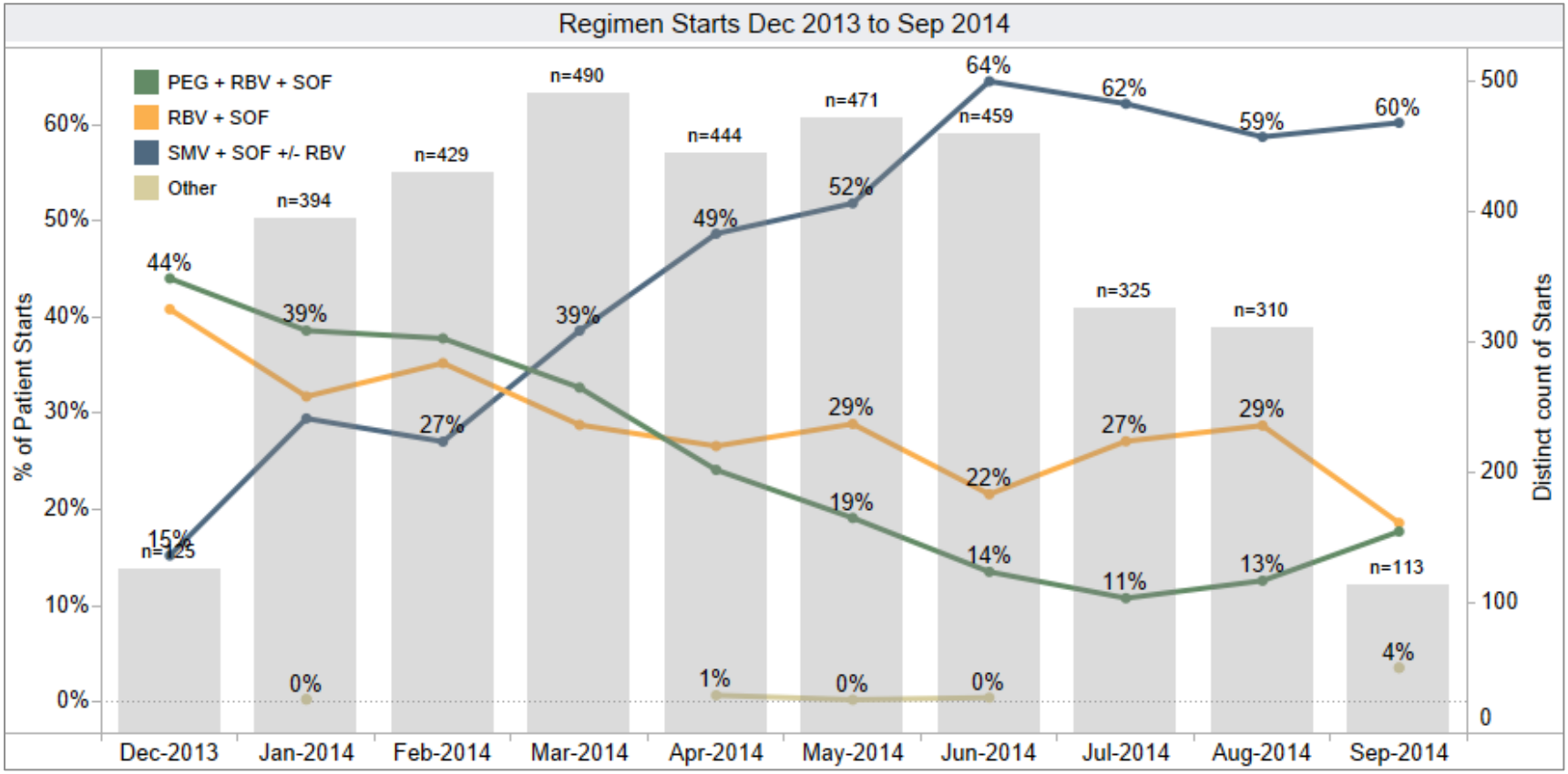
- Trio Health Network is representative of US real-life treatment for HCV
- Trio's real-world data confirms efficacy and safety of DAA treatment
- All ethnicities and patient populations can be treated with >95% cure rates
- New treatments will continue to reduce treatment duration and provide alternatives for any patients who fail 1st line DAAs

Access to Care

Nezam Afdhal, MD

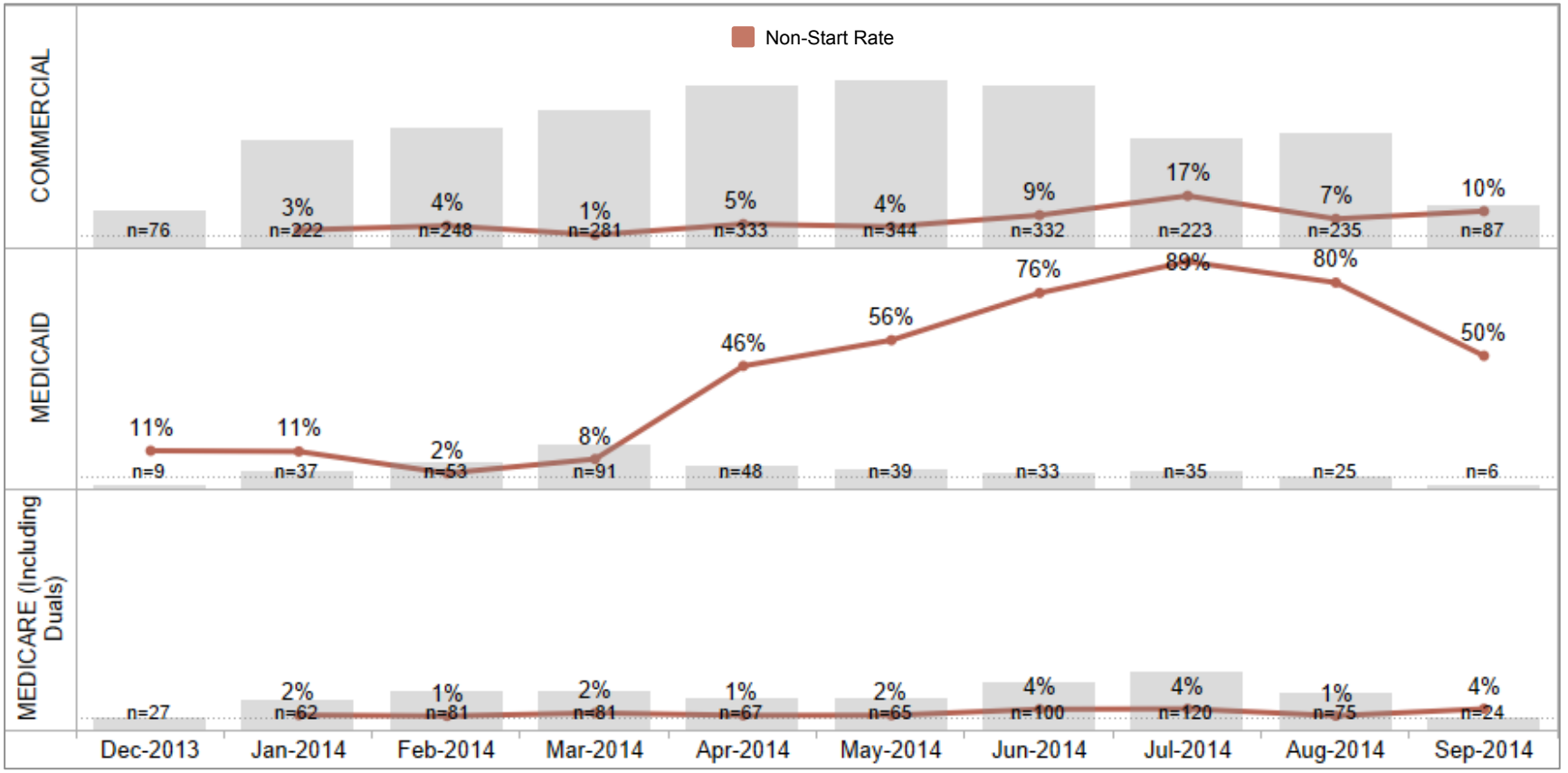
2014:
Access to care following FDA approval of Sovaldi for HCV

With cure rates approaching 90% in clinical trials, Sovaldi (SOF) rapidly dominated the market after FDA approval in Dec 2013.



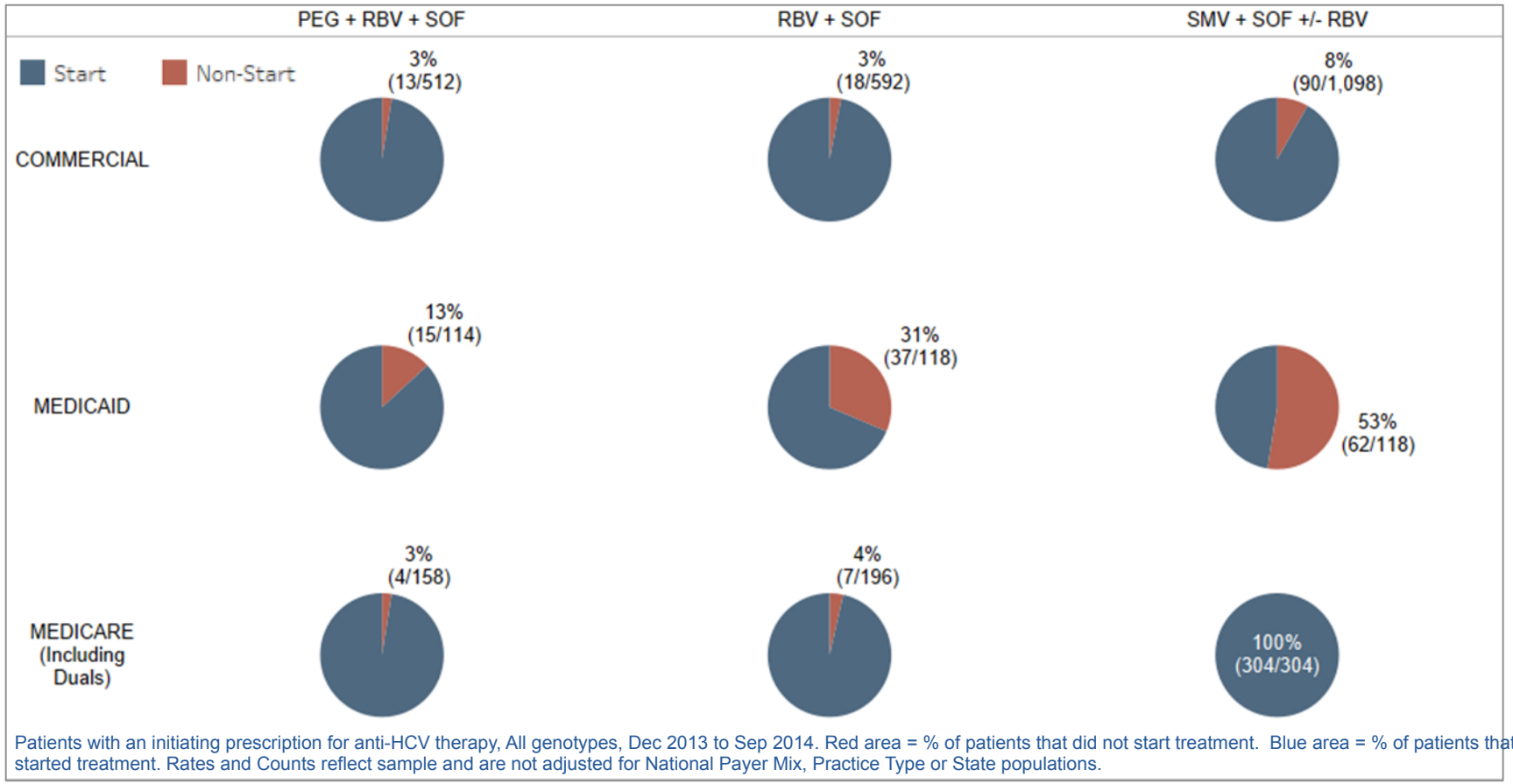
Regimen Starts, All genotypes, Dec 2013 to Sep 2014. Sovaldi (SOF) FDA approved Dec 2013, Olysio (SMV) FDA approved Nov 2013. peginterferon (PEG), ribavirin (RBV). Gray Bars = # of patients that started therapy. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

Reduced access to care initiated with Medicaid in Apr 2014, five months after SOF approval.



Patients with an initiating prescription for anti-HCV therapy, All genotypes, Dec 2013 to Sep 2014. Gray Bars = # of patients. Red lines = % of patients that did not start treatment. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

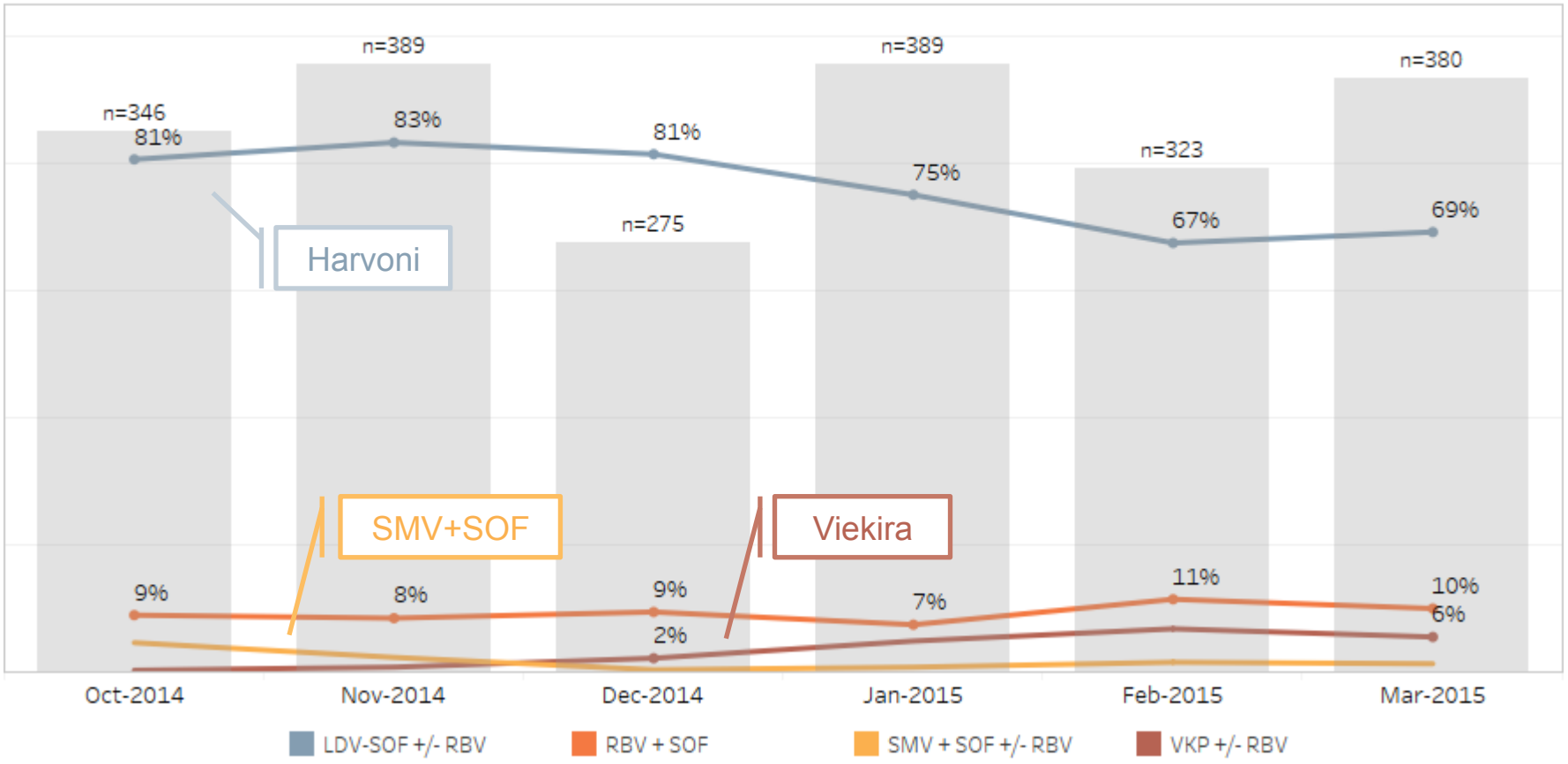
Medicaid access challenges were inflated for the more expensive 24 week RBV+SOF and 12 week SMV+SOF regimens.



Patients with an initiating prescription for anti-HCV therapy, All genotypes, Dec 2013 to Sep 2014. Red area = % of patients that did not start treatment. Blue area = % of patients that started treatment. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

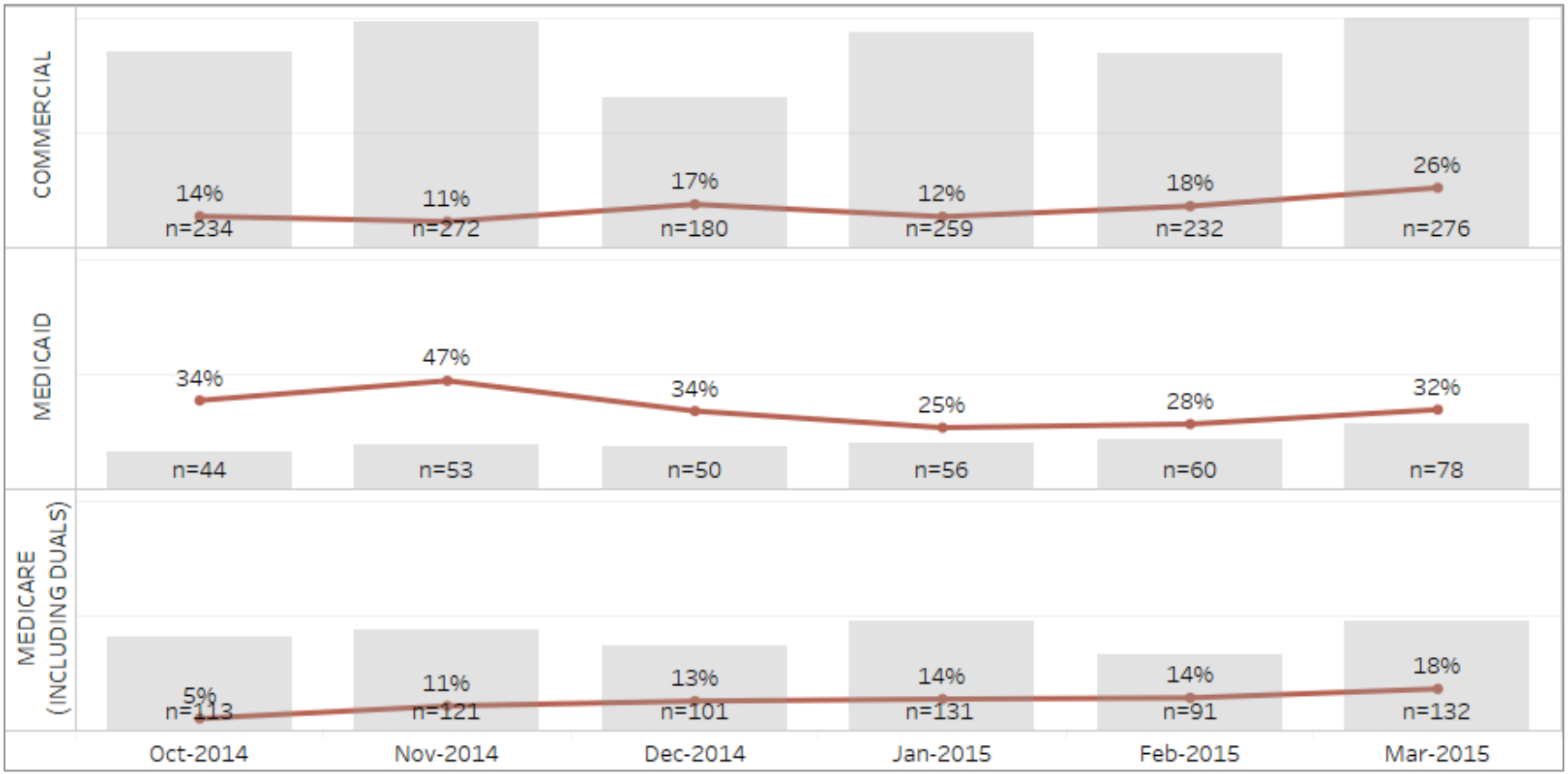
2015:
Access to care following FDA approval of Harvoni and Viekira Pak for HCV

The prior standard of care SMV+SOF was displaced with FDA approval of Harvoni (Oct 2014), which in turn was impacted (~15%) after Viekira approval Dec 2014.



Regimen Starts, All genotypes, Oct 2014 to Mar 2015. Harvoni (LDV-SOF) FDA approved Oct 2014. Viekira (VKP) FDA approved Dec 2014. Gray Bars = # of patients. Lines are % market share. ribavirin (RBV), SMV+SOF = Olysio+Sovaldi. "Other regimens" include regimens with small market share (PEG + RBV + SMV, PEG + RBV + SOF and non-standard therapies). Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

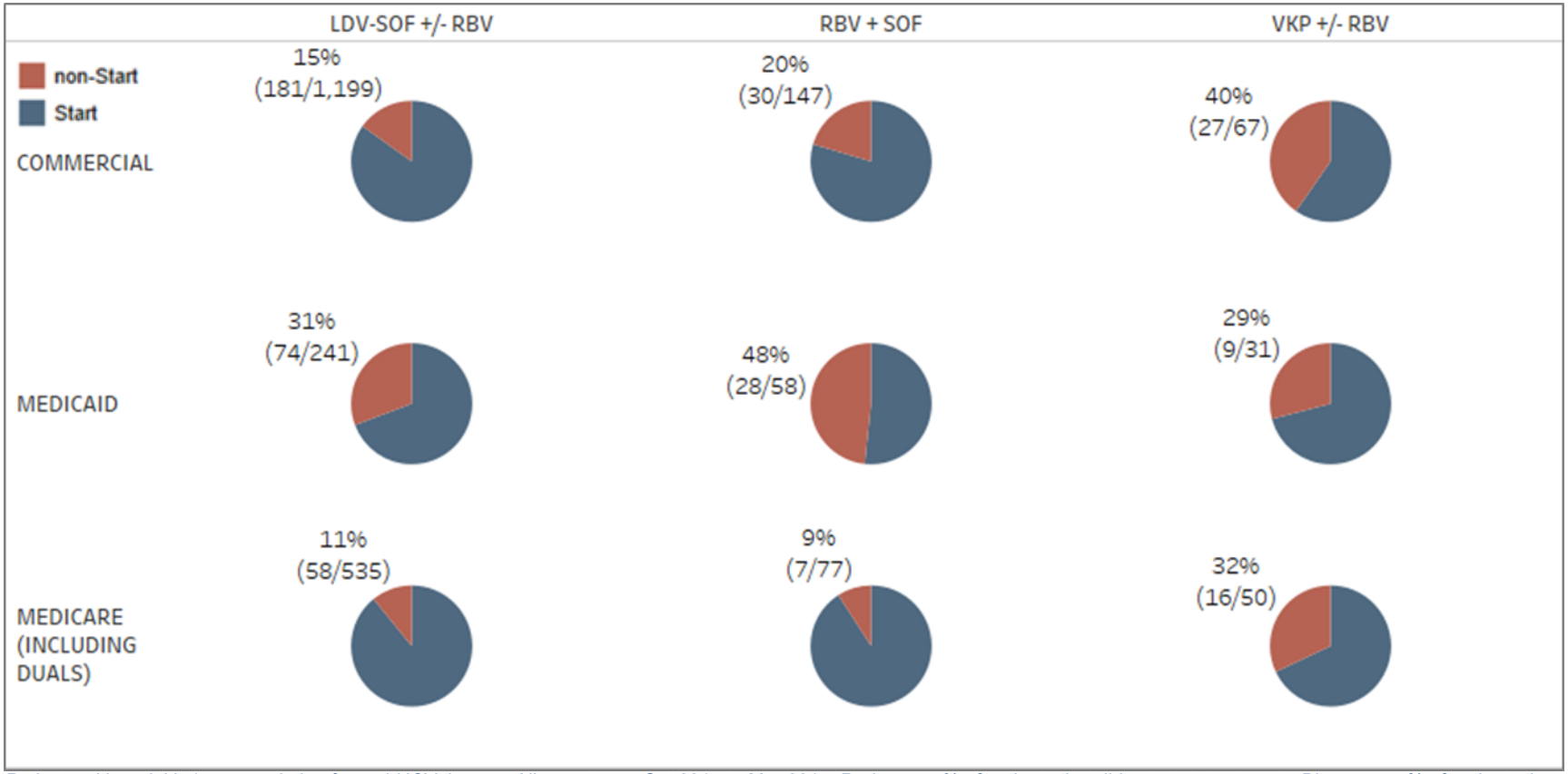
Following the launch of Harvoni, access to care was suppressed to a greater extent than observed after Sovaldi approval.



Patients with an initiating prescription for anti-HCV therapy, All genotypes, Oct 2014 to Mar 2015. Gray Bars = # of patients. Red lines = % of patients that did not start treatment. Blue lines = % of patients that did start treatment.

Non-Start

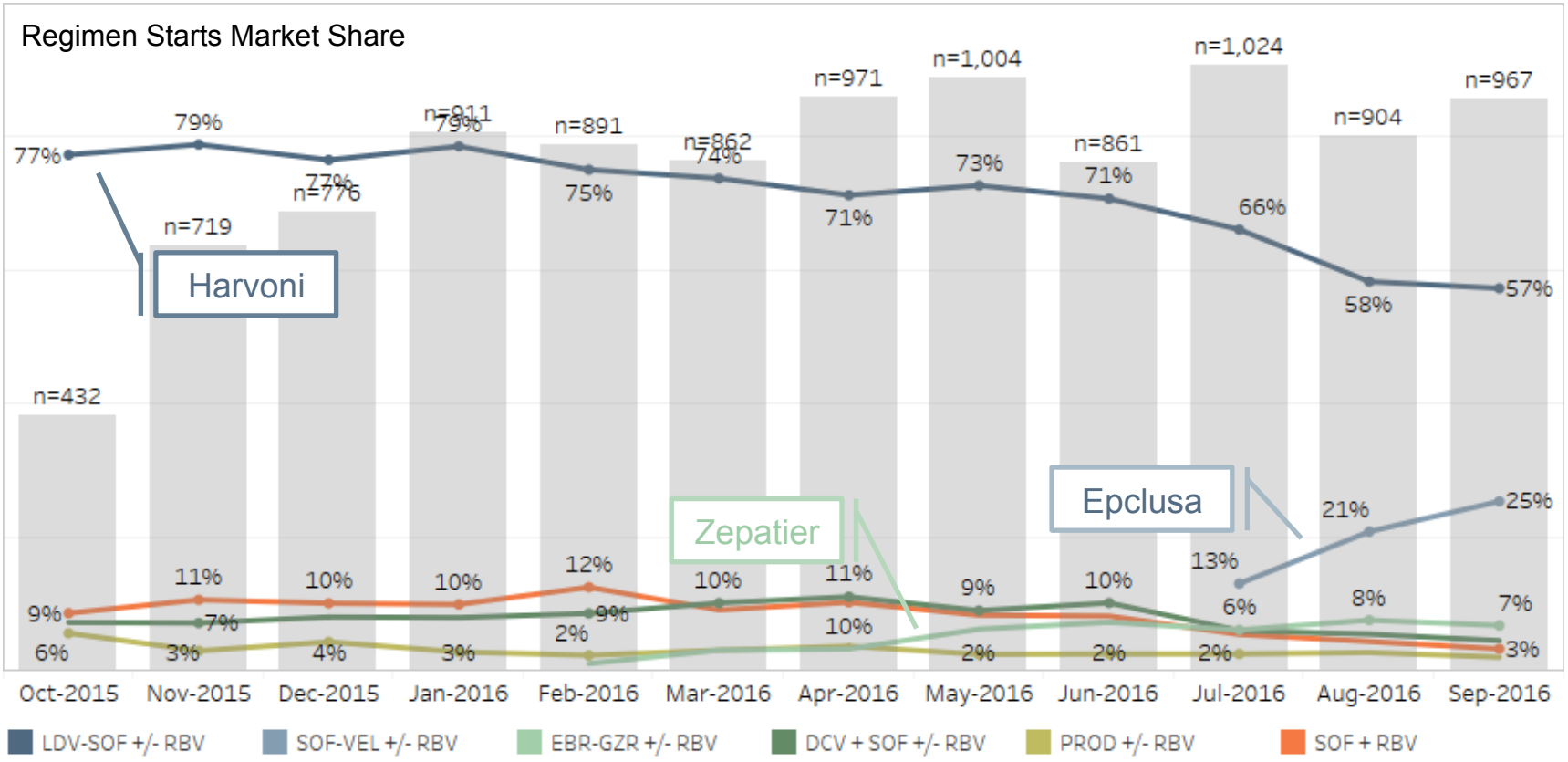
Access to specific regimens may have been influenced by pricing, pricing agreements and other non-clinical forces.



Patients with an initiating prescription for anti-HCV therapy, All genotypes, Oct 2014 to Mar 2015. Red area = % of patients that did not start treatment. Blue area = % of patients that started treatment. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

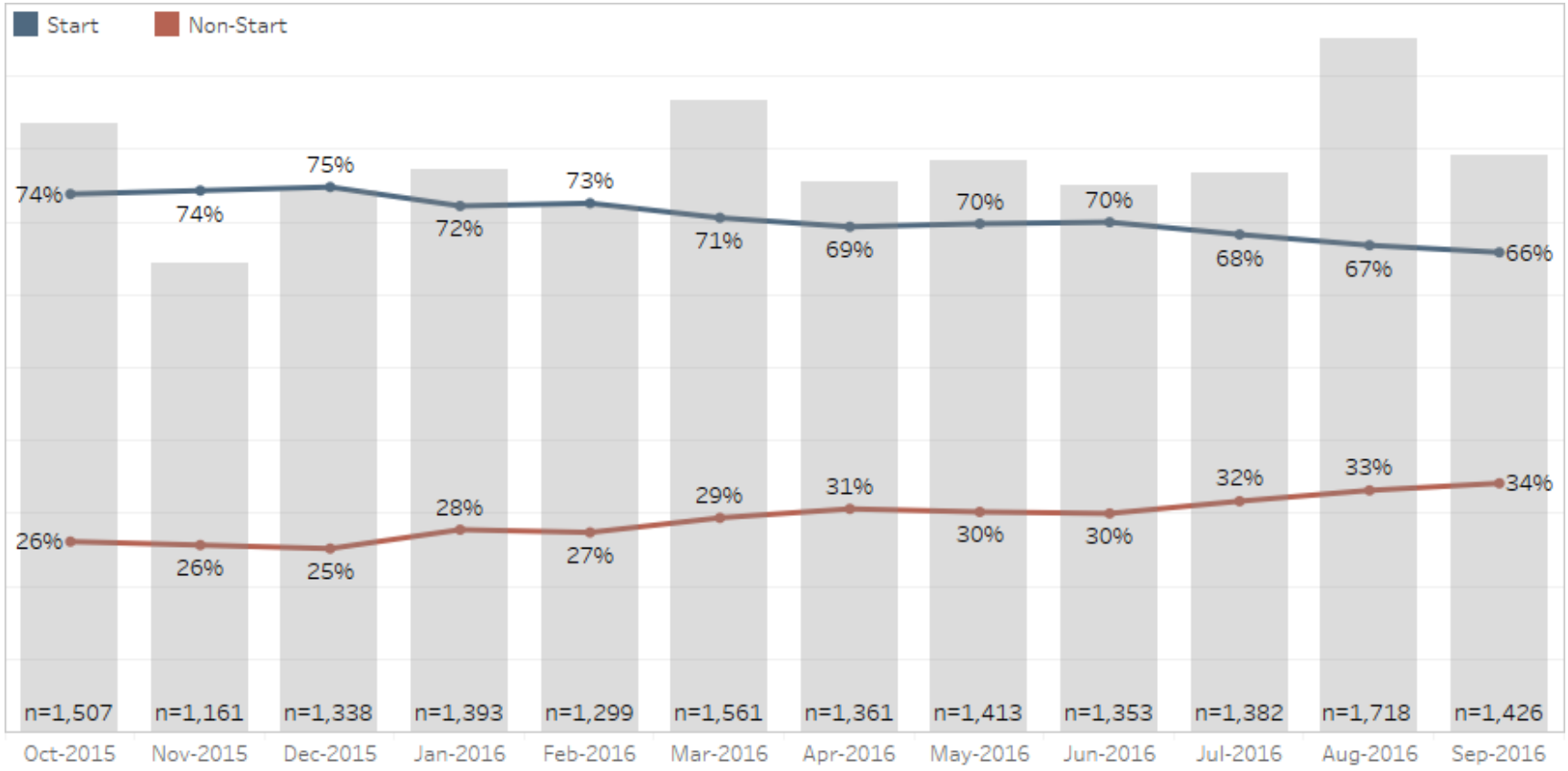
2016:
Access to care ….

The 2016 landscape was dominated by Harvoni, despite FDA approval of Zepatier (Jan 2016) and Epclusa (Jul 2016).



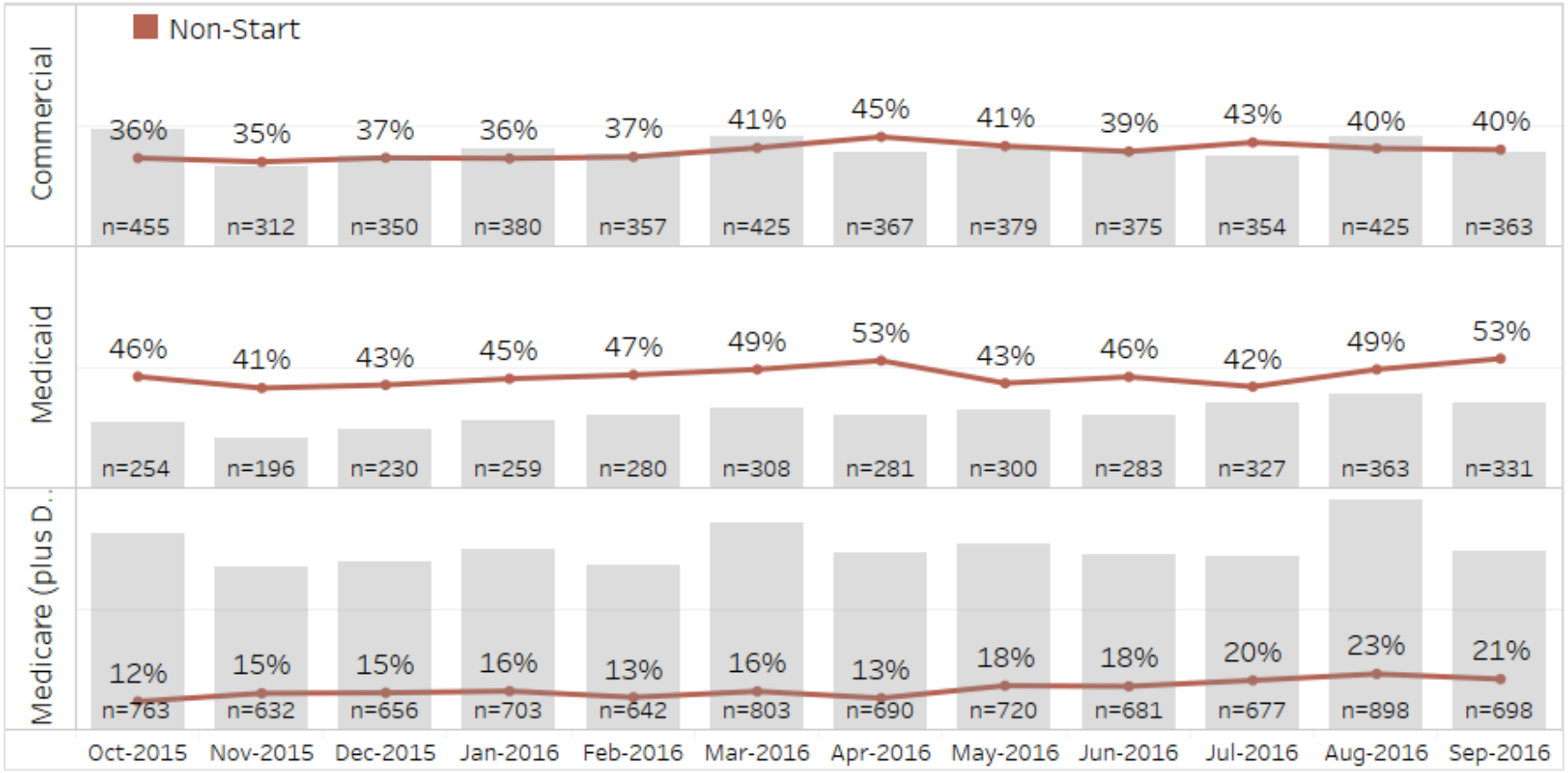
Regimen Starts, all Genotypes. Oct 2015 to Sep 2016. Gray Bars = # of patients that started therapy. Lines are % market share. = Epclusa (SOF-VEL) FDA approved Jun 2016, Zepatier (EBR-GZR) FDA approved Jan 2016. DCV=Daklinza. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

The number of patients with an initiating prescription remained largely flat though non-start rates steadily climbed.



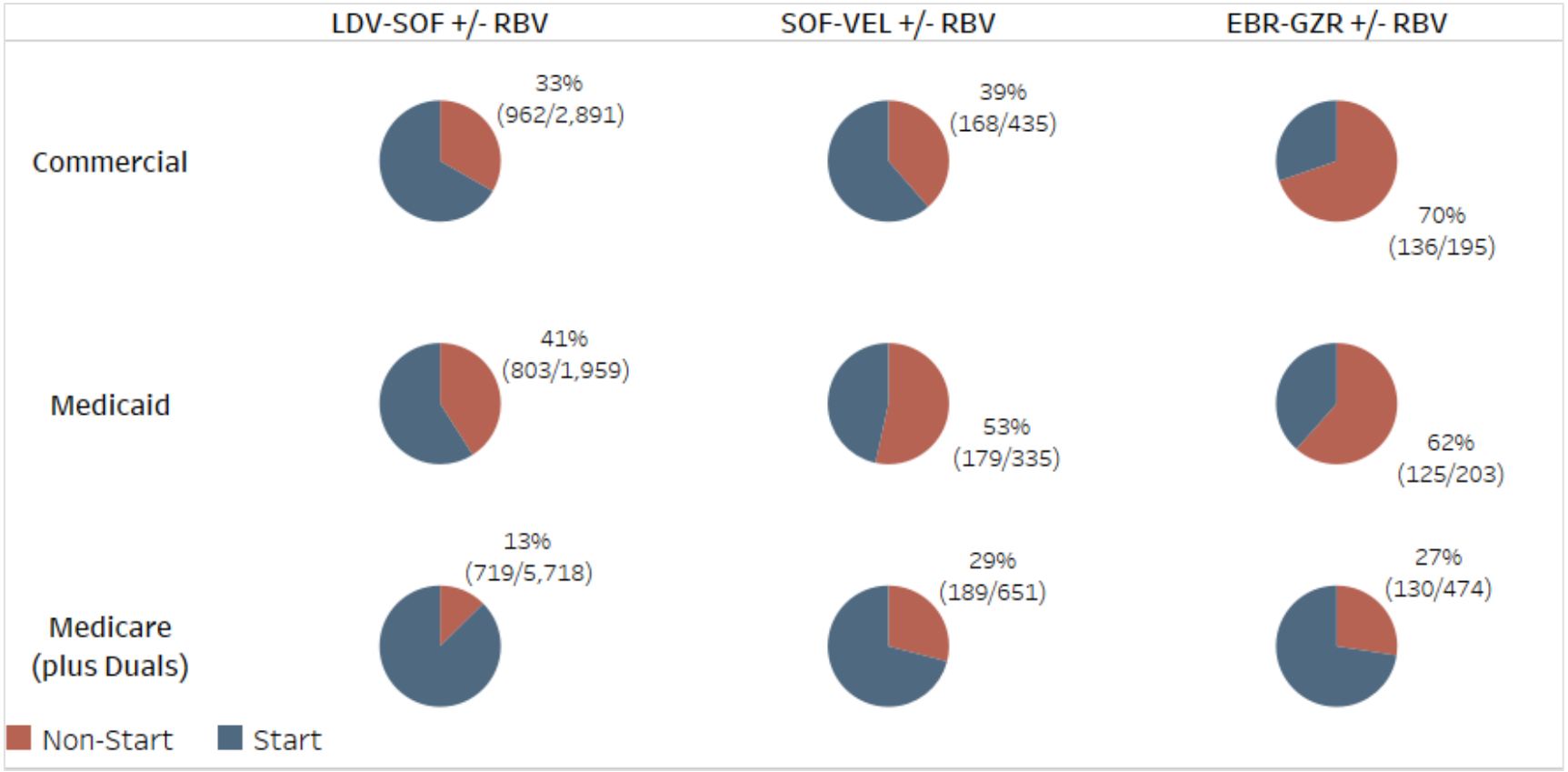
Patients with an initiating prescription for anti-HCV therapy, All genotypes, Oct 2015 to Sep 2016. Gray Bars = # of patients. Red lines = % of patients that did not start treatment. Blue lines = % of patients that did start treatment. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

The upward trend in non-starts was driven by changes in Commercial and Medicare groups.



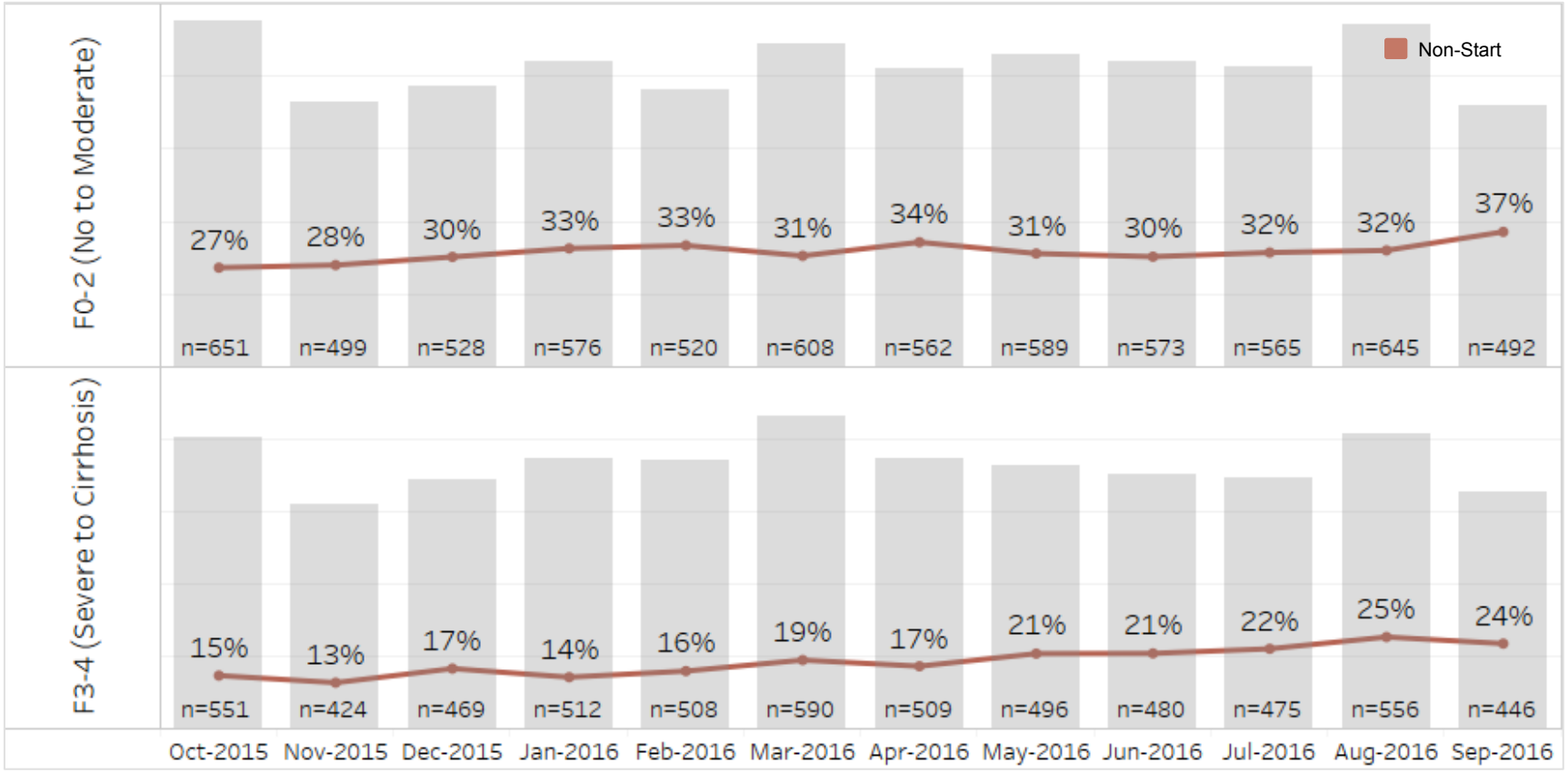
Patients with an initiating prescription for anti-HCV therapy, All genotypes, Oct 2015 to Sep 2016. Gray Bars = # of patients. Red lines = % of patients that did not start treatment. Blue lines = % of patients that did start treatment. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

Non-start rates for newer therapies Epclusa and Zepatier exceeded that observed for Harvoni.



Patients with an initiating prescription for anti-HCV therapy, All genotypes, Oct 2015 to Sep 2016. Blue area = Starts, Red area = non-starts. LDV-SOF = Harvoni, SOF-VEL = Epclusa, EBR-GZR = Zepatier. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

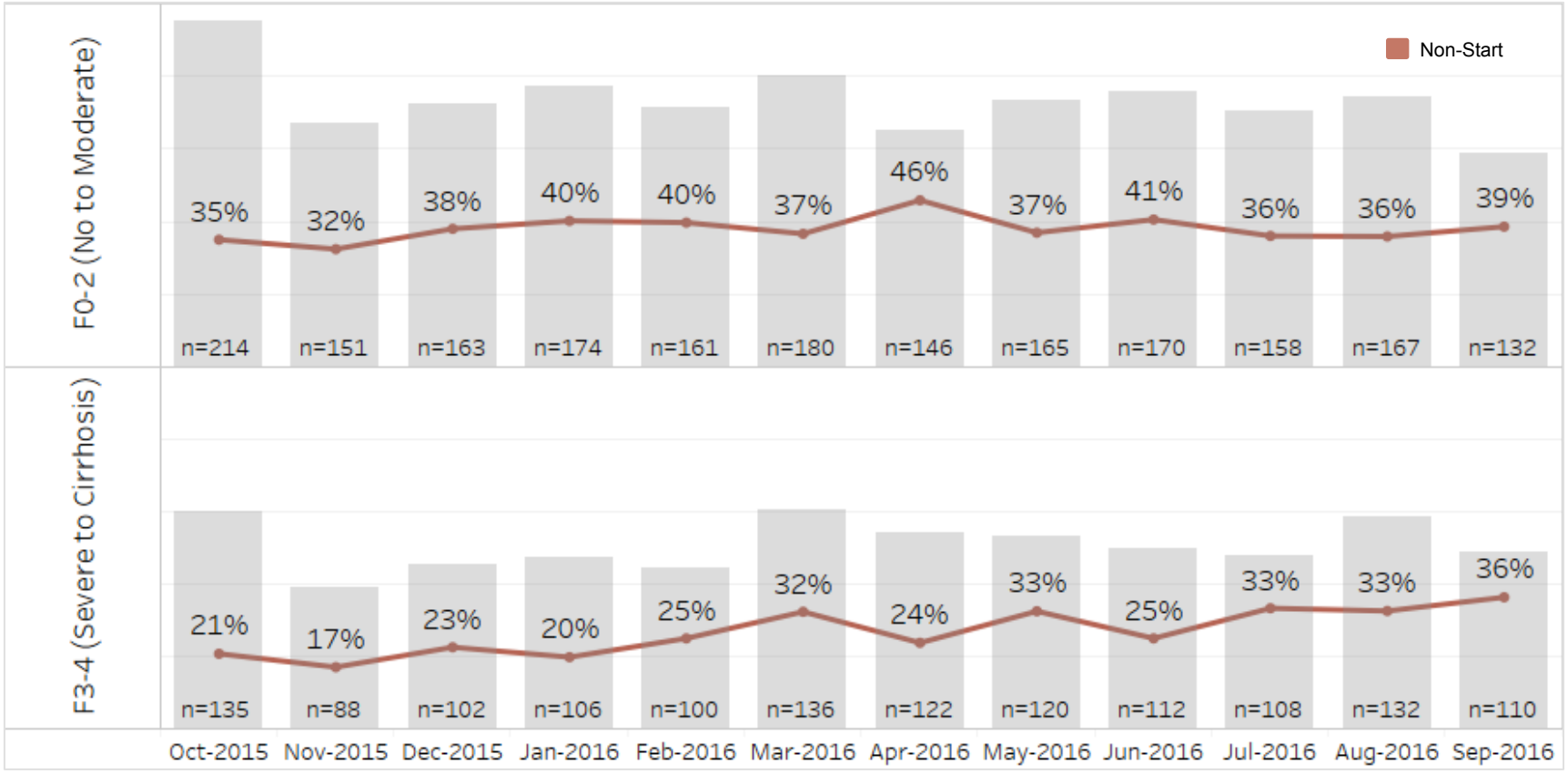
The increasing non-start trend was observed regardless of disease severity.



Limited to patients with known Fibrosis Score (line charts). Oct 2015 to Sep 2016. Gray Bars = # of patients with an initiating prescription. Red lines = % of patients that did not start therapy. Blue lines = % of patients that started therapy. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

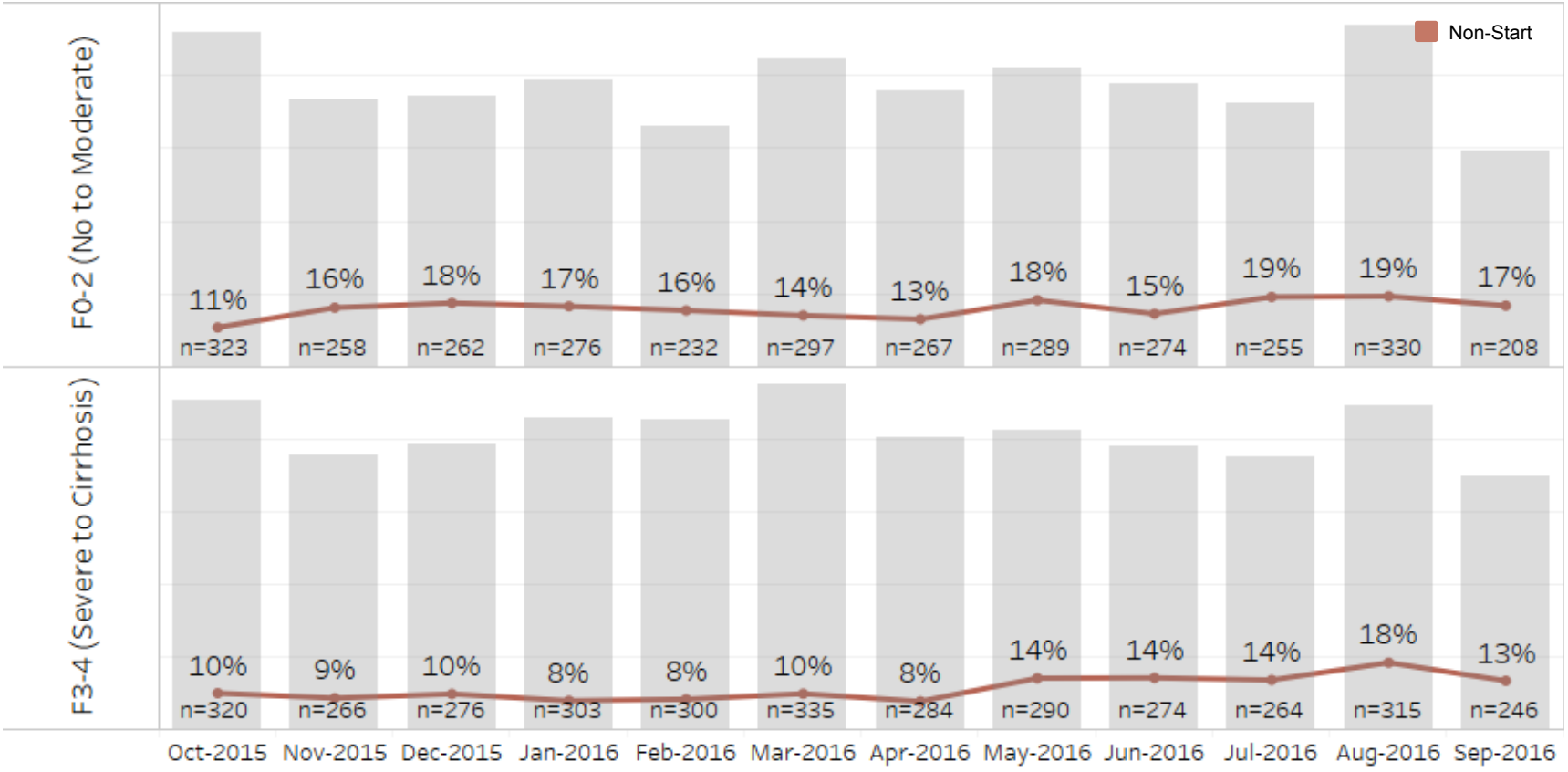
Trio Health

Under Commercial coverage, a worsening trend was realized for those with severe fibrosis to cirrhotic disease.



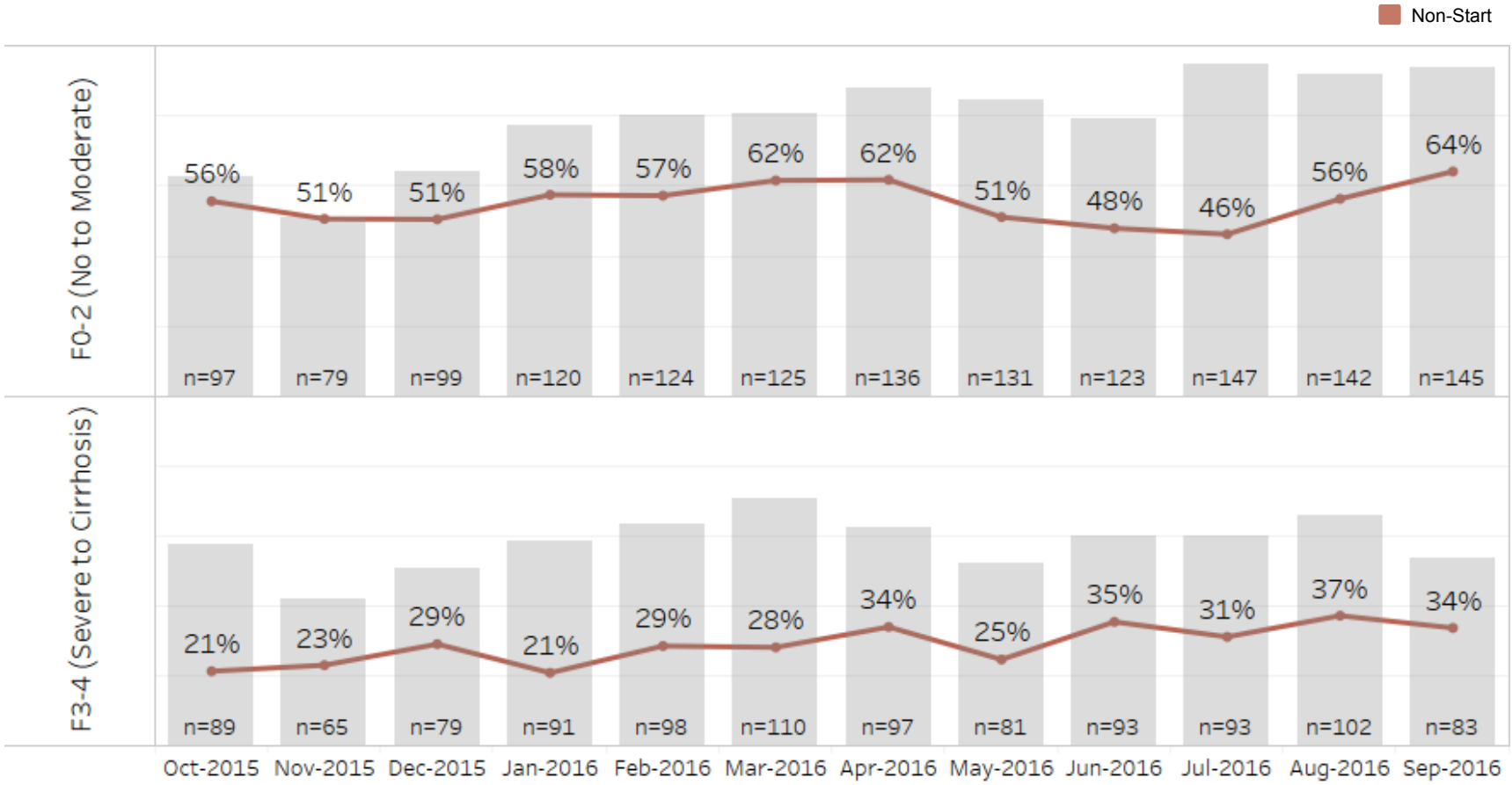
Oct 2015 to Sep 2016 patients with an initiating prescription. Limited to patients with Commercial coverage, known Fibrosis Score (line charts) and Prior Treatment status (table). Gray Bars = # of patients with an initiating prescription. Red lines = % of patients that did not start therapy. Blue lines = % of patients that started therapy. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

For patients with Medicare coverage, likelihood of starting therapy slightly favored patients with severe fibrosis to cirrhotic disease



Oct 2015 to Sep 2016 patients with an initiating prescription. Limited to patients with Medicare coverage, known Fibrosis Score (line charts). Gray Bars = # of patients with an initiating prescription. Red lines = % of patients that did not start therapy. Blue lines = % of patients that started therapy. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

Under Medicaid, patients with FS 0-2 were more likely to NOT start therapy.



Oct 2015 to Sep 2016 patients with an initiating prescription. Limited to patients with Medicare coverage, known Fibrosis Score (line charts). Gray Bars = # of patients with an initiating prescription. Red lines = % of patients that did not start therapy. Blue lines = % of patients that started therapy. Rates and Counts reflect sample and are not adjusted for National Payer Mix, Practice Type or State populations.

Trio Health

http://nvhr.org/hepatitis-c-state-medicaid-access accessed Mar 01 2017

Hepatitis C:

The State of Medicaid Access

Preliminary Findings: National Summary Report

November 14, 2016

NVHR National Viral Hepatitis Roundtable

Center for Health Law & Policy Innovation Harvard Law School

Prescriber Requirements

Chart 5: Comparing 2014 and 2016 Medicaid FFS Prescriber Requirements

Category	2014 FFS Prescriber Restriction	States 2014 FFS Prescriber Restriction	2016 FFS Prescriber Restriction	States 2016 FFS Prescriber Restriction
No Restrictions	0 (0%)[19]	None	2 (6%)[20]	Connecticut, Massachusetts
By or in Consultation with Specialist	15 (52%)	Arizona, California, Colorado, Connecticut, Idaho, Illinois, Kentucky, Louisiana, Mississippi, Oklahoma, Oregon, South Dakota, Utah, Virginia, West Virginia	23 (64%)	Arizona, Colorado, District of Columbia, Florida, Hawaii, Idaho, Illinois, Indiana, Kansas, Maine, Michigan, Minnesota, Mississippi, Montana, New York, North Dakota, Oklahoma, Oregon, Utah, Virginia, Washington, West Virginia, Wisconsin
Specialist Must Prescribe	14 (48%)	Florida, Indiana, Iowa, Maine, Maryland, Montana, New Hampshire, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Washington, Wisconsin	11 (31%)	Iowa, Louisiana, Maryland, New Jersey, Ohio, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Vermont
Restrictions Unknown	22	Alabama, Alaska, Arkansas, Delaware, District of Columbia, Georgia, Hawaii, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, South Carolina, Vermont, Texas, Wyoming	15	Alabama, Alaska, Arkansas, California, Delaware, Georgia, Kentucky, Missouri, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, South Carolina, Wyoming

Liver Disease Requirements

Chart 2: Comparing 2016 Medicaid MCO and FFS Liver Disease Requirements

Category	MCO Liver Disease Restriction	States MCO Liver Disease Restriction	FFS Liver Disease Restriction	States FFS Liver Disease Restriction
No Restrictions	2 (5%)[10]	Florida, Massachusetts,	5 (11%)	Connecticut, Florida, Massachusetts, New York, Wyoming
Chronic HCV	1 (2%)	Washington	4 (9%)	Arizona, Georgia, Nevada, Washington
Chronic HCV-F3	2 (5%)	Illinois, New Hampshire	N/A	N/A
Chronic HCV-F4	1 (2%)	Indiana	N/A	N/A
F1	0 (0%)		2 (5%)	North Dakota, Utah
F1-F3	1 (2%)	Minnesota	N/A	N/A
F2	7 (16%)	California, Missouri, New Mexico, North Carolina, Pennsylvania, Tennessee, Wisconsin	10 (23%)	Alaska, California, District of Columbia, Idaho, Maryland, North Carolina, Oklahoma, Pennsylvania, Virginia, Wisconsin
F2-F3	2 (5%)	District of Columbia, Maryland	N/A	N/A
F3	26 (62%)	Arizona, Arkansas, Colorado, Delaware, Georgia, Hawaii,[11] Iowa, Kansas, Kentucky, Louisiana, Michigan, Montana, Nebraska, Nevada, New Jersey, New York, Ohio, Oregon, Rhode Island, South Carolina, South Dakota, Texas, Utah, Vermont, Virginia, West Virginia	22 (50%)	Arkansas, Colorado, Delaware, Hawaii, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, Ohio, Oregon, Rhode Island, South Carolina, South Dakota, Texas, Vermont, West Virginia
F4	0 (0%)	None	1 (2%)	Illinois
No MCO Program	5	Alaska, Connecticut, Idaho, Maine, Wyoming	N/A	N/A
Restrictions Unknown	4	Alabama, Mississippi, North Dakota, Oklahoma	7	Alabama, Kentucky, Maine, Mississippi, New Hampshire, New Mexico, Tennessee

Sobriety Requirements

Chart 4: Comparing 2016 Medicaid MCO and FFS Sobriety Requirements

Category	MCO Sobriety Restriction	States MCO Sobriety Restriction	FFS Sobriety Restriction	States FFS Sobriety Restriction
No Restrictions	0 (0%)[17]	None	4 (10%)	Connecticut, District of Columbia, Massachusetts, Wyoming
Screening and Counseling	8 (19%)	Delaware, Iowa, Massachusetts, Missouri, New Mexico, North Carolina, Pennsylvania, South Carolina	8 (20%)	Delaware, Georgia, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Virginia
Abstain for 1 Month	2 (5%)	Florida, Texas	2 (5%)	Florida, Texas
Abstain for 3 Months	3 (7%)	Hawaii, Nebraska, West Virginia	6 (15%)	Alaska, Hawaii, Iowa, Missouri, New Jersey, West Virginia
Abstain for 6 Months	15 (36%)	Alabama, Arizona, Colorado, Kansas, Minnesota, Mississippi, Montana, New Jersey, New Hampshire, North Dakota, Rhode Island, South Dakota, Tennessee, Vermont, Wisconsin	18 (44%)	Alabama, Arizona, Arkansas, Colorado, Idaho, Kansas, Maine, Maryland, Minnesota, Mississippi, Montana, Nebraska, Ohio, Oklahoma, Rhode Island, South Dakota, Vermont, Wisconsin
Abstain for 12 Months	0 (0%)		3 (7%)	Illinois, Louisiana, North Dakota
Varied[18]	14 (33%)	District of Columbia, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Nevada, New York, Ohio, Oregon, Utah, Virginia	N/A	N/A
No MCO Program	5	Alaska, Connecticut, Idaho, Maine, Wyoming	N/A	N/A

Trio Health

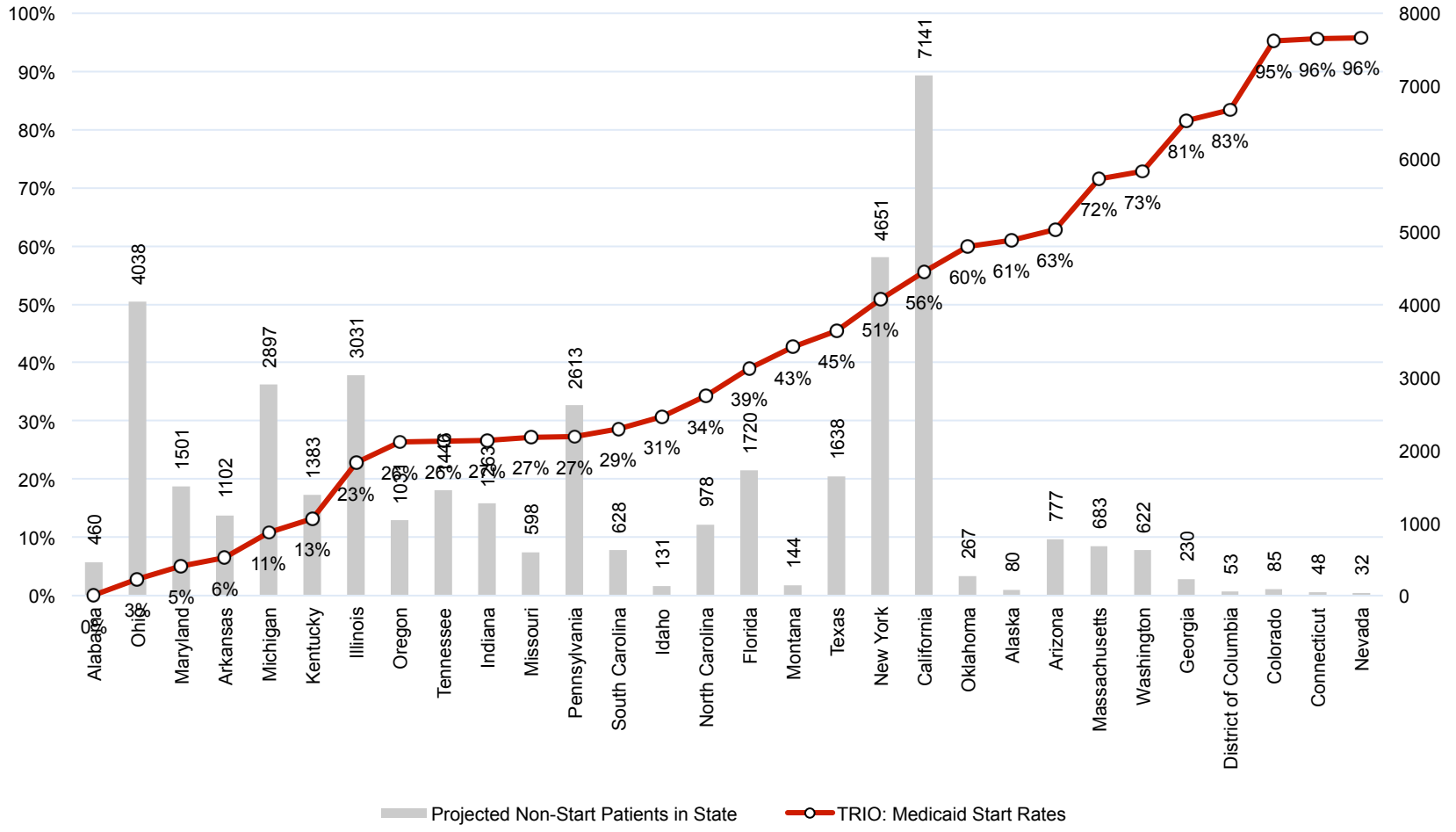
Medicaid restrictions by State and observed start rates do not necessarily align

State	Minimum Liver Disease Requirements[1]	Minimum Sobriety Requirements[1]	Minimum Prescriber Requirements[1]	TRIO: Medicaid Start Rates	TRIO: n
Alabama	Restrictions Unknown	Abstain 6 months	Restrictions Unknown	0%	28
Alaska	F2	Abstain 3 months	Restrictions Unknown	61%	100
Arizona	Chronic HCV	Abstain 6 months	Specialist Consultation	63%	35
Arkansas	F3	Abstain 6 months	Restrictions Unknown	6%	31
California	F2	Restrictions Unknown	Specialist Consultation	56%	424
Colorado	F3	Abstain 6 months	Specialist Consultation	95%	104
Connecticut	No Restrictions	No Restrictions	No Restrictions	96%	136
District of Columbia	F2	No Restrictions	Specialist Consultation	83%	12
Florida	No Restrictions	Abstain 1 month	Specialist Consultation	39%	210
Georgia	Chronic HCV	Varied*	Restrictions Unknown	81%	356
Idaho	F2	Abstain 6 months	Specialist Consultation	31%	104
Illinois	F3	Abstain 12 months*	Specialist Consultation	23%	123
Indiana	F3	Varied*	Specialist must prescribe	27%	15
Kentucky	F3	Varied*	Specialist Consultation	13%	38
Maryland	F2	Abstain 6 months*	Specialist must prescribe	5%	20
Massachusetts	No Restrictions	No Restrictions	No Restrictions	72%	260
Michigan	F3	Varied*	Specialist Consultation	11%	37
Missouri	F2	Screening and Counseling	Restrictions Unknown	27%	92
Montana	F3	Abstain 6 months	Specialist Consultation	43%	82
Nevada	Chronic HCV	Varied*	Restrictions Unknown	96%	119
New York	No Restrictions	Screening and Counseling	Specialist Consultation	51%	167
North Carolina	F2	Screening and Counseling	Restrictions Unknown	34%	73
Ohio	F3	Abstain 6 months*	Specialist must prescribe	3%	178
Oklahoma	F2	Abstain 6 months	Specialist Consultation	60%	95
Oregon	F3	Screening and Counseling*	Specialist Consultation	26%	57
Pennsylvania	F2	Screening and Counseling	Specialist must prescribe	27%	22
South Carolina	F3	Screening and Counseling	Restrictions Unknown	29%	91
Tennessee	F2	Abstain 6 months	Specialist must prescribe	26%	102
Texas	F3	Abstain 1 month	Specialist must prescribe	45%	22
Washington	Chronic HCV	Restrictions Unknown	Specialist Consultation	73%	254

Trio Data: Oct 2015 to Sep 2016 Medicaid patients with an initiating prescription. Top 29 States + DC (n >=10) shown. Start Rates colored red for 1st quartile and green for 4th.
[1]Minimum Requirements compiled from http://nvhr.org/hepatitis-c-state-medicaid-access accessed 030117. The least restrictive requirement from MCO and FFS group is listed.
*MCO restrictions varied from only screening to an abstinence period. "Varied" assigned if restriction for FFS was "Unknown", otherwise FFS restriction indicated.

Trio Health

2016 State Medicaid Start Rates and Estimated Unmet Demand



States shown are Top 30 for sample (>=14 Medicaid patients). Medicaid State start rates calculated from data for patients receiving an initiating prescription between Oct 2015 to Sep 2016 Gray Bars = # of estimated non-start patients. Red line = Start rates. Unmet demand estimated based on distribution of Medicaid enrollees (see Methods)

Trio Health

Conclusions: Unmet Demand in Medicaid States

- Medicaid demand is lower than expected, and access to care remains a hurdle due to formulary and restrictions
- Commercial and Medicare non-starts are increasing despite declining cost of treatment
- Commercial and Medicare changes are driving the increase in non-starts

Healthcare Policy

Jayson Slotnik, Partner
Healthcare Policy Strategies

Understanding the Barriers to HCV Care: The Clinical, Financial and Policy Issues that Matter

Jayson Slotnik JD, MPH
Partner
Health Policy Strategies, Inc.

March 8, 2017

HealthPolicyStrategies, Inc.

Agenda

- Disclosure
- Background
- CMS Guidance
- Overview of AASLD Guidelines
- Medicaid Coverage Policies
- Commercial Payer Litigation

Timeline Review

- Sovaldi approved and launched in December of 2013
- In the first few months of Sovaldi launch, access to care was not an issue.
- Changes started in Apr 2014 for Medicaid coverage.
- Harvoni approval in October 2014 provided a single pill, interferon-free, higher efficacy, lower cost option compared to the Sovaldi + Olysio regimen.
  - Medicaid access continues to be challenging
- CMS Medicaid Guidance end of 2015
- Medicaid access challenges continue in 2016
- Access challenges begin to ease in 2017

CMS Guidance

- On November 5, 2015, CMS issued a Notice to all Medicaid programs regarding appropriate coverage of Hep C Drugs

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop S2-26-12
Baltimore, Maryland 21244-1850

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES
CENTER FOR MEDICAID & CHIP SERVICES

Center for Medicaid and CHIP Services

NOVEMBER 5, 2015

MEDICAID DRUG REBATE PROGRAM NOTICE **Release No. 172**

For State Technical Contacts

ASSURING MEDICAID BENEFICIARIES ACCESS TO HEPATITIS C (HCV) DRUGS

The Centers for Medicare & Medicaid Services (CMS) remains committed to Medicaid beneficiaries continuing to have access to needed prescribed medications, a commitment we know that states share. The purpose of this letter is to advise states on the coverage of drugs for Medicaid beneficiaries living with hepatitis C virus (HCV) infections. Specifically, this letter addresses utilization of the direct-acting antiviral (DAA) drugs approved by the Food and Drug Administration (FDA) for the treatment of chronic HCV infected patients.

CMS' Guidance - Background

- Purpose is to advise states on the coverage of drugs for Medicaid beneficiaries with HepC.
- The law provides that a state may subject a covered outpatient drug to prior authorization, or exclude or otherwise restrict coverage of a covered outpatient drug if the prescribed use is not for a medically accepted indication as further defined in law.
- The term "medically accepted indication" means any use of a covered outpatient drug which is approved under the Food Drug And Cosmetic Act (FFDCA)…
- Accordingly, to the extent that states provide coverage of prescription drugs, they are required to provide coverage for those covered outpatient drugs when such drugs are prescribed for medically accepted indications, including the new direct-acting antiviral (DAA) HCV drugs.

AASLD HCV Treatment Guidelines

AASLD
AMERICAN ASSOCIATION FOR THE STUDY OF LIVER DISEASES

HCV Guidance: Recommendations for Testing, Managing, and Treating Hepatitis C

IDSA
Infectious Diseases Society of America

Recommendations for When and in Whom to Initiate Treatment

- **Treatment is recommended for all patients with chronic HCV infection, except those with short life expectancies that cannot be remediated by treating HCV, by transplantation, or by other directed therapy. Patients with short life expectancies owing to liver disease should be managed in consultation with an expert.**
  Rating: Class I, Level A

Benefits of Treatment at Earlier Fibrosis Stages (Metavir Stage Below F2)

Initiating therapy in patients with lower-stage fibrosis augments the benefits of SVR. In a long-term follow-up study, 820 patients with Metavir stage F0 or F1 fibrosis confirmed by biopsy were followed up for up to 20 years (Jezequel, 2015). The 15-year survival rate was statistically significantly better for those who experienced an SVR than for those whose treatment had failed or for those who remained untreated (93%, 82%, and 88%, respectively; *P* =.003). The study results argue for consideration of earlier initiation of treatment. Several modeling studies also suggest a greater mortality benefit if treatment is initiated at fibrosis stages prior to F3 (Øvrehus, 2015); (Zahnd, 2015); (McCombs, 2015).

Source: American Association of Liver Diseases (AASLD) HCV Guidance: Recommendations for Testing, Managing and Treating Hepatitis C (Oct, 2016)

CMS Guidance - Impermissible Access Restrictions

- "CMS is concerned that some states are restricting access to DAA HCV drugs contrary to the law by imposing conditions for coverage that may unreasonably restrict access to these drugs."
- For example, at the time of the release:
  - Several Medicaid programs were limiting treatment to those patients with a metavir fibrosis score F3, while a number of states are requiring metavir fibrosis scores of F4.
  - In addition, some Medicaid programs required a period of abstinence from drug and alcohol abuse as a condition for payment for DAA HCV drugs.
  - Finally, several Medicaid programs required that prescriptions for DAA HCV drugs must be prescribed by, or in consultation with specific provider types, like gastroenterologists, hepatologists, liver transplant specialists, or infectious disease specialists in order for payments to be provided for the drug.

CMS Guidance - Reminder to the States

- States may establish a prior authorization program and/or preferred drug lists.
  - By law, any PA program must provide a response within 24 hours of a request for prior authorization.
- BUT "the effect of such limitations should not result in the denial of access to effective, clinically appropriate, and medically necessary treatments using DAA drugs for beneficiaries with chronic HCV infections. States should, therefore, examine their drug benefits to ensure that limitations do not unreasonably restrict coverage of effective treatment using the new DAA HCV drugs."
- The Guidance document also suggests that states consider implementing programs that provide patients on HCV treatment with supportive care that will enhance their adherence to regimens, thereby increasing the success rates.

CMS Guidance - Medicaid Managed Care

- Services covered under Medicaid managed care contracts must be furnished in an amount, duration, and scope that is no less than the amount, duration, and scope for the same services for beneficiaries under FFS Medicaid.
- Therefore, the impermissible restrictions mentioned earlier equally apply to those patients enrolled in a MCO.
- CMS will monitor state compliance with their approved state plans, the statue, and regulations to assure that access to these medications is maintained.
- Medicare has same coverage requirements as Medicaid.

Changes in Medicaid Coverage by Disease State

Comparison of Medicaid FFS Liver Disease Requirements

Liver Disease Requirements	2014*	2016*	2017**
No Restrictions	0	5	6
Chronic HCV	0	4	3
F1	1	2	3
F2	2	10	16
F3	27	22	18
F4	4	1	0
Restrictions Unknown	17	7	5
Total	51	51	51

Source: *2014, 2016 Requirements – Center for Health Law and Policy Innovation Harvard Law School. National Viral Hepatitis Roundtable, Nov 2016
**2017 Requirements – Trio Health

Specific Changes in the States

- Colorado, Virginia– F3 to F2 in FFS from 2016 to 2017
- Delaware, Michigan, Vermont—F3 to F2 in both MCO and FFS from 2016 to 2017
- New York (FFS), Massachusetts, Florida, Wyoming, Conneticut—no restrictions.
- Many of these Medicaid changes occurred because of litigation.
  - Ohio still very restrictive, however and against CMS guidance.
- March of 2016, after Congress appropriated extra funds, the Department of Veterans Affairs said it would treat anyone in its health system with hepatitis C, regardless of the stage of illness.

Private Payer Litigation

Feb 13, 2017: UHC Settlement

Settlement Over Hepatitis Cure OK'd Despite Challenge From Attorneys General

02.18.2017

Celia Ampel, Daily Business Review

February 13, 2017

A West Palm Beach federal judge gave final approval to a nationwide class action settlement of claims against United HealthCare Services Inc., rejecting a challenge from 14 state attorneys general.

Under the terms of the settlement, health insurance giant United agreed to provide more than $200 million in coverage for the hepatitis C cure Harvoni. After the Coral Gables firm Rivero Mestre sued United for providing coverage of the drug only to policyholders with severe liver fibrosis, the company removed those restrictions.

Private Payer Litigation--Examples

- United HealthCare was sued for providing coverage to the class of drugs only to policyholders with severe liver fibrosis.
- Most recently, United agreed to provide more than $200 million in coverage for the hepatitis C cure Harvoni.
- United also agreed to remove a requirement that policyholders demonstrate abstinence from drug or alcohol use for at least six months prior to treatment. In addition, the settlement created a $500,000 fund to allow former policyholders who could not afford insurance to make a claim.
- Anthem Blue Cross and Blue Shield plans in 14 states authorized treatment to people “in all stages of fibrosis” (liver scarring) starting in 2016.
- Cigna and Aetna facing similar lawsuits.

Conclusion

- Actual litigation and the threat of litigation is forcing broader coverage and fewer restrictions on access.
  - Non starts should continue to decline in both commercial and federal programs.
- No other drug or disease state has this many non starts due to access barriers.
- Will this approach bleed to other disease states or drugs??
  - Will HepC serve as a template for the future challenges that may confront patients.
- As access increases, what will be the impact on Medicaid reform?