



## How To Bill For And Justify Tobacco Treatment In Your Healthcare System

**Hollings Cancer Center**

An NCI-Designated Cancer Center

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# Conflicts of Interest & Funding Disclosures

- Dr. Toll consulted to Pfizer for an Advisory Board on e-cigarettes in 2018 and testifies on behalf of plaintiffs who have filed litigation against the tobacco industry.
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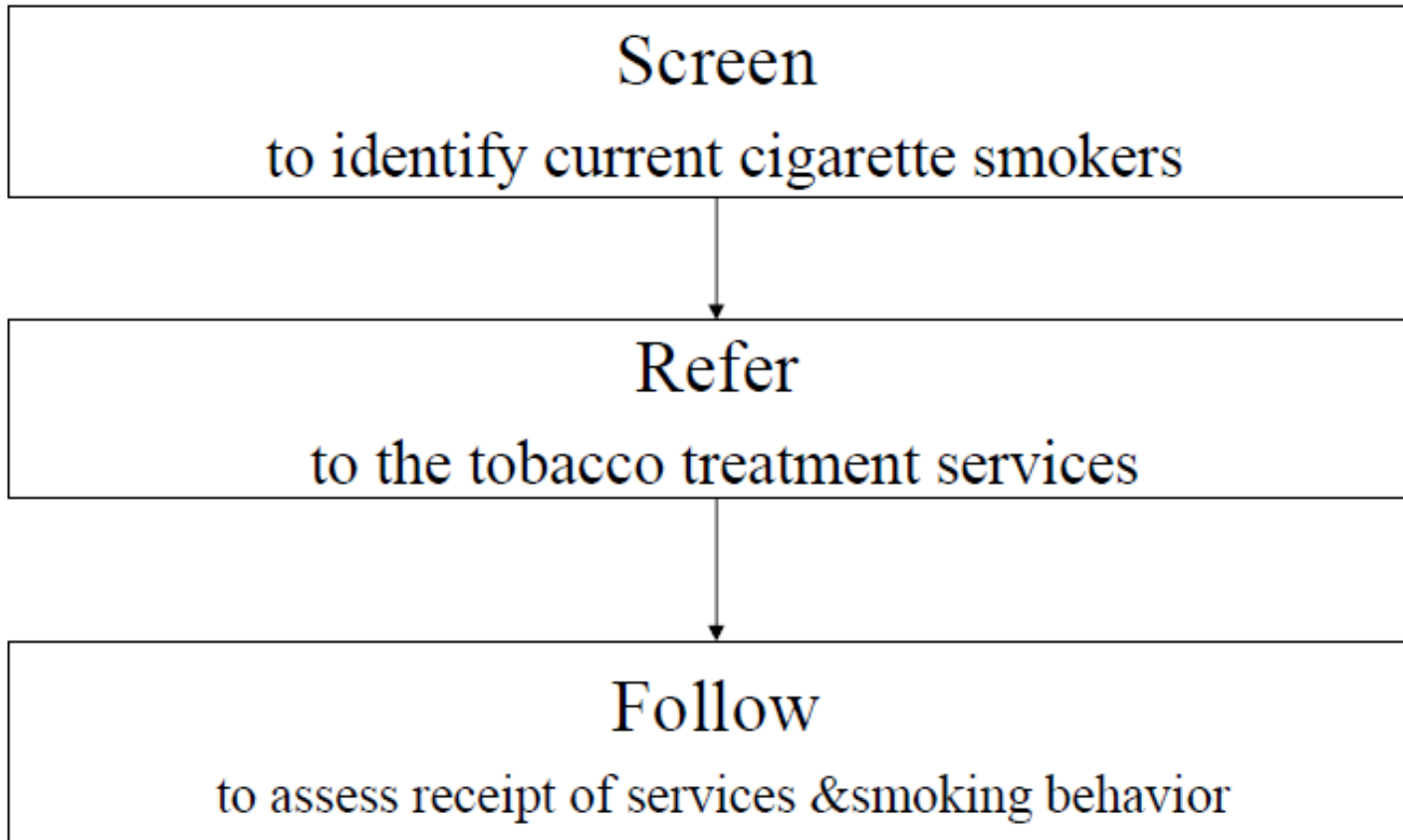
# Outline

- Discussion of the MUSC Tobacco Treatment Program's QI study for a *Value Based Program*
- Discussion of ways to encourage referrals to tobacco treatment
- Pros and Cons of different types of programs
- Billing for outpatient care in a *Revenue Based Program*

# **MUSC Tobacco Treatment Inpatient Program - Justifying Costs in a VALUE BASED PROGRAM**

# Framework for MUSC's Inpatient Program

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# The Tobacco Treatment Program at MUSC

In 2014, MUSC implemented an automated “*opt out*” tobacco cessation system in its main hospital in Charleston. The program delivered smoking cessation support to adult (18+ y/o) smokers with a bedside consult and IVR phone follow-up call at 3, 14, and 30 days after patients had been discharged home.

*Nicotine & Tobacco Research*, 2017, 937–943

doi:10.1093/ntr/ntw312

Original investigation

Received April 1, 2016; Editorial Decision November 12, 2016; Accepted November 17, 2016



Original investigation

## Feasibility of Implementing a Hospital-Based “Opt-Out” Tobacco-Cessation Service

Georges J. Nahhas PhD, MPH<sup>1</sup>, Dianne Wilson MS<sup>1</sup>, Vince Talbot MSc<sup>2</sup>, Kathleen B. Cartmell PhD<sup>3</sup>, Graham W. Warren MD, PhD<sup>4,5</sup>, Benjamin A. Toll PhD<sup>6</sup>, Matthew J. Carpenter PhD<sup>1</sup>, K. Michael Cummings PhD, MPH<sup>1</sup>

- 2.5-fold increase in stop smoking medication use
- 2-fold increase in 30-day post-discharge cessation

- 85% of patients accept the bedside consult

*Journal of Smoking Cessation*, page 1 of 6  
© The Author(s) 2016. doi:10.1017/asc.2016.20

## Who Opted Out of an *Opt-Out* Smoking-Cessation Programme for Hospitalised Patients?

Georges J. Nahhas,<sup>1</sup> K. Michael Cummings,<sup>1</sup> Vince Talbot,<sup>2</sup> Matthew J. Carpenter,<sup>1</sup> Benjamin A. Toll,<sup>3</sup> and Graham W. Warren<sup>4,5</sup>

# 1-Month Outcomes

Patients	Bedside + IVR Counselling	IVR Only	Relative Risk
Eligible for follow-up calls	1475	3925	NA
Unable to call (wrong #, missing #, disconnected #, dropped calls)	195 (13.2%)	601 (15.3%)	NA
Reached within 1 month post-discharge	703/1280 = 55%	1613/3324 = 49%	1.13
Denied having been a smoker	NA	492 = 12.5%	
Used medications within 1-month post-discharge	144/703 = 21%	92/1121 = 8%	2.5
Smoke-free (of those reached by phone)	359/703 = 51%	304/1121 = 27%	1.9
Smoke-free applying ITT (of those activated for follow-up)	359/1475 = 24%	304/3443 = 9%	2.8



# Impact on Unplanned Hospital Readmissions and Health Care Costs After 12 Months

**MEDICAL CARE**  
Official Journal of the Medical Care Section, American Public Health Association

ORIGINAL ARTICLE

## Effect of an Evidence-based Inpatient Tobacco Dependence Treatment Service on 30-, 90-, and 180-Day Hospital Readmission Rates

Kathleen B. Cartmell, PhD, MPH,\*† Mary Dooley, MS,\* Martina Mueller, RN, PhD,\*  
Georges J. Nahhas, PhD, MPH,‡ Clara E. Dismuke, PhD,§ Graham W. Warren, MD, PhD,\*||  
Vince Talbot, MSc,¶ and K. Michael Cummings, PhD, MPH\*†‡§

- Mean healthcare charges for smokers exposed to the TTP was \$7,299 lower than for those who did not receive TTP services. The TTP cost was trivial by comparison at \$34.21 per smoker eligible for the service

- At 30 days post-discharge, readmission rates were statistically significantly (23%) lower in TTP exposed smokers compared to unexposed smokers

ORIGINAL ARTICLE

OPEN

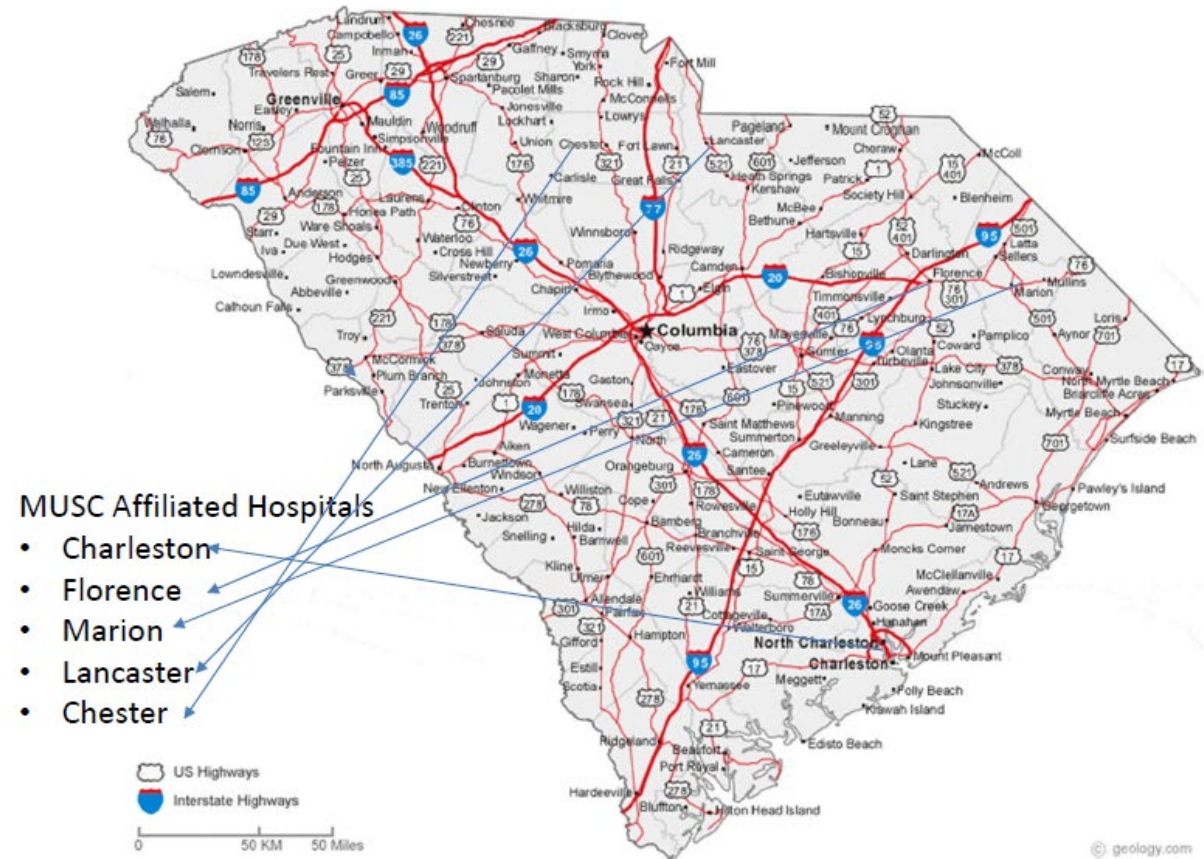
## Effect of an Evidence-based Inpatient Tobacco Dependence Treatment Service on 1-Year Postdischarge Health Care Costs

Kathleen B. Cartmell, PhD, MPH,\*† Clara E. Dismuke, PhD,‡ Mary Dooley, MS,\*  
Martina Mueller, RN, PhD,\* Georges J. Nahhas, PhD, MPH,§ Graham W. Warren, MD, PhD,\*||  
Peter Fallis, B.Comm,¶ and K. Michael Cummings, PhD, MPH†§

- For patients exposed to the TTP, the 30-day readmission rate was 23% lower
- At 90 and 180 days, patients exposed to the TTP had readmission rates 13% and 14% lower
- For patients exposed to the TTP, the overall adjusted mean healthcare charges for smokers was \$7,299 lower than for those who did not receive TTP services
  - \$2,701 lower if based on projected billings paid
- This translates into a **healthcare cost savings of \$4.27 million** over an 8-month intervention period, taking into account the cost savings per patient (\$2,701), number of patients who received the service (1,640) and annual program cost (\$158,140)

# Replication Study

- **Part 1** will be a randomized clinical trial to test the impact of the face-to-face bedside consult and post-discharge IVR calls vs usual care on 2 outcomes:
  - 1) Self-reported smoking prevalence within 30 days after hospitalization;
  - 2) The percentage of eligible patients who self-report using an FDA approved stop smoking medication within 30 days after hospitalization;
- **Part 2** will be a retrospective record review of patients enrolled in Part 1 to examine 2 outcomes:
  - 1) Unplanned hospital readmissions measured at 30, 90, and 180 days after discharge; and
  - 2) Health care charges measured over a 1-year period after hospitalization.

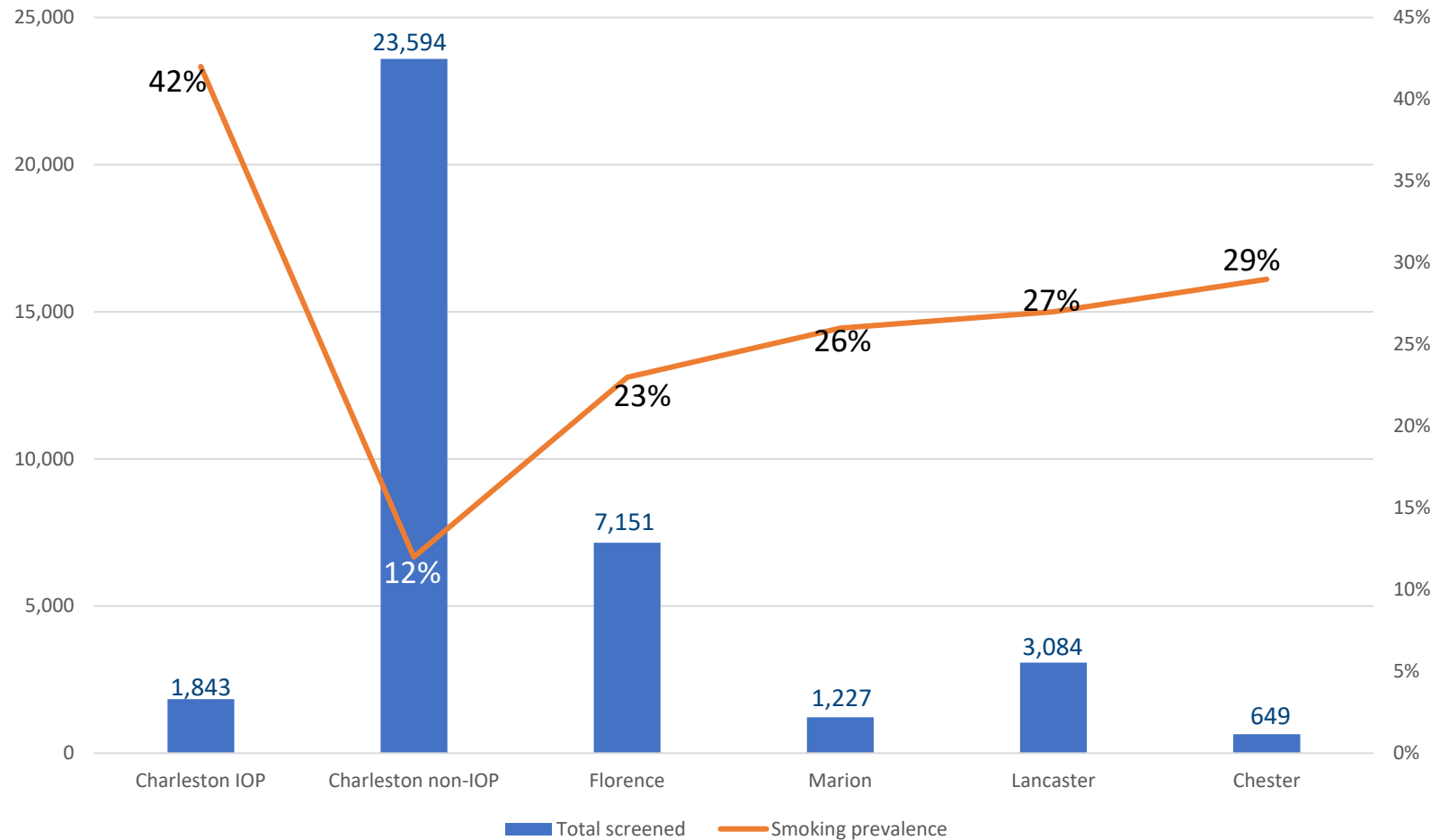


# Part 1: RCT Accrual March 2021 – December 2021

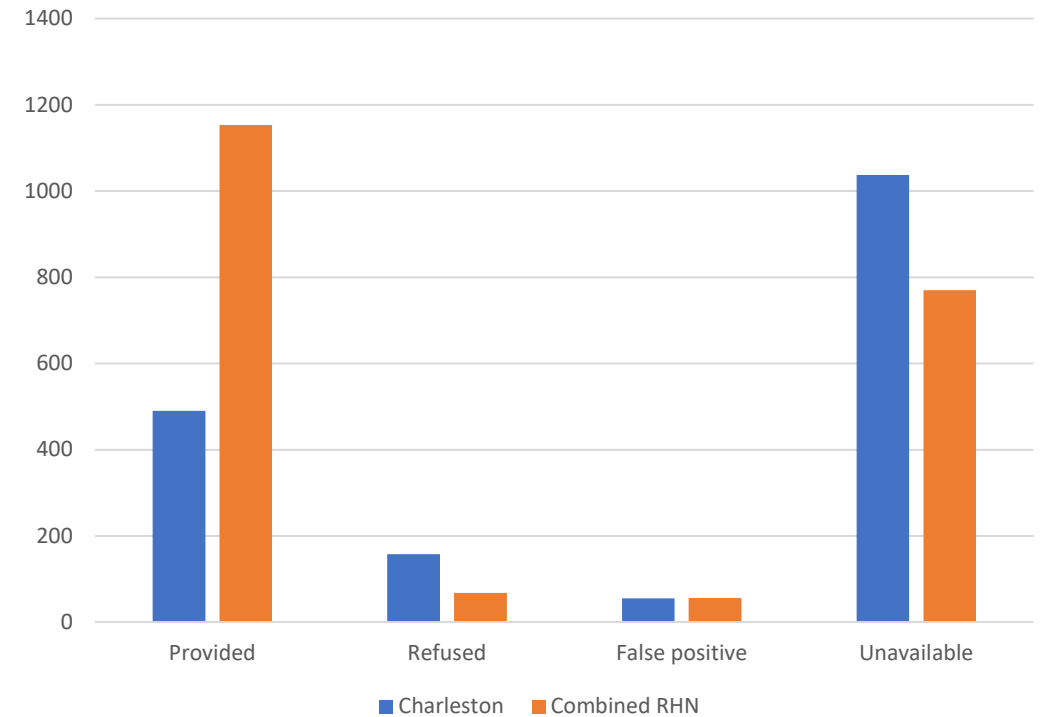
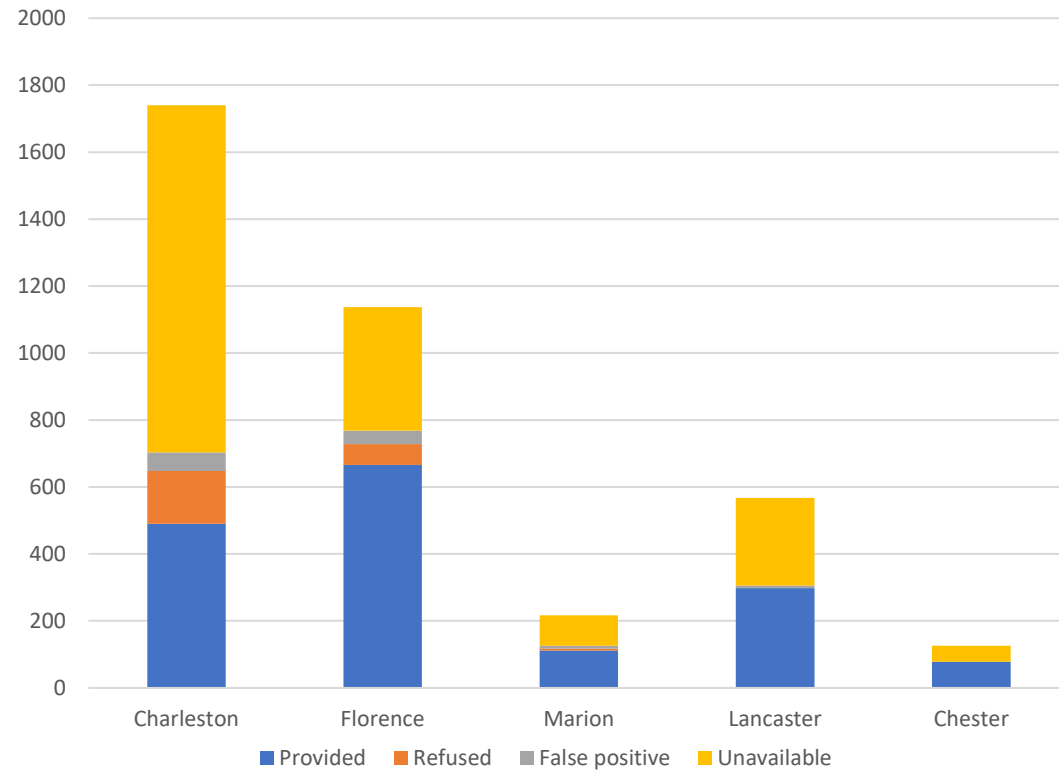
Exposures	2/3 <sup>rd</sup> randomized to Bedside tele-counseling Plus post-discharge IVR calls for home discharged patients only (Enhanced care)	1/3 randomized to Post-discharge IVR calls for home discharged patients only (Basic care)
Universal screening for tobacco use	Yes	Yes
Telehealth counseling while inpatient offered	Yes	No
IVR follow-up, with QL transfer (3 calls @ 7-14 days)	Yes	Yes
Follow-up phone interview @ 6-weeks to assess post-discharge smoking status and use of FDA approved stop smoking meds	Yes - subsample	Yes - subsample



# Screening and Smoking Prevalence (3/8/2021 to 12/11/2021)

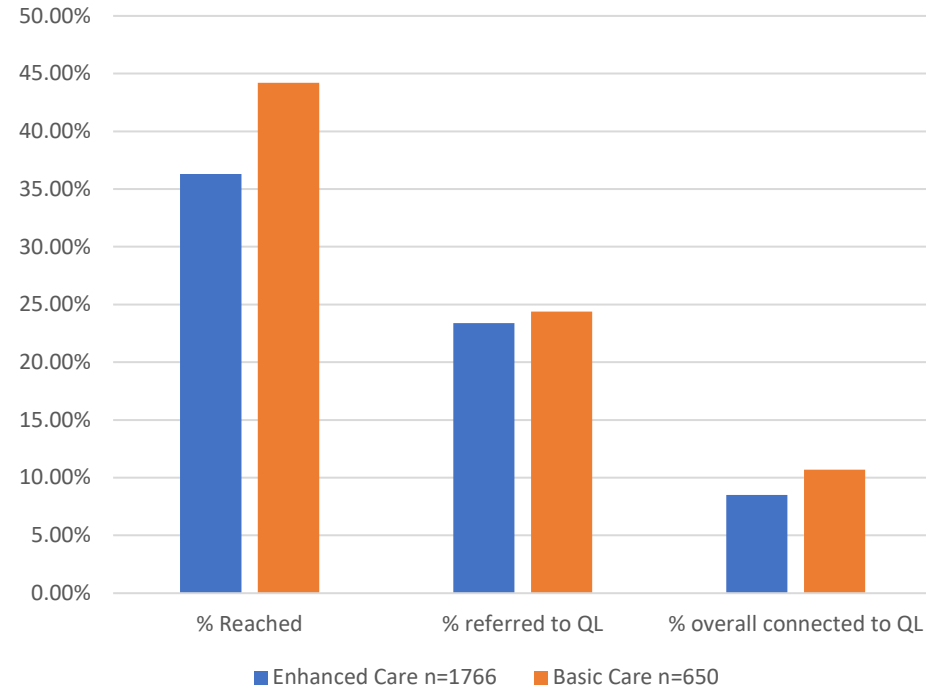


# Delivery of Beside Consult (Enhanced Care Only) 3/8/21 to 12/11/21

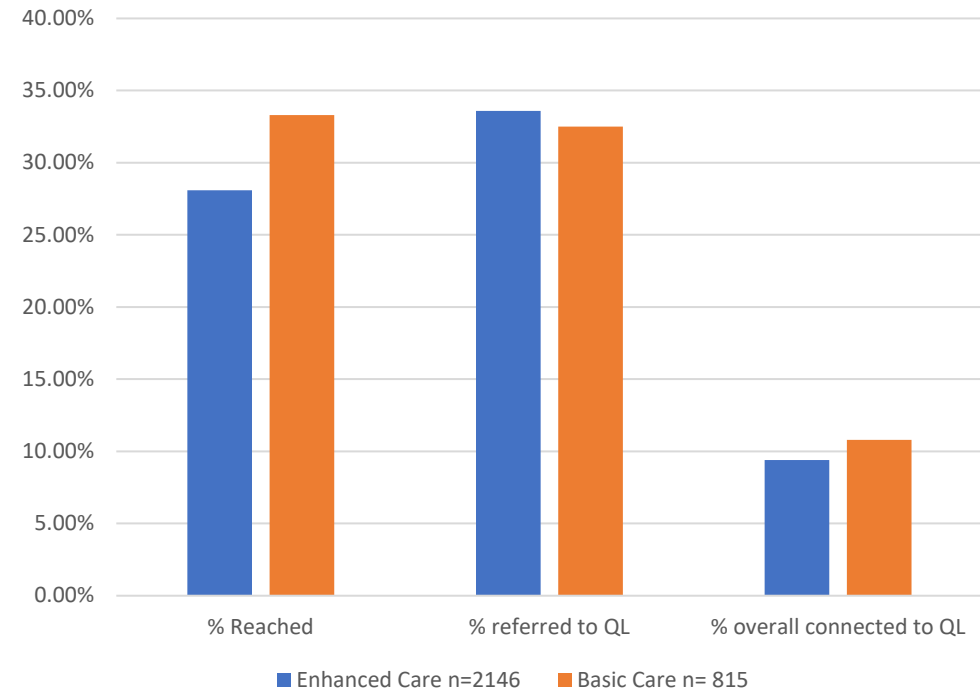


# Post-Discharge IVR Calls (Enhanced vs Basic Care Groups)

## Charleston



## Four Regional Hospitals Combined





# 6-Week Follow-up Survey

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## Charleston

- # eligible for follow-up: n=1,337
- # completed: 516/1,337 (38.6%)

## Reasons for non-completion

- # refused: 120/1,337 (9.0%)
- # not eligible: 150/1,337 (11.2%)
- # bad/wrong number: 122/1,337 (9.1%)
- # no response to calls: 429/1,337 (32.1%)

## Four Regional Hospitals Combined

- # eligible for follow-up: n=1,684
- # completed: 519/1,684 (30.8%)

## Reasons for non-completion

- # refused: 129/1,684 (7.7%)
- # not eligible: 121/1,684 (7.2%)
- # bad/wrong number: 220/1,684 (13.1%)
- # no response to calls: 695/1,684 (41.2%)

# Characteristics of MUSC Inpatients Who Smoke

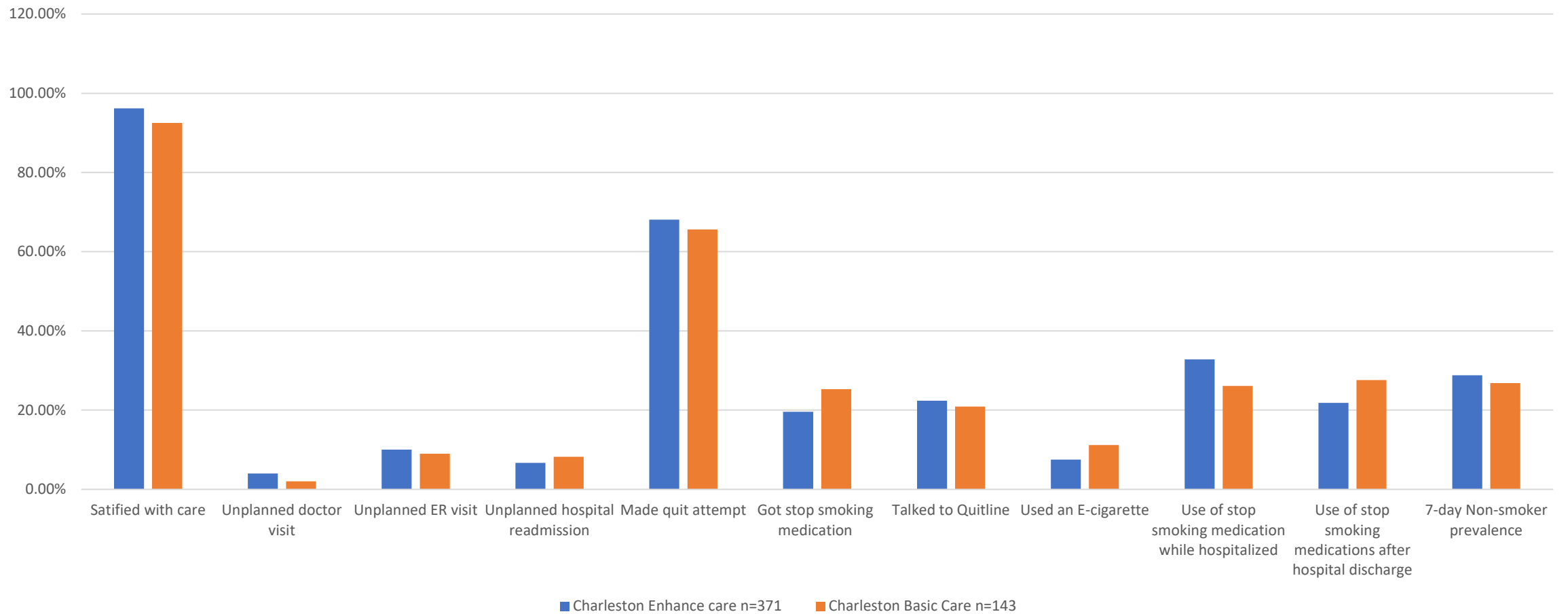
## Charleston

- Median years smoking: 32 years
- Age first started buying cigarettes
  - < 21 years - 81.7%
  - > 22+ years – 18.3%
- Use of other tobacco products
  - Cigars - 8.6%
  - Oral tobacco -1.4%
  - E-cigarettes – 9.9%
- Live with a smoker in Household
  - Yes – 36.0%
  - No – 43.4%
  - Live alone – 20.6%

## Four Regional Hospitals Combined

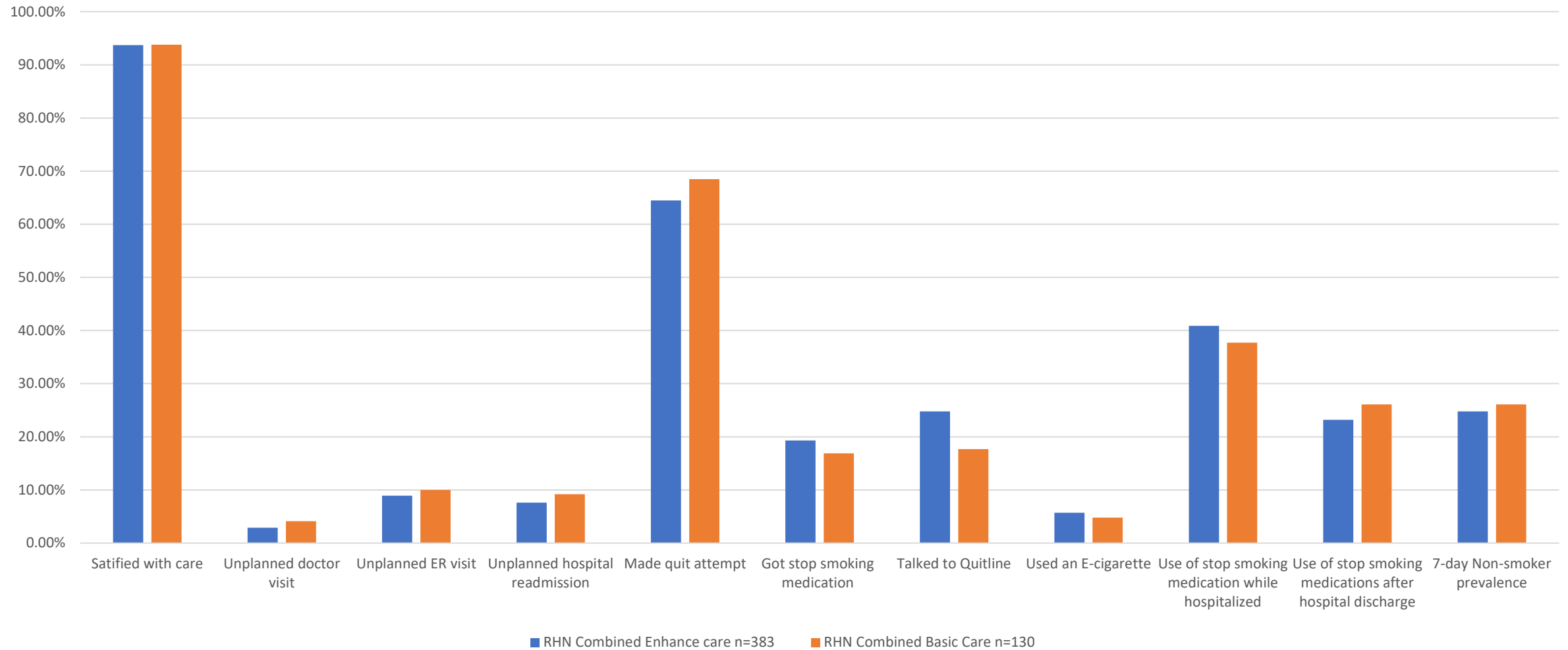
- Median years smoking: 36 years
- Age first started buying cigarettes
  - < 21 years – 82.6%
  - > 22+ years – 17.4%
- Use of other tobacco products
  - Cigars - 7.3%
  - Oral tobacco -1.4%
  - E-cigarettes – 8.1%
- Live with a smoker in Household
  - Yes – 39.6%
  - No – 36.8%
  - Live alone – 23.6%

# 6-Week Follow-up Results - Charleston

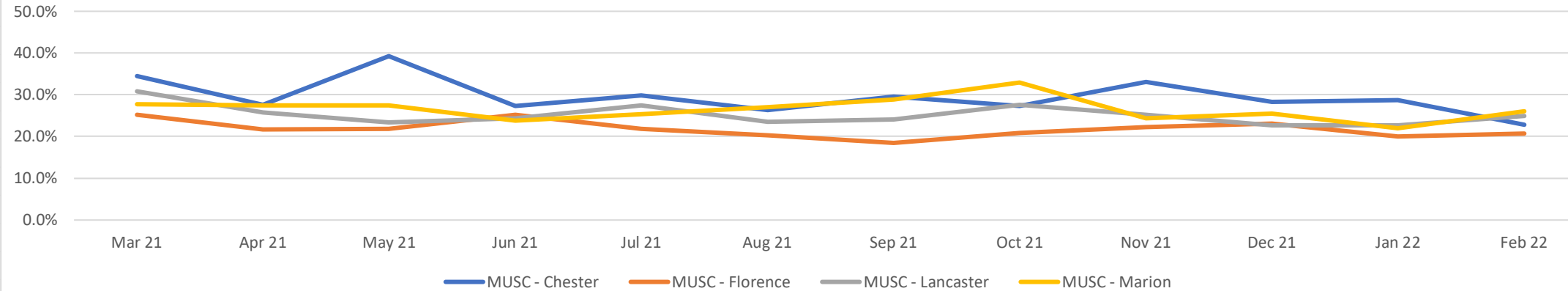




# 6-Week Follow-up Results RHN Combined

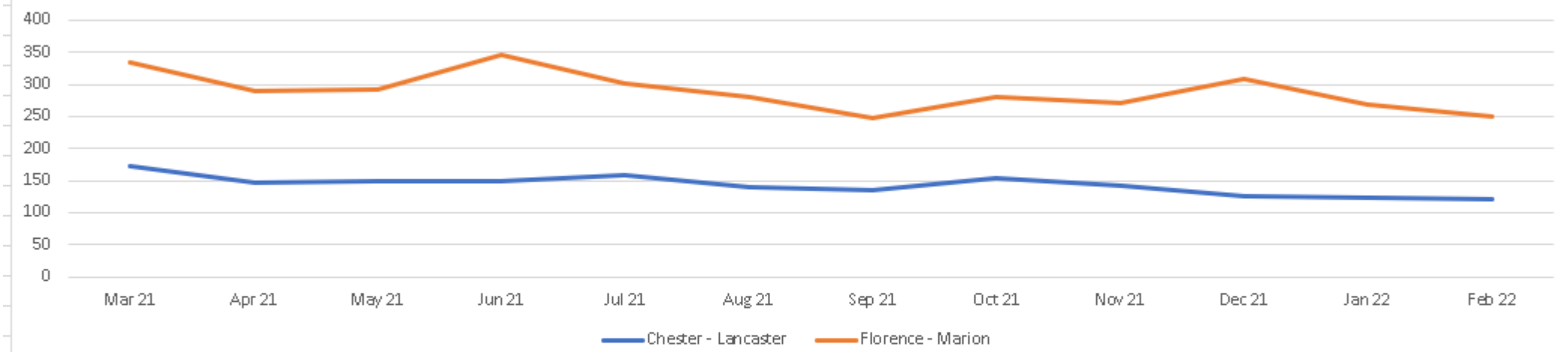


RHN  
Monthly Prevalence Rates



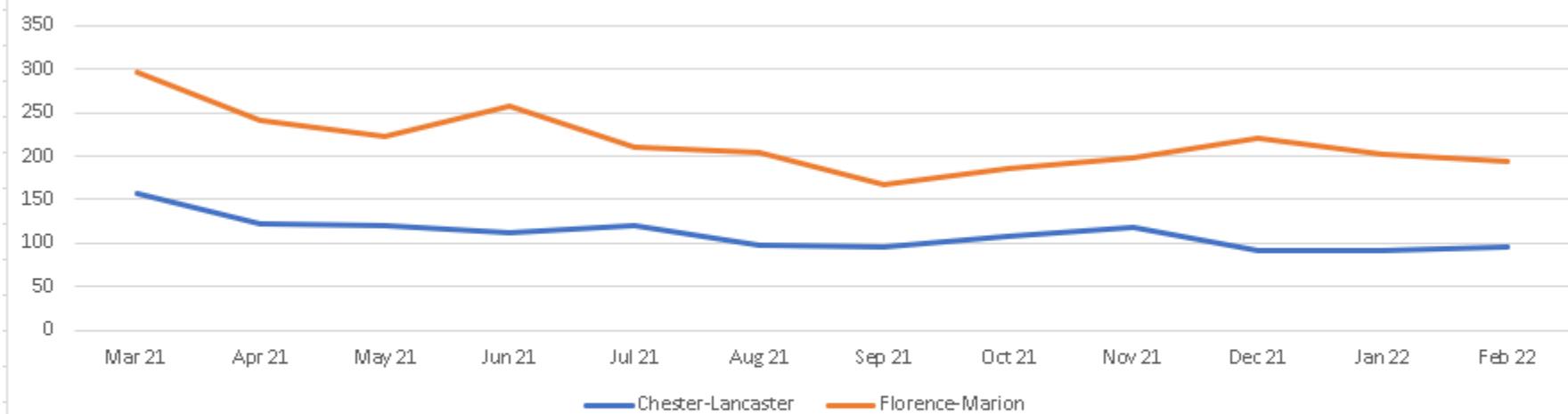
		Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total
<b>Unique MRNs Admission</b>	MUSC - Chester	87	80	97	99	84	99	95	88	100	92	80	79	1080
	MUSC - Florence	1081	1051	1079	1188	1150	1117	996	1097	1053	1146	1132	1022	13112
	MUSC - Lancaster	465	481	476	496	488	482	445	469	433	442	441	417	5535
	MUSC - Marion	224	226	208	202	198	204	218	161	156	173	196	146	2312
														22039
<b>Unique Smokers</b>	MUSC - Chester	30	22	38	27	25	26	28	24	33	26	23	18	320
	MUSC - Florence	272	227	236	299	251	226	184	228	234	265	226	212	2860
	MUSC - Lancaster	143	124	111	121	134	113	107	129	109	100	100	104	1395
	MUSC - Marion	62	62	57	48	50	55	63	53	38	44	43	38	613
														5188
<b>Rates</b>		Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	
	MUSC - Chester	34.5%	27.5%	39.2%	27.3%	29.8%	26.3%	29.5%	27.3%	33.0%	28.3%	28.8%	22.8%	29.6%
	MUSC - Florence	25.2%	21.6%	21.9%	25.2%	21.8%	20.2%	18.5%	20.8%	22.2%	23.1%	20.0%	20.7%	21.8%
	MUSC - Lancaster	30.8%	25.8%	23.3%	24.4%	27.5%	23.4%	24.0%	27.5%	25.2%	22.6%	22.7%	24.9%	25.2%
MUSC - Marion	27.7%	27.4%	27.4%	23.8%	25.3%	27.0%	28.9%	32.9%	24.4%	25.4%	21.9%	26.0%	26.5%	

Monthly RHN Smoker Hospitalizations (Unique MRNs) Mar 2021 - Feb 2022



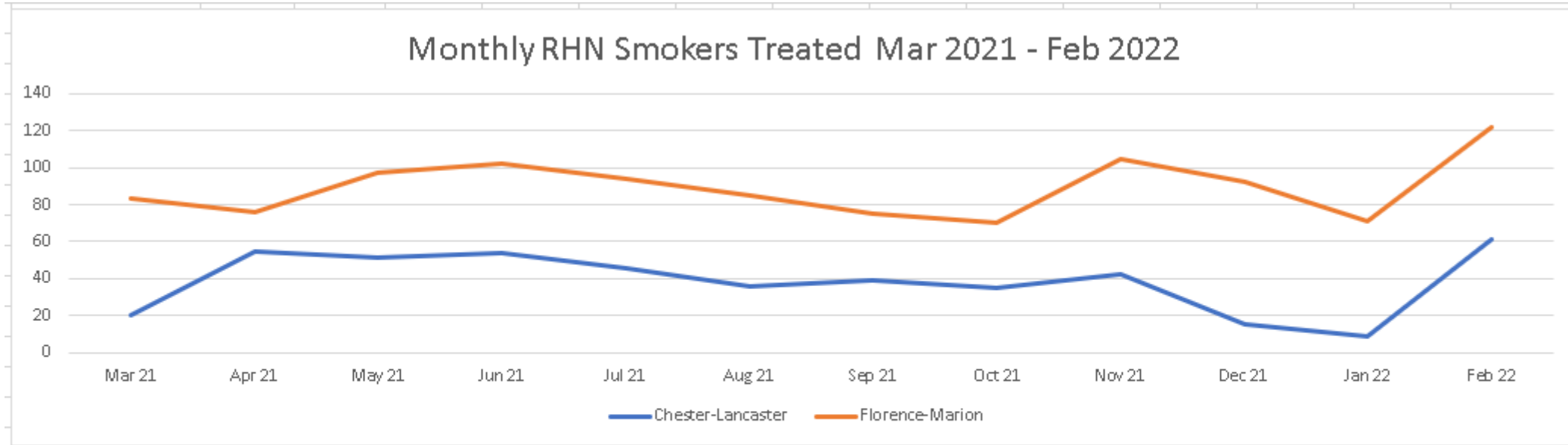
	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total	Daily Avg
Chester - Lancaster	173	146	149	148	159	139	135	153	142	126	123	122	1715	4.7
Florence - Marion	334	289	293	347	301	281	247	281	272	309	269	250	3473	9.5
	507	435	442	495	460	420	382	434	414	435	392	372	5188	14.2

Monthly RHN Smokers Referred to Treatment Mar 2021 - Feb 2022



	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total	Daily Avg
Chester-Lancaster	157	123	120	112	120	97	96	107	118	91	92	95	1328	3.6
Florence-Marion	296	242	222	258	211	204	168	185	198	220	202	195	2601	7.1
	453	365	342	370	331	301	264	292	316	311	294	290	3929	10.8

Monthly RHN Smokers Treated Mar 2021 - Feb 2022

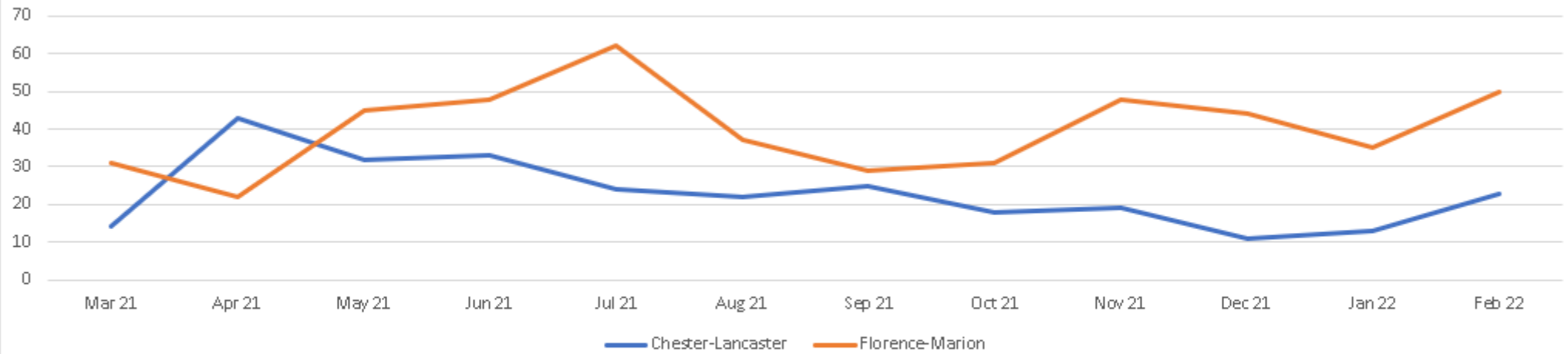


	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total	Daily Avg
Chester-Lancaster	20	55	51	54	46	36	39	35	42	15	9	61	463	1.3
Florence-Marion	83	76	97	102	94	85	75	70	105	92	71	122	1072	2.9
	103	131	148	156	140	121	114	105	147	107	80	183	1535	4.2

Now that study is over will increase by 1/3 or ~750

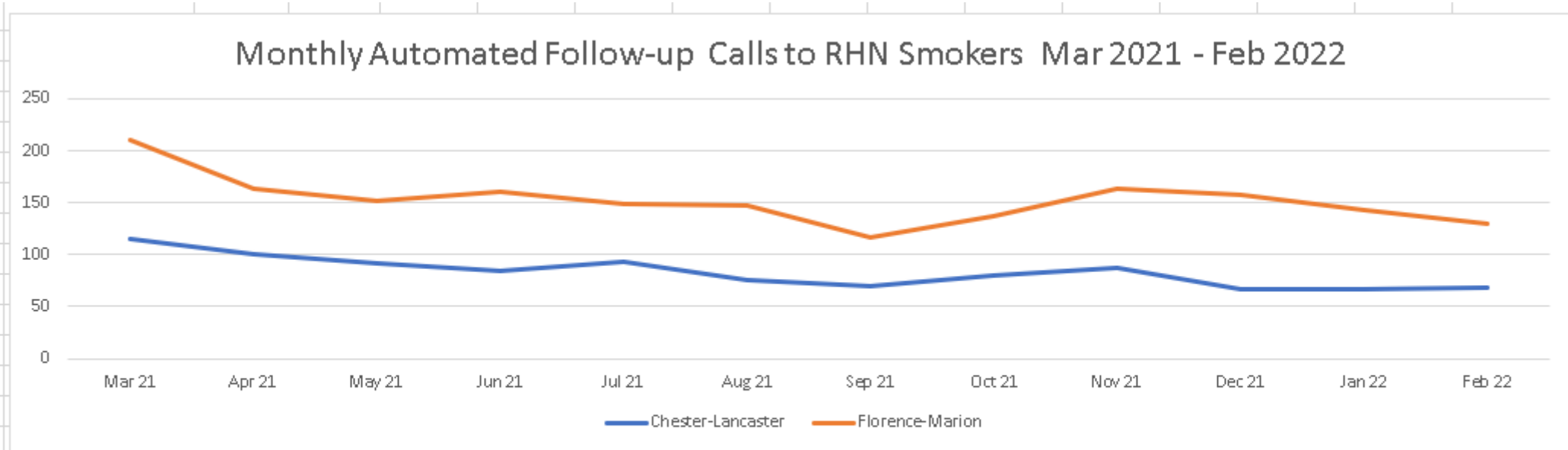


Monthly RHN Prescribed/Recommended Meds Mar 2021 - Feb 2022



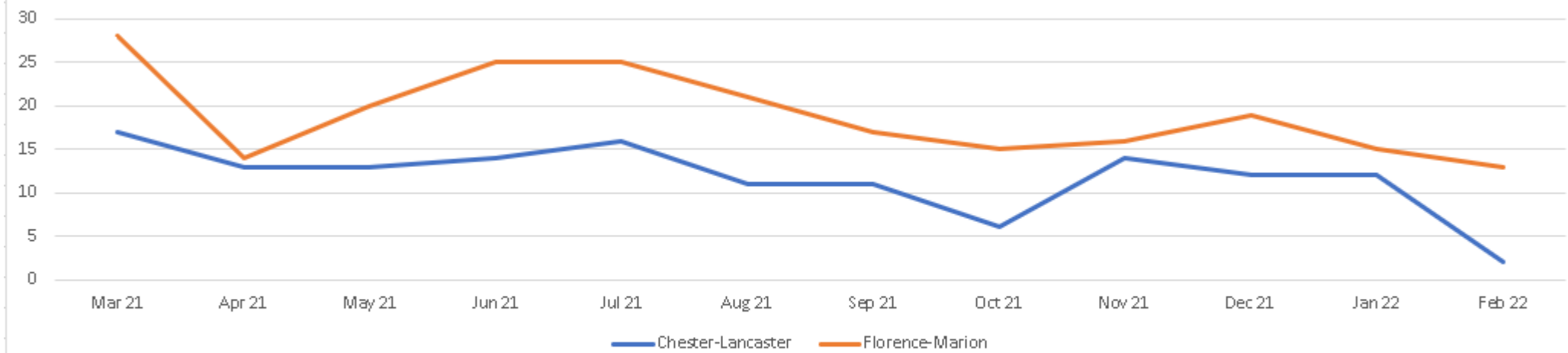
	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total	Daily Avg
Chester-Lancaster	14	43	32	33	24	22	25	18	19	11	13	23	277	0.8
Florence-Marion	31	22	45	48	62	37	29	31	48	44	35	50	482	1.3
	45	65	77	81	86	59	54	49	67	55	48	73	759	2.1

Monthly Automated Follow-up Calls to RHN Smokers Mar 2021 - Feb 2022



	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total	Daily Avg
Chester-Lancaster	115	101	92	85	93	75	69	80	88	67	67	68	1000	2.7
Florence-Marion	210	163	152	161	149	148	117	137	163	157	143	130	1830	5.0
	325	264	244	246	242	223	186	217	251	224	210	198	2830	7.8

Monthly RHN Referrals to the SC Quitline Mar 2021 - Feb 2022



	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Total	Daily Avg
Chester-Lancaster	17	13	13	14	16	11	11	6	14	12	12	2	141	0.4
Florence-Marion	28	14	20	25	25	21	17	15	16	19	15	13	228	0.6
	45	27	33	39	41	32	28	21	30	31	27	15	369	1.0

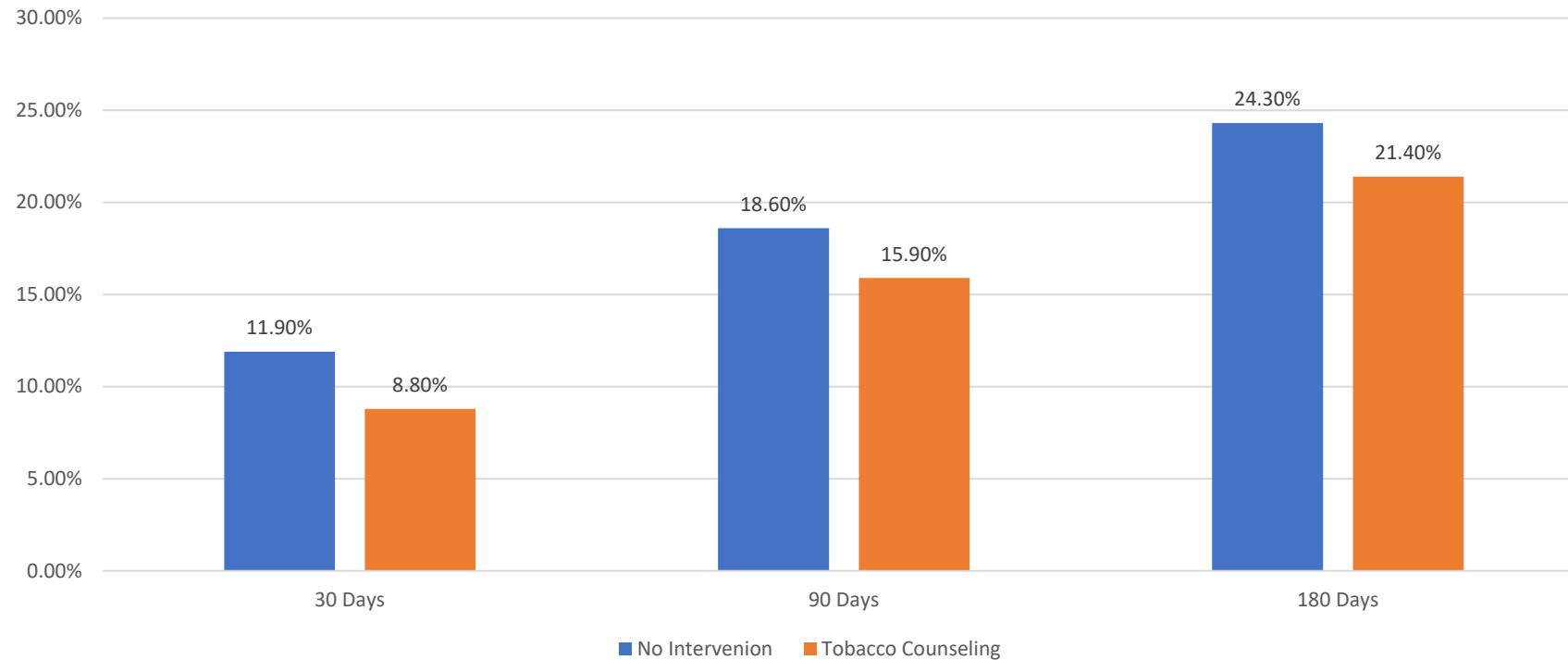
# Remember Both Groups Received Treatment

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- Enhanced Care incrementally better quit rate at 6 weeks: 23.5% (87/371)
- Basic Care quit rate at 6 weeks: 21.6% (29/134)
  
- Enhanced Care quit attempts: 66.3% (246/371)
- Basic Care quit attempts: 65.7% (88/134)

# TTP Readmission Data

Figure 1. Reduced Rates of Readmission after Tobacco Counseling

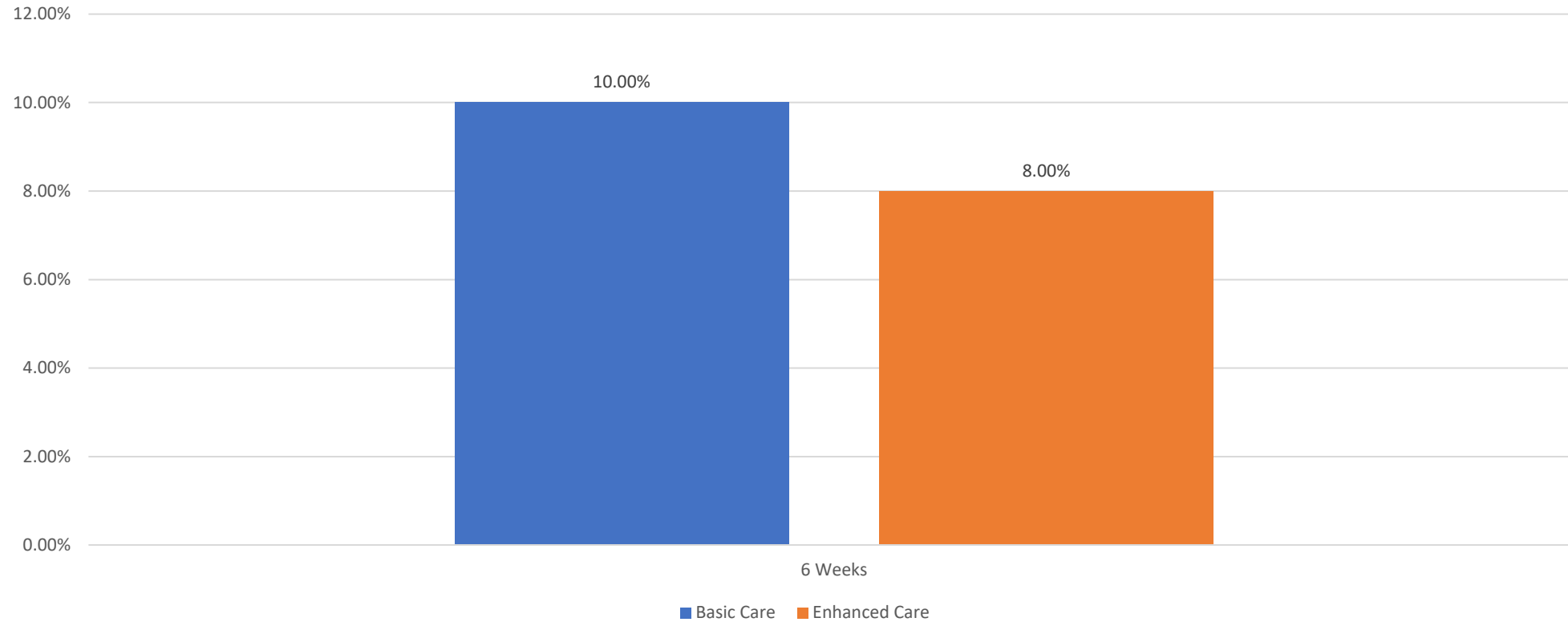


Cartmell et al. (2018) *Medical Care*.



# QI Study Data

Figure 1. Reduced Rates of Readmission after Tobacco Counseling



Raw QI Data Analyzed on 3/10/22

# TTP Represents Value Added to the RHN Hospitals

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- Average inpatient charges per patient of \$43,337
- 1,715 projected patients who smoke for Lancaster/Chester and 3,473 for Florence/Marion
- 25% of smokers uninsured: 868 in Florence/Marion and 428 in Lancaster/Chester
- TTP data show a reduction in readmission rate 2%
- This represents 17 patients preventing **\$736,729 unreimbursed charges in Florence/Lancaster** and 9 patients preventing **\$390,033 unreimbursed charges in Lancaster/Chester**
- Salaries of 2 MSW employees are ~\$150,000.00
- This program adds value and essentially pays for itself in the RHN hospitals

# Ways to Encourage Referrals to Tobacco Treatment

# BPA Screenshot (Triggered for All Patient Coded as Smoking in Epic Medical Record)

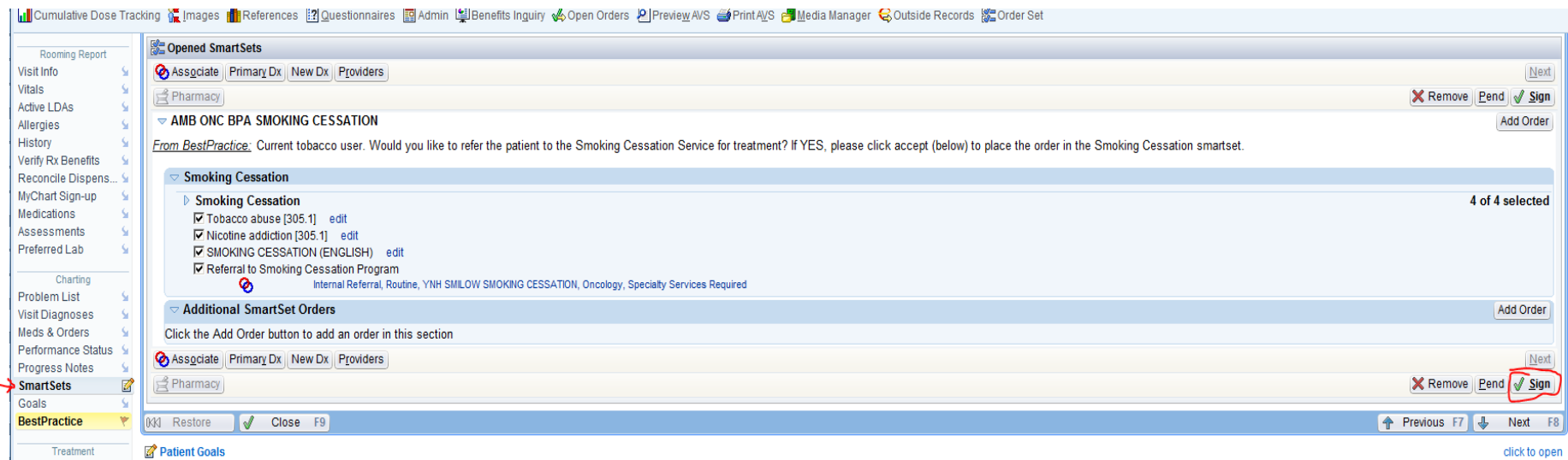
BestPractice Advisory - Zzbeacon,Violette

**⚠ Current tobacco user. Would you like to refer the patient to the Smoking Cessation Service for treatment? If YES, please click accept (below) to place the order in the Smoking Cessation smartset.**

Acknowledge reason:   

Open SmartSet: [AMB ONC BPA SMOKING CESSATION preview](#)

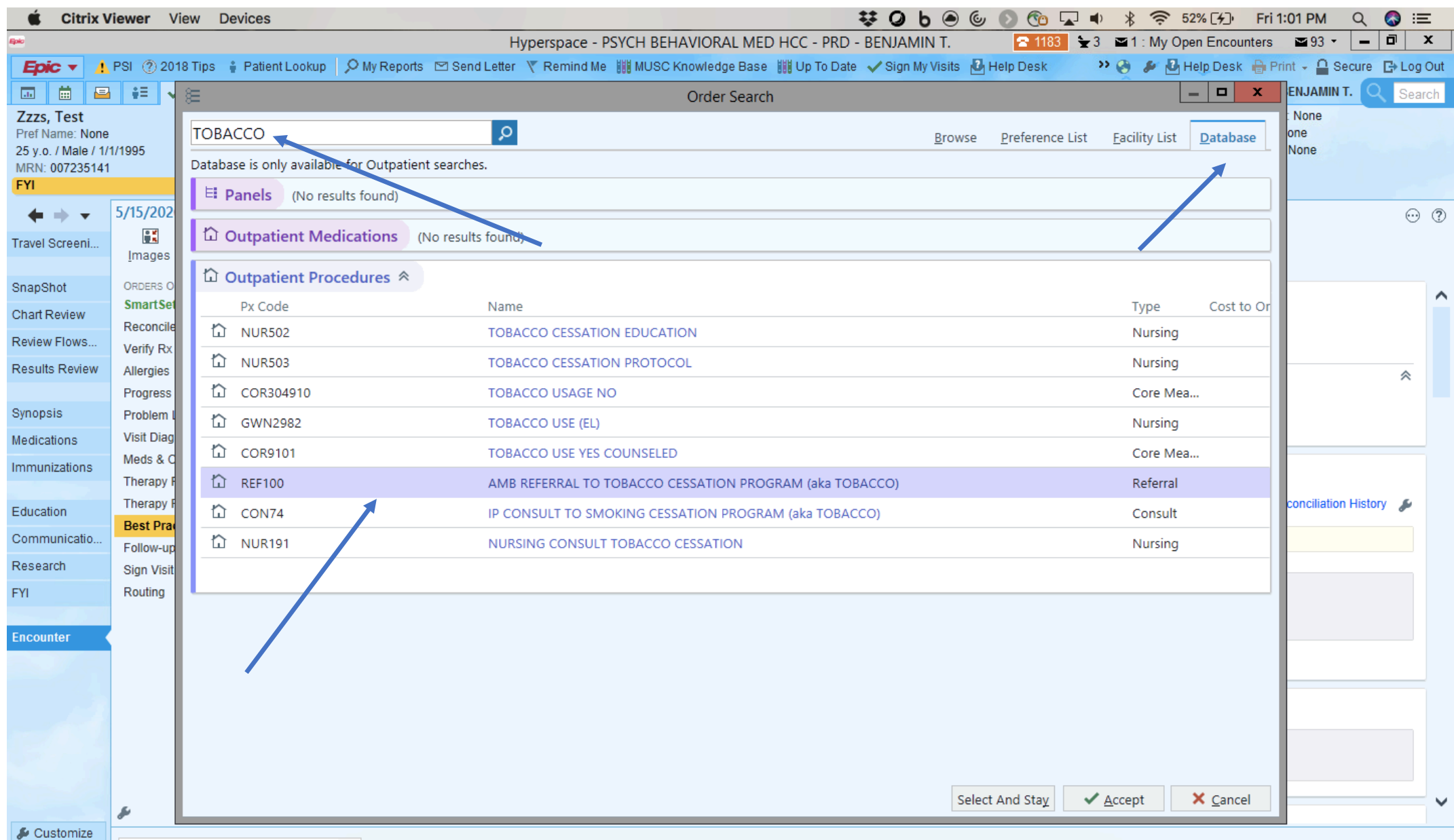
[↗ History activity to update smoking history](#)



- If **“Accept”** is chosen the SmartSet will open
- To order the referral **“Sign”** the Smartset
- The order will go to the Tobacco Treatment Service work queue, and the patient will be contacted and asked if they want smoking cessation treatment



# Referral to Tobacco Treatment



The screenshot shows the Epic EMR interface. The main window is titled 'Order Search' and displays search results for 'TOBACCO'. The search results are categorized into 'Panels', 'Outpatient Medications', and 'Outpatient Procedures'. The 'Outpatient Procedures' section is expanded, showing a list of procedures with columns for 'Px Code', 'Name', 'Type', and 'Cost to Or'. The procedure 'REF100' is highlighted in blue.

Px Code	Name	Type	Cost to Or
NUR502	TOBACCO CESSATION EDUCATION	Nursing	
NUR503	TOBACCO CESSATION PROTOCOL	Nursing	
COR304910	TOBACCO USAGE NO	Core Mea...	
GWN2982	TOBACCO USE (EL)	Nursing	
COR9101	TOBACCO USE YES COUNSELED	Core Mea...	
REF100	AMB REFERRAL TO TOBACCO CESSATION PROGRAM (aka TOBACCO)	Referral	
CON74	IP CONSULT TO SMOKING CESSATION PROGRAM (aka TOBACCO)	Consult	
NUR191	NURSING CONSULT TOBACCO CESSATION	Nursing	

At the bottom of the window, there are buttons for 'Select And Stay', 'Accept', and 'Cancel'.

# Pros and Cons of Different Types of Tobacco Treatment Programs

# Prototypical Treatment Programs

- As reviewed in the CHEST article:
  - Medical University of South Carolina
  - Smilow Cancer Hospital at Yale-New Haven/Yale Cancer Center
- Of note, these programs follow:
  - 5 A's model of: Ask, Advise, Assess, Assist, and Arrange (follow-up)
  - Prescribe medications consistent with most recent Clinical Practice Guidelines
    - *Fiore et al (2008) Agency for Healthcare Research and Quality Clinical Practice Guidelines*
    - *Leone et al (2020) American Thoracic Society Clinical Practice Guidelines*

# Attributes of Treatment Programs

- All programs provide rigorous behavioral counseling to patients with follow-up
- All of these programs use the Electronic Medical Record (EMR) to assess tobacco use
- All use the EMR as a referral mechanism

# Attributes of Treatment Programs

- See Palmer et al (2021) “Tobacco Treatment Programs Models” in *CHEST*
- There are PROS and CONS to each attribute!



Attribute	MUSC	Yale
Tobacco Assessment of all Patients (EMR)	Yes	Yes
Automatic Referral of All Patients with IVR Follow-up	Yes	No
In Person Counseling	Yes	Yes
Telephone/Video Counseling	Yes	Yes
Medications Prescribed	Yes	Yes
Biochemical Confirmation (Carbon Monoxide testing)	Yes	Yes
Free to Patient	Yes	No
Third Party Payment	Yes	Yes
Research Studies of New Treatments	Yes	Yes

Attribute	Pro	Con
Tobacco Assessment of All Patients (EMR)	Data obtained for all patients	Brevity
Automatic Referral of All Patients	Offer treatment to all patients	Might be difficult in a very large hospital
In Person Counseling	Better quit rates	More costly to the hospital
Telephone Counseling	Easier access of care to patients	Cannot bill third parties

Attribute	Pro	Con
Medications Prescribed	Better quit rates	More costly to employ a prescribing clinician
Biochemical Confirmation	More accurate quit rates, can bill for testing	Costs money to obtain and maintain machines and/or tests
Free to Patient	Patient satisfaction, ability to treat all patients	Hospital needs to pay for care

Attribute	Pro	Con
Third Party Payment	Sustainability	Cannot treat all patients
Research Studies of New Treatments	Interest of the hospital and/or academic institution	Additional work for staff and need to obtain grant funding

# Billing for Outpatient Care – REVENUE BASED PROGRAM

# Can You Break Even?

- Sample E&M Psychiatric Fee Schedule:
  - 99201=\$110.00; 99211=\$51.00
  - 99202=\$188.00; 99212=\$110.00
  - 99203=\$272.00; 99213=\$183.00
  - 99204=\$415.00; 99214=\$268.00
  - 99205=\$515.00; 99215=\$360.00
- Breath CO Code:
  - 94250=\$400.00

# Can You Break Even?

- Smoking Cessation Codes:
  - 99406=\$50.00
  - 99407=\$96.00
  
- Psychotherapy Codes:
  - 90832=\$210.00
  - 90833=\$54.00
  - 90834=\$317.00
  - 90836=\$90.00
  - 90837=\$427.00
  - 90838=\$141.00



# Can You Break Even?

- Typically reimbursement is 30-40% of billed fees
- If you typically bill 99214 (\$268) and 94250 (\$400) = \$668 x 35% = \$234 per visit
- If you typically bill 90837 (\$427) = \$427 x 35% = \$149.45 per visit
- At approximately \$175/visit with 30 visits per week for 50 weeks = \$262,500

# Issues Related to Billing

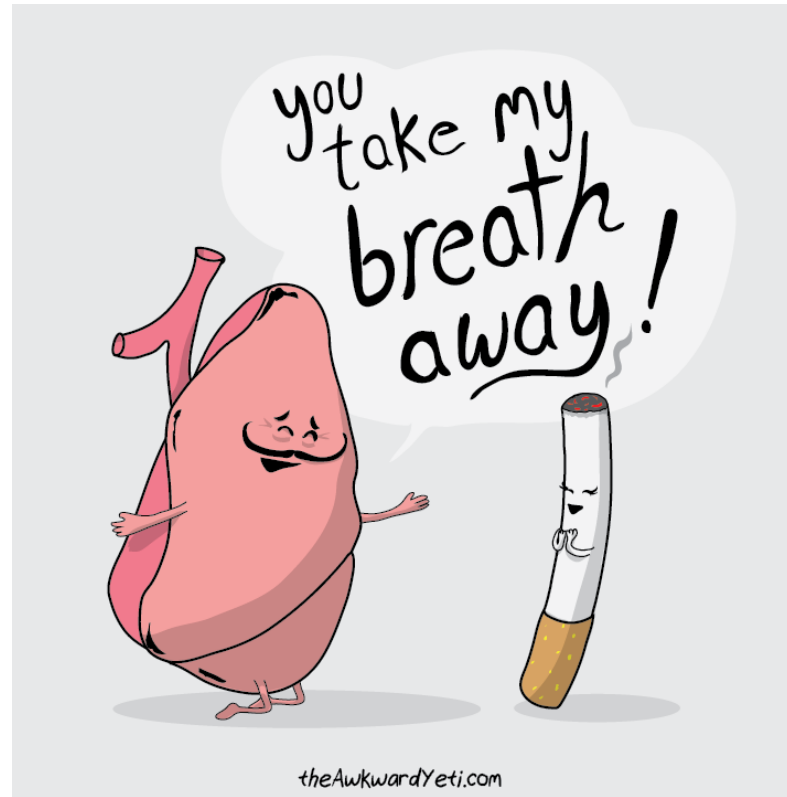
- You need a full-time patient coordinator
- Your staff needs to be licensed independent practitioners (mid-level, psychologist, pharmacist, physician)
- You need to field referrals from all areas of medicine



**“With great power comes great responsibility”**



# Questions?



## Hollings Cancer Center

An NCI-Designated Cancer Center