

Supplementary Online Content 1

The authors have provided this appendix to give readers additional information about their work.

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Effectiveness of direct patient outreach with a narrative naloxone and overdose prevention video to patients prescribed long-term opioid therapy in the US: The Naloxone Navigator randomized clinical trial

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eTable 1. Overdose Outcome	ICD-10 codes
Non-fatal opioid overdose	T40.0X1, T40.0X2, T40.0X3, T40.0X4, T40.1X1, T40.1X2, T40.1X3, T40.1X4, T40.2X1, T40.2X2, T40.2X3, T40.2X4, T40.3X1, T40.3X2, T40.3X3, T40.3X4, T40.4X1, T40.4X2, T40.4X3, T40.4X4
Fatal opioid overdose	Underlying cause of death codes for drug poisoning (X40– X44, X60–X64, X85, Y10–Y14), and a contributing cause of death code indicating opioid involvement (T40.1, T40.2, T40.3, T40.4)

eTable 2. Individual Responses to the Opioid-Related Behaviors in Treatment (ORBIT) Scale						
ORBIT Question	Proportion endorsing behavior at					
	Baseline		4 months		8 months	
In the past 4 months,	Intervention arm (n=514)	Usual care arm (n=480)	Intervention arm (n=468)	Usual care arm n=(460)	Intervention arm (n=467)	Usual care arm (n=436)
I have asked my doctor for an increase in my prescribed dose	25.49	23.13	18.38	14.44	16.27	15.83
I have asked my doctor for an early renewal of my prescription because I had run out early	18.87	11.46	12.82	8.89	9.42	9.40
I have used another person's opioid medication, for example a friend or family member's medication, or bought it from the street	7.59	5.21	4.06	3.33	5.14	4.36
I have saved up my opioid medication, just in case I needed it later	30.16	25.42	20.30	16.44	20.77	16.51
I have gone to a different doctor to get more opioid medication and did not tell my normal doctor about it	0.58	0.42	0.85	0.44	0.43	0.46
I have asked my doctor for another opioid prescription because either I had lost my prescription or medication, had it stolen, or someone else had used it	1.75	1.88	1.71	1.33	1.28	1.83
I have given or sold my prescribed medication to someone else	3.70	4.58	2.99	2.22	2.14	2.52
I have altered my dose in some other way, for example cutting patches or pills in half, when I was not advised to do so by a health professional	14.40	12.92	9.83	8.44	9.21	9.17
I have taken my opioid medication by a different route than was prescribed, for example by injecting it	1.36	1.04	0.85	0.44	0.64	0.92
I have used my opioid medication for other purpose, for	13.04	13.13	10.26	9.11	10.06	6.88

example to help me sleep or to help with stress or worry (do not count the times when you took opioids at bedtime so that you would not be in pain)						
Endorsed one or more opioid risk behaviors (any of the questions listed above)	59.53	51.46	43.38	39.11	43.04	37.84

eTable 3. Opioid risk behavior* over time, by trial arm among study participants who completed the ORBIT measure at each survey time point

Opioid risk behavior	No. of participants endorsing opioid risk behavior / no. who completed the survey measure (%)		Adjusted risk ratio (95% CI)*	Time x intervention P value*
	Intervention arm	Usual care arm		
Baseline	306/514 (59.53)	247/480 (51.46)	1.16 (1.03, 1.29)	0.93
4 months	203/468 (43.38)	176/450 (39.11)	1.12 (0.97, 1.31)	
8 months	201/467 (43.04)	165/436 (37.84)	1.14 (0.97, 1.33)	

*Opioid risk behavior was analyzed as a binary outcome, with a positive response defined as endorsing one or more risk behaviors on the ORBIT (Opioid-Related Behaviors in Treatment) scale

eTable 4. Opioid Overdose Prevention and Naloxone Knowledge over time, by trial arm among study participants who completed OOKS measure at each survey time point

Rx-OOKS	n, Rx-OOKS score* Mean (95% CI)		Difference (95% CI)	Time x intervention P value
	Intervention arm	Usual care arm		
Time 0	n=505, 19.62 (19.24, 19.99)	n=478, 11.46 (11.07, 11.84)	8.11 (7.57, 8.65)	<0.001
4 months	n=472, 14.82 (14.43, 15.22)	n=450, 13.18 (12.81, 13.56)	1.61 (1.08, 2.14)	
8 months	n=468, 15.47(15.06, 15.87)	n=437, 13.89 (13.51, 14.26)	1.52 (0.98, 2.05)	

Abbreviations: Rx-OOKS – Prescription Opioid Overdose Knowledge Scale

* Range of the Rx-OOKS scale is 0-25. Higher Rx-OOKS score represents greater knowledge

eFigure 1: Participants who were Dispensed Naloxone over Time, by Trial Arm

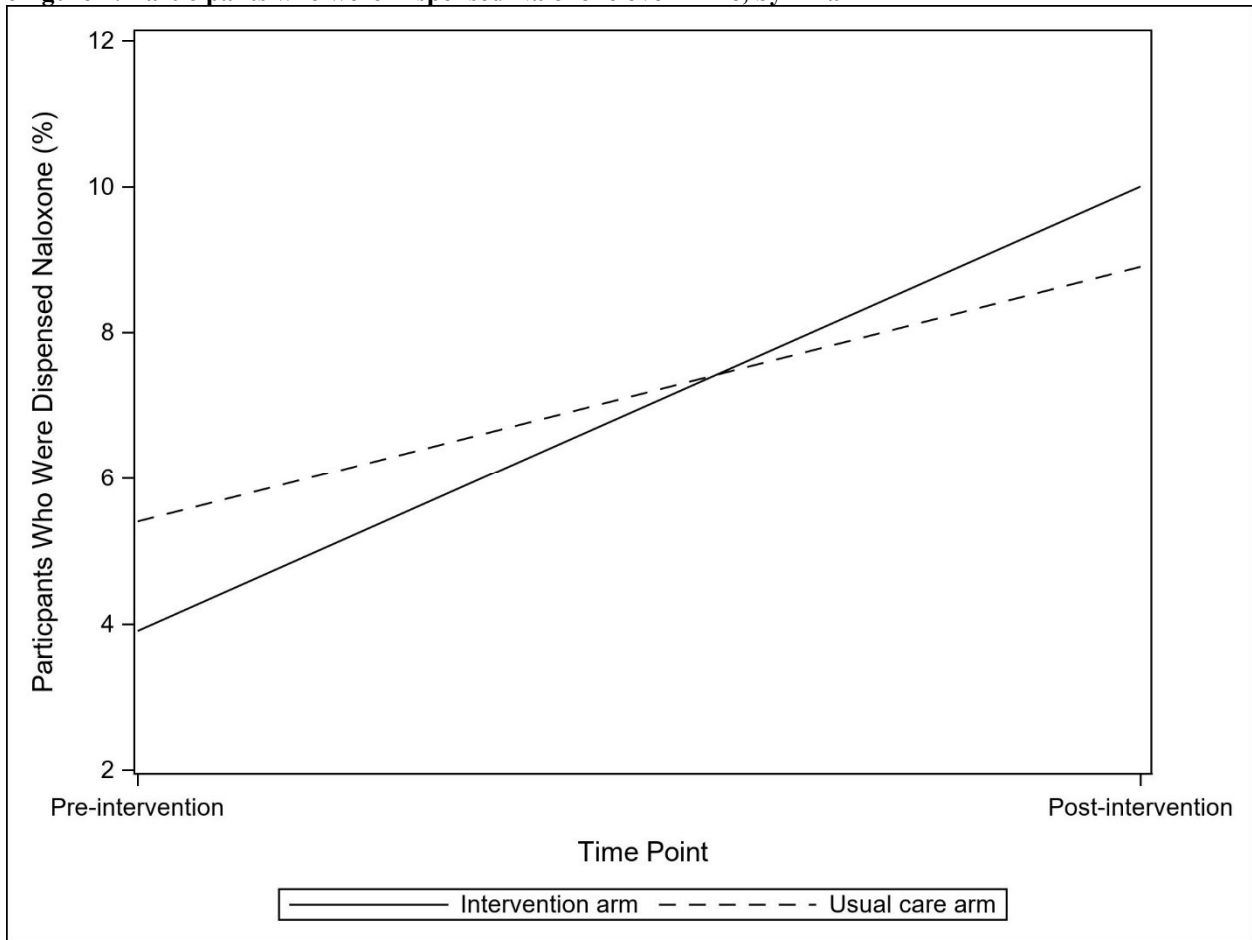
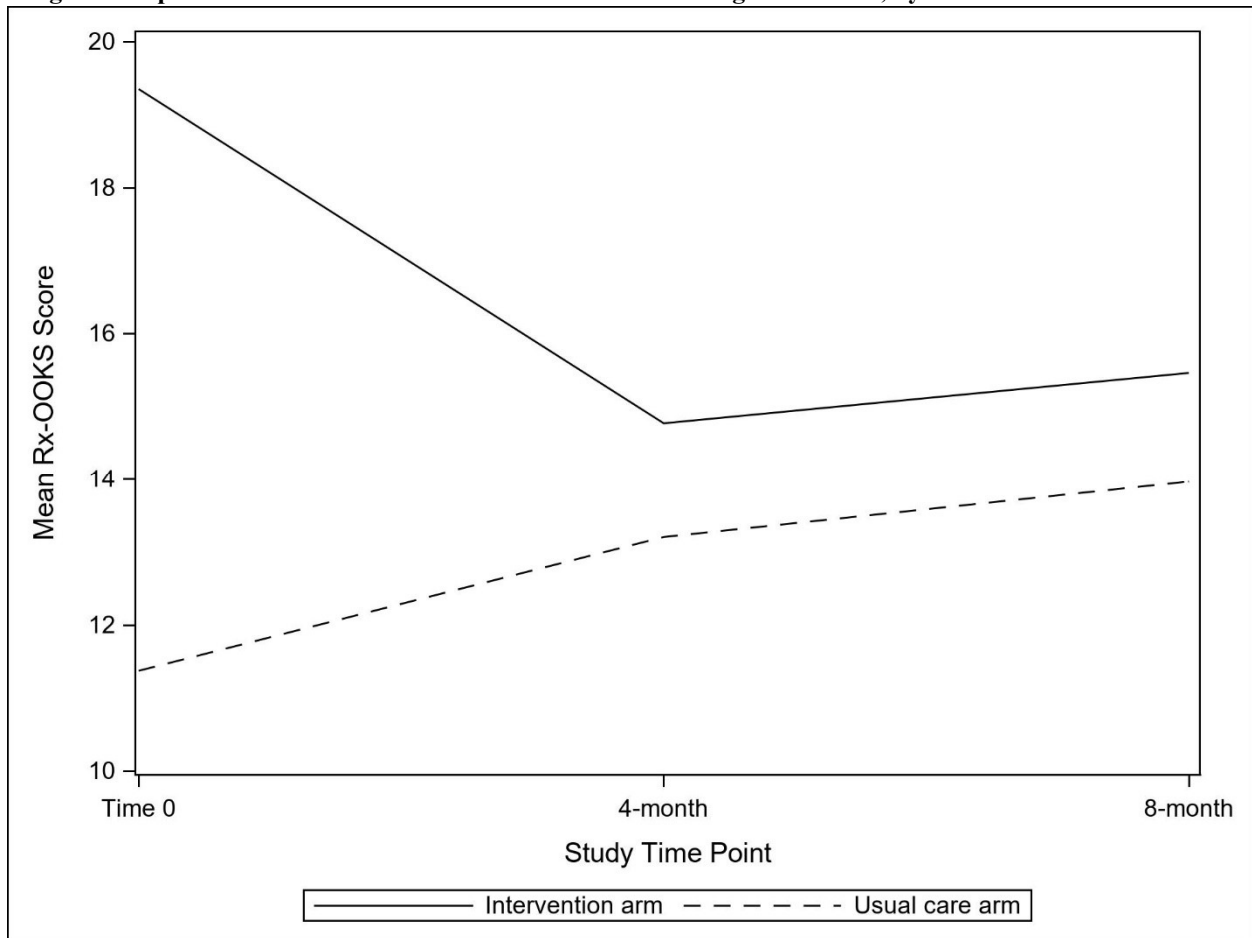


Figure 2: Opioid Overdose Prevention and Naloxone Knowledge over Time, by Trial Arm



eTable 5. Drug Use and Hazardous Drinking Among Study Participants over Time, by Trial Arm

Risk behavior	Proportion endorsing risk behavior (95% CI)		Risk ratio (95% CI)	Time x intervention P value
	Intervention arm (n=519)	Usual care arm (n=485)		
Cannabis use*				
Time 0	28.0 (24.1, 31.9)	24.4 (20.5, 28.2)	1.15 (0.93, 1.42)	0.31
4 months	25.6 (21.8, 29.4)	25.2 (21.3, 29.1)	1.02 (0.82, 1.26)	
8 months	24.0 (20.3, 27.7)	22.6 (18.8, 26.4)	1.06 (0.85, 1.33)	
Other drug use†,*				
Time 0	2.5 (1.1, 3.8)	1.9 (0.6, 3.1)	1.32 (0.56, 3.13)	0.95
4 months	2.9 (1.4, 4.4)	2.3 (0.9, 3.7)	1.28 (0.58, 2.82)	
8 months	2.7 (1.2, 4.1)	2.3 (0.9, 3.7)	1.16 (0.52, 2.59)	
Non-medical sedative use*				
Time 0	19.8 (16.3, 23.2)	19.1 (15.6, 22.6)	1.03 (0.80, 1.33)	0.52
4 months	19.0 (15.5, 22.5)	17.9 (14.3, 21.4)	1.07 (0.81, 1.40)	
8 months	19.0 (15.6, 22.4)	20.8 (17.0, 24.6)	0.91 (0.71, 1.18)	
Hazardous drinking‡				
Time 0	16.4 (13.3, 19.7)	15.7 (12.4, 19.0)	1.05 (0.79, 1.40)	0.96
4 months	15.4 (12.3, 18.6)	14.4 (11.2, 17.6)	1.07 (0.79, 1.45)	
8 months	15.6 (12.4, 18.8)	14.6 (11.4, 17.8)	1.07 (0.79, 1.44)	

*Assessed as binary outcomes, in which endorsement of one or more behavior was considered a positive response

†Other drug use includes heroin, other illicit opioids, cocaine, methamphetamine, inhalants, and hallucinogens

‡Assessed using the Alcohol Use Disorders Identification Test – Concise (AUDIT-C) which has a score range of 0-12. In men, a score of ≥ 4 , and in women, a score of ≥ 3 is positive; was analyzed as a binary outcome