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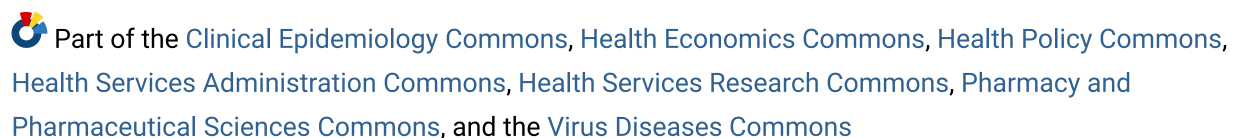
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Commonwealth Medicine

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Uptake of Direct Acting Antivirals for Hepatitis C Virus in a New England Medicaid Population, 2014-2017

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Background

- Prior to 2014, Hepatitis C Virus (HCV) treatment required injected interferon, with low efficacy and high side effects
- Direct acting antiviral (DAA) sofosbuvir (SOF) was introduced in December, 2013
  - Shorter treatment duration, all-oral regimen for some
  - Higher efficacy, fewer side effects, initially expensive
  - All-oral regimen ledipasvir/sofosbuvir (LDV/SOF) was approved in October 2014; others followed
- Medicaid prior authorization (PA) requirements were initially common
  - Prescribing provider specialist
  - Abstinence or substance use disorder (SUD) treatment
  - Advanced HCV
- Medicaid plans lifted restrictions over time, following Nov, 2015 CMS guidance
- Analysis of early uptake of DAAs demonstrated that low numbers of individuals were treated

Study Objectives

- Examine the uptake of DAAs in Medicaid population of three New England states from Dec, 2013 – Dec, 2017
- Examine effect of introduction of LDV/SOF and lifting HCV PA restrictions on uptake
- Examine uptake by age and gender

Study Population

- *Data Source*: Enrollment, medical, and pharmacy claims from 13 Medicaid plans in three New England states, Dec, 2012 – Dec, 2017
- *Study Population:* Medicaid members ages 18-64 with a diagnosis of HCV between Dec, 2012 and Dec, 2017 and no evidence of previous HCV treatment

Measures

Table 1. Study measures

Measure	Definition	Categories
HCV	2+ claims with ICD code for HCV diagnosis in one year or 1+ claim for chronic HCV	Yes/No
DAA Uptake	1+ pharmacy claim for a DAA	Yes/No
Age	Age as of Dec, 2012	18-34; 35-49; 50-64 years
Gender		Male/Female
PA Restrictions	Restriction in place in plan, by type: - Prescribing provider specialist - SUD - Advanced HCV	Yes/No

Results

Table 2. Number of Medicaid plans and percentage of study population across states, 2014 and 2017

	Plans	2014	2017
Total N	13	32,302	45,909
		Percentage of sample from each state	
State A	7	92%	90%
State B	4	3%	4%
State C	2	5%	6%

Table 3. Demographic characteristics of Medicaid members with HCV, 2014 and 2017

	2014	2017
	N (%)	N (%)
Total	32,302	45,909
Age		
18 - 34	9,562 (30%)	13,856 (30%)
35- 49	10,637 (33%)	14,907 (32%)
50 - 64	12,103 (37%)	17,146 (37%)
Gender		
Male	19,163 (59%)	27,063 (59%)
Female	13,139 (41%)	18,846 (41%)

Figure 1. Number of plans with PA restrictions on DAA, by type of restriction, by month, Dec, 2013 – Dec, 2017

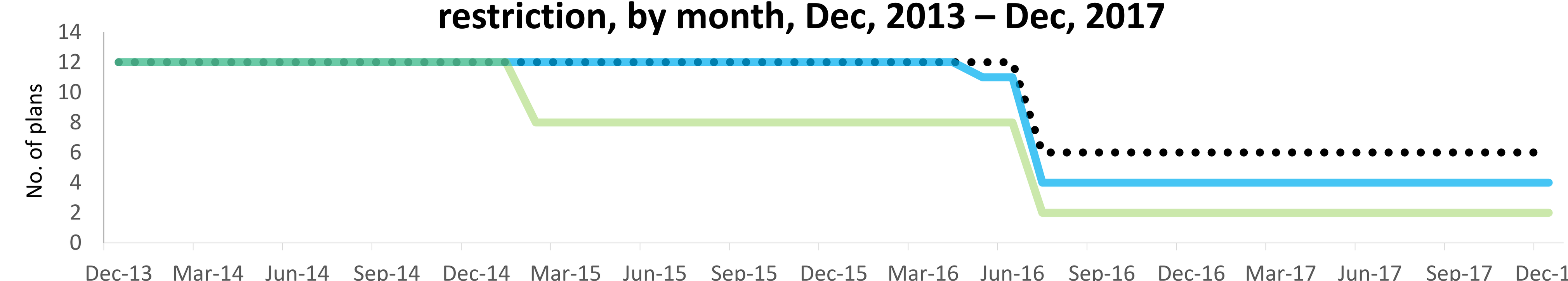


Figure 2. Uptake of DAAs among Medicaid members with HCV, three New England states, by month, Dec, 2013 – June, 2018

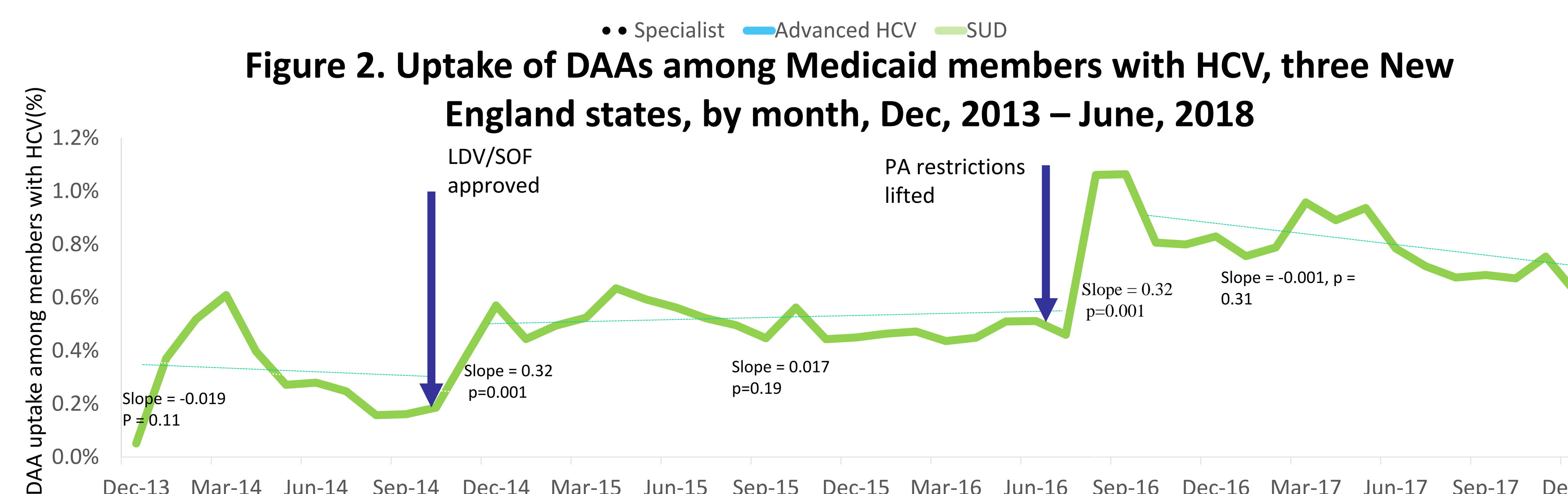


Figure 3. Uptake of DAAs among Medicaid members with HCV, three New England States, by gender and year, 2014-2017

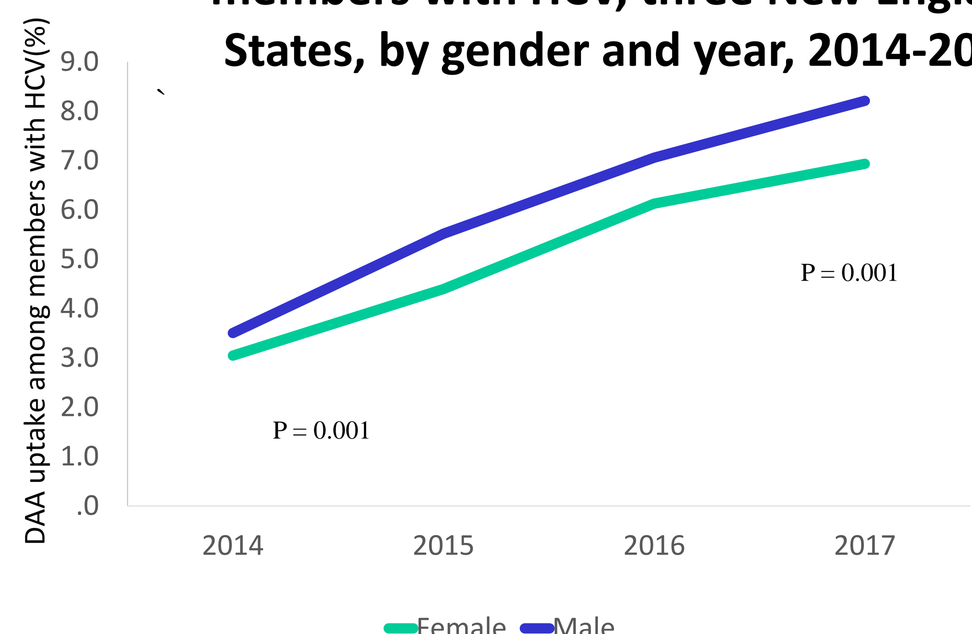
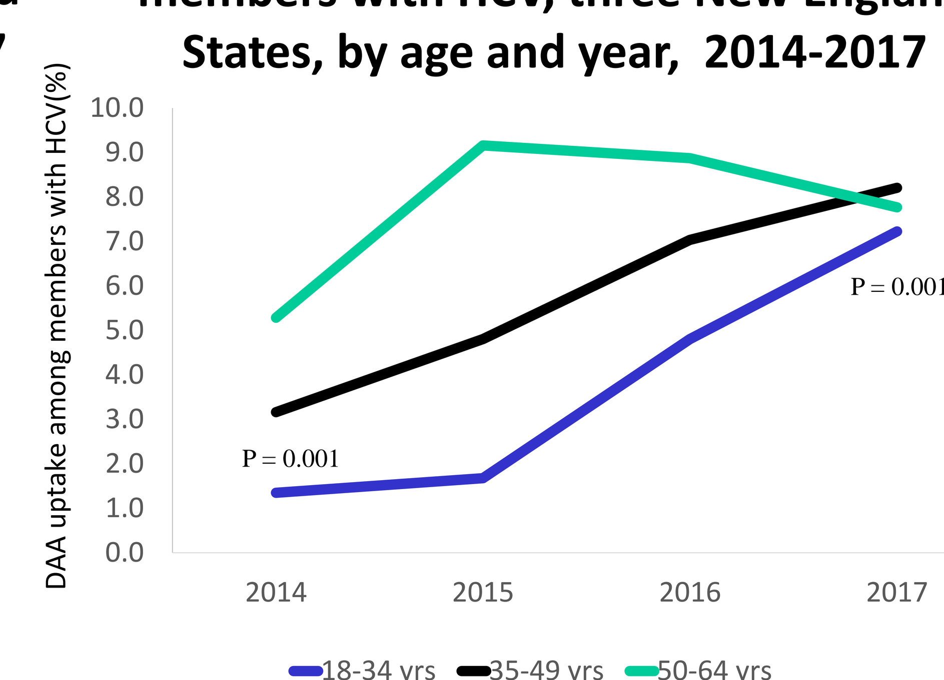


Figure 4. Uptake of DAAs among Medicaid members with HCV, three New England States, by age and year, 2014-2017



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Methods

- Members were included in the study population in each month from first HCV diagnosis until treated or left Medicaid
- Interrupted time series (ITS) with segmented autocorrelation-adjusted regression modeled trends in treatment uptake prior to and after two time points:
  - Oct, 2014 (LDV/SOF approval date)
  - July, 2016 (date PA restrictions in 10 plans were lifted)
- Chi-square testing evaluated demographic differences in DAA uptake in 2014 and 2017

Principal Findings

- DAA uptake rose from 3.3% in 2014 to 7.7% in 2017 (p = <0.01 for trend). Cumulatively, 18% were treated by 2017
- While uptake increased in the month following SOF introduction, uptake overall was flat until LDV/SOF was introduced, doubled in the month after approval and remained flat during the subsequent 20 months
- Uptake doubled again in the month following the lifting of PA restrictions then remained steady through 2017
- Uptake rose earliest among those ages 50-64 years; by 2017 uptake was slightly higher in younger adults
- Throughout the period the percentage of men treated was higher than females

Conclusion/Implications

- While initial uptake of DAAs was low in this multi-state Medicaid population, treatment increased through 2017
- Introduction of new medications and lifting of PA restrictions was followed by an immediate increase in uptake followed by relatively flat monthly utilization

Policy implications

- Sharp increase in uptake after LDV/SOF introduction may indicate warehousing of members in anticipation of LDV/SOF approval
- Treatment rate increase after PA restrictions were lifted indicates demand among those affected by restrictions
- A large percentage of the Medicaid population with HCV remains untreated; planned provider interviews will identify barriers and facilitators to treatment for HCV
- Multi-state population provides wider range of member and plan characteristics than a single state analysis