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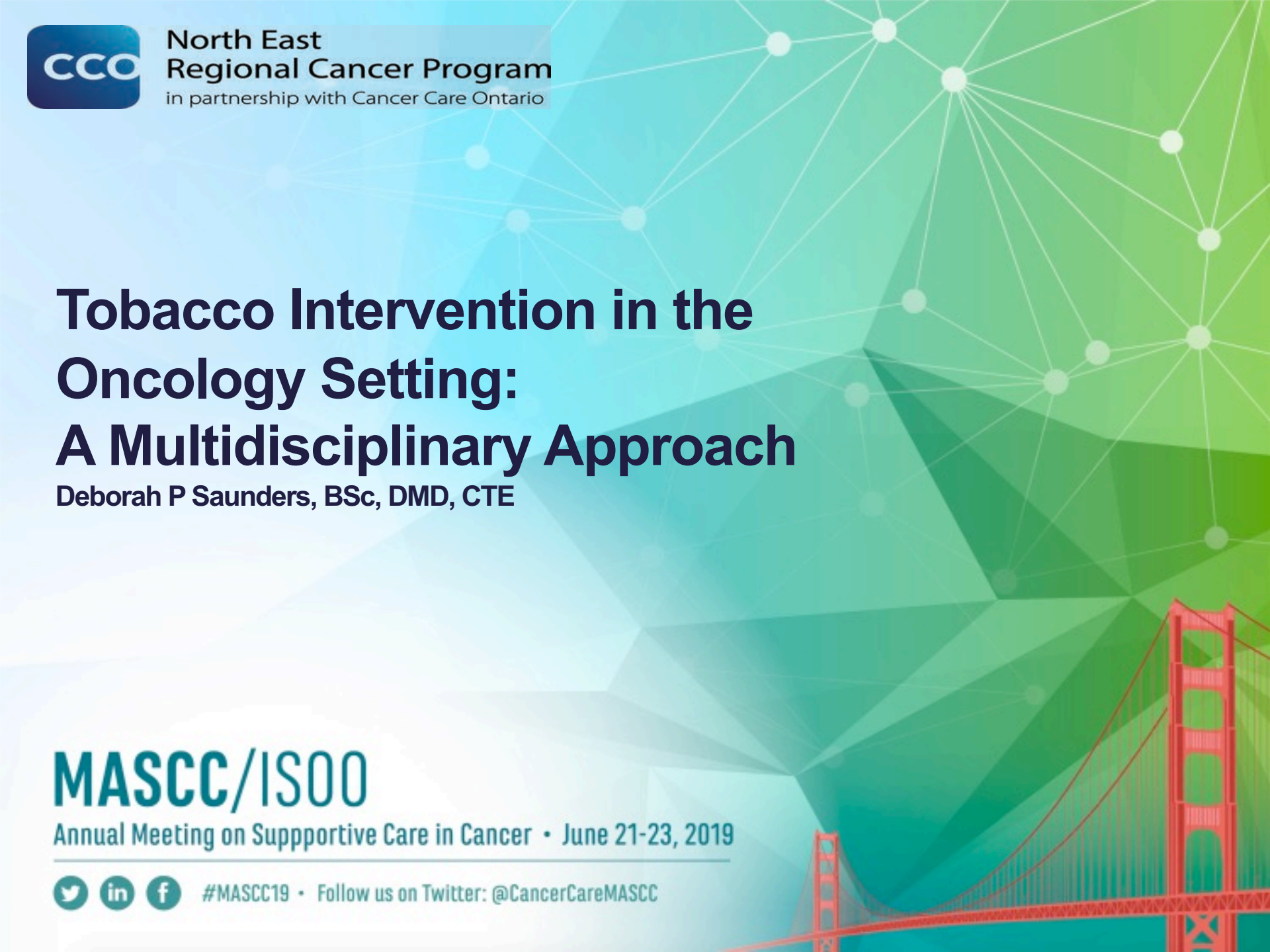
Tobacco Intervention in the Oncology Setting: A Multidisciplinary Approach

Deborah P Saunders, BSc, DMD, CTE



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Faculty Disclosure: Deborah Saunders

	No, nothing to disclose
X	Yes, please specify:

Company Name	*Honoraria/ Expenses*	*Consulting/ Advisory Board*	*Funded Research*	*Royalties/ Patent*	*Stock Options*	*Ownership/ Equity Position*	*Employee*	*Other (please specify)*
Amgen	x	X	x					
Pfizer	X							
Dermtreat	x	X						
Alira Health		X						
Johnson and Johnson	X							

Smoking and Cancer

Despite the established causal relationship between tobacco smoking and cancer, many cancer patients continue to smoke after diagnosis.

Florou, A., Gkiozos, I., Tsagouli, S., Souliotis, K., & Syrigos, K. (2014). Clinical Significance of Smoking Cessation in Subjects With Cancer: A 30-Year Review. *Respiratory Care*, *59*(12), 1924-1936.

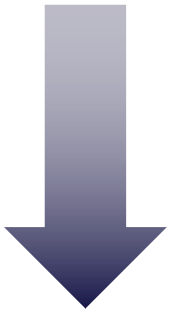
Smoking and Cancer

- Smoking rates are high even in patients with cancers strongly related to smoking.
  - 23-35% in head and neck cancer
  - 13-20% in lung cancer
- Smoking accounts for 30% of all cancer deaths and 87% of lung cancer deaths.

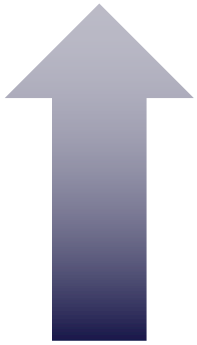
Nayan, S., Gupta, M., & Sommer, D. (2011). Evaluating Smoking Cessation Interventions and Cessation Rates in Cancer Patients: A Systematic Review and Meta-Analysis. *ISRN Oncology*, *2011*,

Zon, R., Goss, E., Vogel, V., Chlebowski, R., Jatoi, I., & Robson, M. et al. (2008). American Society of Clinical Oncology Policy Statement: The Role of the Oncologist in Cancer Prevention and Risk Assessment. *Journal Of Clinical Oncology*, *27*(6), 986-993.

Potential health benefits of smoking cessation



- All cause and cancer specific mortality
- Risk of wound complications and post-operative infections
- Toxicity with radiation therapy
- Risk of recurrence and second primary cancers



- Response to anti-cancer therapies in a variety of cancer types
- Effectiveness of molecular targeted drugs
- Survival
- Quality of life

Challenges in the Oncology Setting

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MASCC/ISOO 2019
SAN FRANCISCO
Supportive Care in Cancer
21-23 JUNE
ANNUAL MEETING

CURRENT ONCOLOGY
A Canadian Cancer Research Journal

REVIEW ARTICLE

How can we better help cancer patients quit smoking? The London Regional Cancer Program experience with smoking cessation

S.M. Davidson MD,* R.G. Boldt MSEd MLIS,† and A.V. Louie MD PhD*

ABSTRACT

Background Because continued cigarette smoking after a cancer diagnosis is associated with detrimental outcomes, supporting cancer patients with smoking cessation is imperative. We evaluated the effect of the Smoking Cessation Program at the London Regional Cancer Program (LRCP) over a 2-year period.

Methods The Smoking Cessation Program at the LRCP began in March 2014. New patients are screened for tobacco use. Tobacco users are counselled about the benefits of cessation and are offered referral to the program. If a patient accepts, a smoking cessation champion offers additional counselling. Follow-up is provided by interactive voice response (IVR) telephone system. Accrual data were collected monthly from January 2015 to December 2016 and were evaluated.

Results During 2015–2016, 10,341 patients were screened for tobacco use, and 18% identified themselves as current or recent tobacco users. In 2015, 84% of tobacco users were offered referral, but only 13% accepted, and 3% enrolled in IVR follow-up. At the LRCP in 2016, 77% of tobacco users were offered referral to the program, but only 9% of smokers accepted, and only 2% enrolled in IVR follow-up.

Conclusions The Smoking Cessation Program at the LRCP has had modest success, because multiple factors influence a patient's success with cessation. Limitations of the program include challenges in referral and counselling, limited access to nicotine replacement therapy (NRT), and minimal follow-up. To mitigate some of those challenges, a pilot project was launched in January 2017 in which patients receive free NRT and referral to the local health unit.

CURRENT ONCOLOGY
A Canadian Cancer Research Journal

ORIGINAL ARTICLE

Lessons learned implementing a province-wide smoking cessation initiative in Ontario's cancer centres

W.K. Evans MD,* R. Truscott MHSc RD,† E. Cameron MPH,† A. Peter MA,† R. Reid MD PhD MBA,‡ P. Selby MBBS,§ P. Smith PhD,|| and A. Hey MD#

Conclusions Regional smoking cessation champions, commitment from Cancer Care Ontario senior leadership, a provincial secretariat, and guidance from smoking cessation experts have been important enablers of early success. Data capture has been difficult because of the variety of information systems in use and non-standardized administrative and clinical processes. Numerous challenges remain, including increasing physician engagement; obtaining funding for key program elements, including in-house resources to support smoking cessation; and overcoming financial barriers to access nicotine replacement therapy. Future efforts will focus on standardizing processes to the extent possible, while tailoring the approaches to the populations served and the resources available within the individual regional cancer programs.

Key Words Smoking cessation, program implementation

Curr Oncol. 2017 June;24(3):e185-e190 www.current-oncology.com

Motivation to change


If you were in the middle of the room the whole time, why can we not find a single witness to corroborate your testimony?
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What Motivates Government: Action and $$$

Cancer Medicine

Open Access

ORIGINAL RESEARCH

Economic evaluation of smoking cessation in Ontario's regional cancer programs

Sandjar Djalalov[1], Lisa Masucci[2], Wanrudee Isaranuwatchai[2,3,4,5], William Evans[3,6], Alice Peter[3], Rebecca Truscott[3], Erin Cameron[3], Nicole Mittmann[3,4,7], Linda Rabeneck[3,4], Kelvin Chan[3,4,5] & Jeffrey S. Hoch[2,4,8]

Compared two smoking cessation programs:

basic approach to smoking cessation in Regional Cancer Programs, which includes only screening, advice and referral

best practice approach, which includes the basic program plus pharmacological therapy (specifically varenicline), counseling (once a week for 15 min with a smoking cessation nurse over 12 weeks), and follow-up

Cancer Medicine

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In cancer patients, the best practice smoking cessation program for smokers was more effective and more costly than the basic smoking cessation program.

(0.03 QALYs gained for males and 0.02 for females)

(an additional $101 per patient for males and $41 per patient for females)

Cancer Medicine

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Results are consistent with previous economic evaluations that used a similar model structure and intervention

Bertram, M. Y., S. S. Lim, A. L. Wallace, and T. Vos. 2007. Costs and benefits of smoking cessation aids: making a case for public reimbursement of nicotine replacement therapy in Australia. Tob. Control 16:255–260.

Guerriero, C., J. Cairns, I. Roberts, A. Rodgers, R. Whittaker, and C. Free. 2013. The cost-effectiveness Of smoking cessation support delivered by mobile phone text messaging: Txt2stop. Eur. J. Health Econ. 14:789–797.

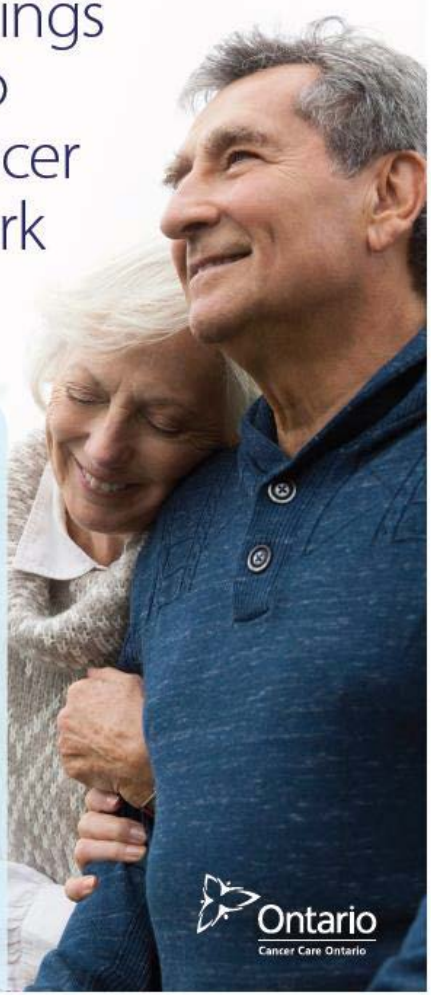
These models showed that among the range of interventions, counseling (with follow-up) plus pharmacological therapy was the most cost-effective Intervention compared to nicotine patch

Bolin, K., K. Wilson, H. Benhaddi, E. De Nigris, S. Marbaix, A. C. Mork, et al. 2009. Cost-effectiveness of varenicline compared with nicotine patches for smoking cessation—results from four European countries. Eur. J. Public Health 19:650–654.

Woolacott, N. F., L. Jones, C. A. Forbes, L. C. Mather, A. J. Sowden, F. J. Song, et al. 2002. The clinical effectiveness and cost-effectiveness of bupropion and nicotine replacement therapy for smoking cessation: a systematic review and economic evaluation. Health Technol. Assess. 6:1–245.

Cancer Care Ontario

Quitting smoking is one of the best things you can do to help your cancer treatment work better.



Quitting smoking will help, whether you are having:

- **surgery**
- **radiation therapy or**
- **chemotherapy**

The best way to quit smoking is using both counselling and medication, which can triple your chance of success.

Help your cancer treatment work better.

Talk to your cancer care team about how to quit smoking or stay smoke free.

It's never too late to quit!

Ontario
Cancer Care Ontario

A systematic approach to smoking cessation in regional cancer centres in Ontario, Canada

William K. Evans[1,2], Erin Cameron[1], Mohammad Haque[1], Naomi Schwartz[1], Sahara Khan[1], Deborah Saunders[3], & Rebecca Truscott[1]

[1] Cancer Care Ontario, Toronto, Ontario. [2] McMaster University, Hamilton, Ontario. [3] Health Sciences North, Sudbury, Ontario.

Background

- It is estimated that smoking is responsible for 30% of all cancer deaths in Canada.
- Cancer patients who continue to smoke:
  - Gain less benefit from their cancer treatments;
  - Experience greater treatment-related toxicities;
  - Are at increased risk of cancer recurrence and second primary cancers; and
  - Experience poorer quality of life.
- Evidence suggests that the risk of dying could be lowered by 30-40% by quitting smoking at the time of cancer diagnosis.
- Despite awareness of the negative health effects of continued smoking after a diagnosis of cancer, a systematic approach to help newly diagnosed cancer patients in cancer centres to quit smoking is uncommon.

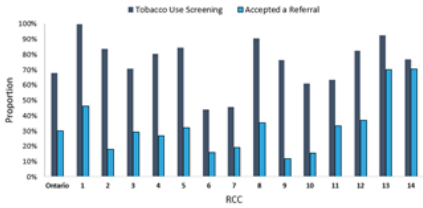
Performance Improvement

- During 2014/15, just over 50% of cancer patients were screened for tobacco use, and referral acceptance was low.
- Recent efforts to improve performance include:
  - The transition to a 3 As (Ask, Advise, Act) model;
  - Adding 'Accepted a Referral' (the proportion of smokers accepting a referral to smoking cessation services) as a performance metric; and
  - Use of an "opt-out" approach to referrals, where tobacco users are automatically referred to cessation services, unless they refuse.
- An environmental scan and site visits resulted in RCC site-specific improvement plans.
- Scripts were developed to help healthcare providers implement the 3 As with patients (see Figure 1).

Results

- During fiscal year 2018/19, the majority of RCCs were exceeding the 'Tobacco Use Screening' target of 75% and the 'Accepted a Referral' target of 25% (see Figure 2).

Figure 2: Smoking Cessation Performance Indicators, Ontario and by Regional Cancer Centre (RCC), FY 2018-19



Methods

- In 2012, Cancer Care Ontario established a Framework to implement smoking cessation in all 14 regional cancer centres (RCCs) in the province of Ontario, Canada. The Framework included:
  - Use of the 5 As (Ask, Advise, Assess, Assist, Arrange) model for smoking cessation;
  - Recruitment of regional champions to promote the program; and
  - Data collection and reporting.
- All new ambulatory cancer patients are screened for smoking status, advised on the benefits of cessation, and offered a referral to cessation services for support.
- 'Tobacco Use Screening' rates (the proportion of new ambulatory cancer patients screened for smoking status) became a performance metric to drive implementation, and were reviewed quarterly with provincial and regional leaders.

Figure 1: Revised Program Model – The 3 As (Ask, Advise, Act)

Conclusion

- To improve program efficiency and impact, CCO's smoking cessation initiative transitioned from a 5 As to a 3 As model, and introduced an opt-out approach to referrals.
- Frontline staff are adopting the simplified approach, and results show a promising increase in the number of cancer patients who are screened for tobacco use, and who ultimately accept referrals for smoking cessation services.
- The opt-out approach is improving 'Accepted a Referral' rates across the province

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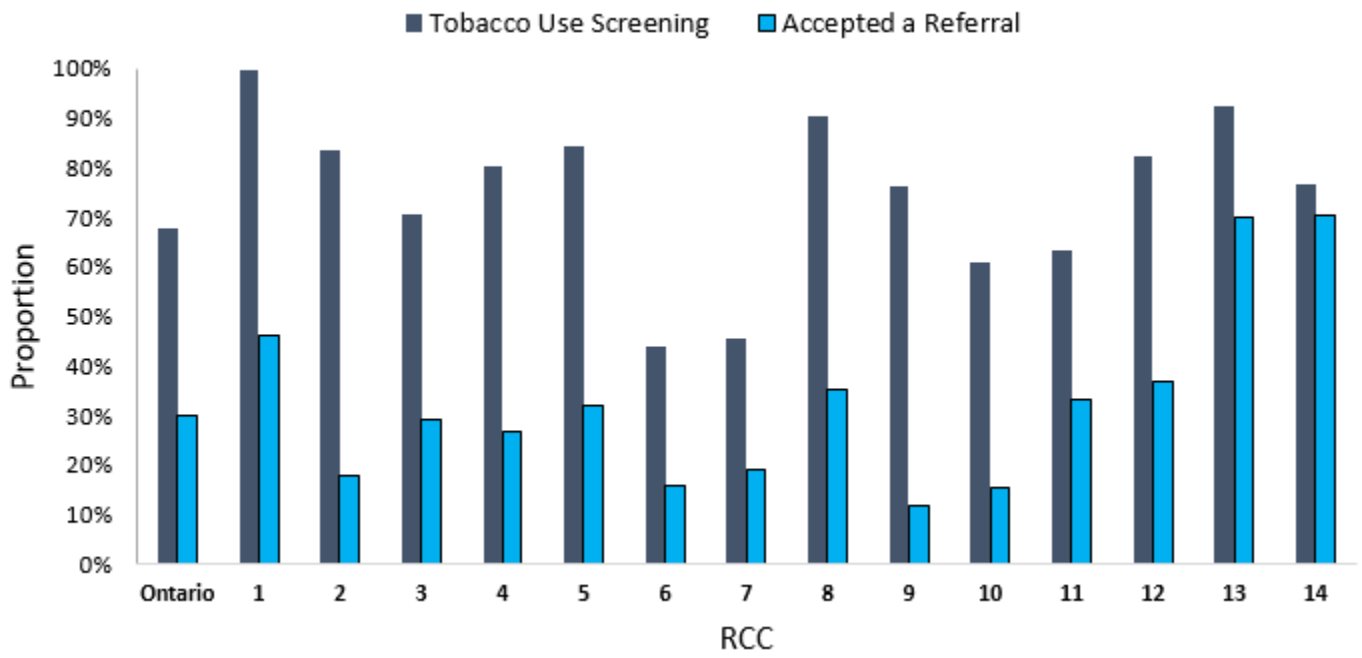


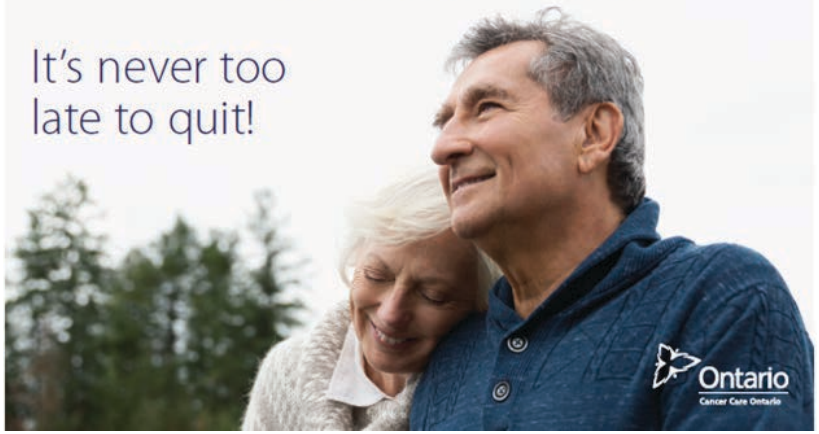
Figure 2: Smoking Cessation Performance Indicators, Ontario and by Regional Cancer Centre (RCC), FY 2018-19

Revised Program Model

Cancer Care Ontario

The 3A's:
Brief Intervention for Smoking Cessation

1 Ask	2 Advise	3 Act
All new cancer patients	**Current Smokers/ Recent Quitters**	**Current Smokers/ Recent Quitters**
"Do you smoke cigarettes? Have you used any form of tobacco in the last 6 months?"	"Quitting or reducing smoking/Staying quit is one of the best things you can do to help your cancer treatment work better, and reduce side effects. Being smoke-free will also reduce the chance of your cancer coming back, or getting another kind of cancer."	"I understand that quitting or reducing smoking/ staying quit can be hard, but it's easier if you have help. I'm going to refer you to..." • Initiate referral to smoking cessation service(s). • Document **Ask, Advise, & Act** for Cancer Care Ontario's data collection.



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- The opt-out approach is improving 'Accepted a Referral' rates across the province

Opt in vs. Opt Out Approach

Health care provider tells you:

Your blood pressure is well above normal…

She asks you if you are ready to change it within the next 30 days

You meet the criteria for diabetes…

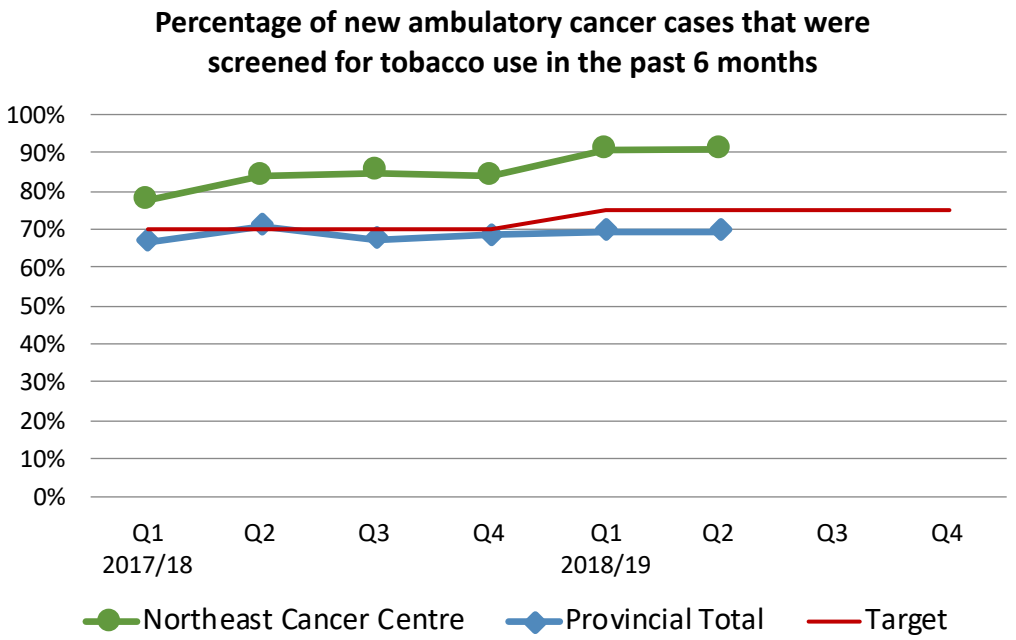
He asks you if you are willing to address it at this time

Do we *really* need to assess tobacco users' willingness to quit? Presented by Kim Richter at the 9th Annual Ottawa Conference: State of the Art Clinical Approaches to Smoking Cessation, 2017

Using the Opt in vs Opt Out approach in Oncology

- **Ask**: Do you smoke or have you smoked in the last six months? If yes:
- **Brief advice**: Stopping is the best thing you can do to improve your health. I understand that it can be hard to stop, but I (we) can help you
- **In oncology**: Stopping smoking will enable the cancer treatments to work better and reduce the side effects. To get the best results from the treatment that we are going to give you, I need you to stop smoking. I'm going to refer you to…

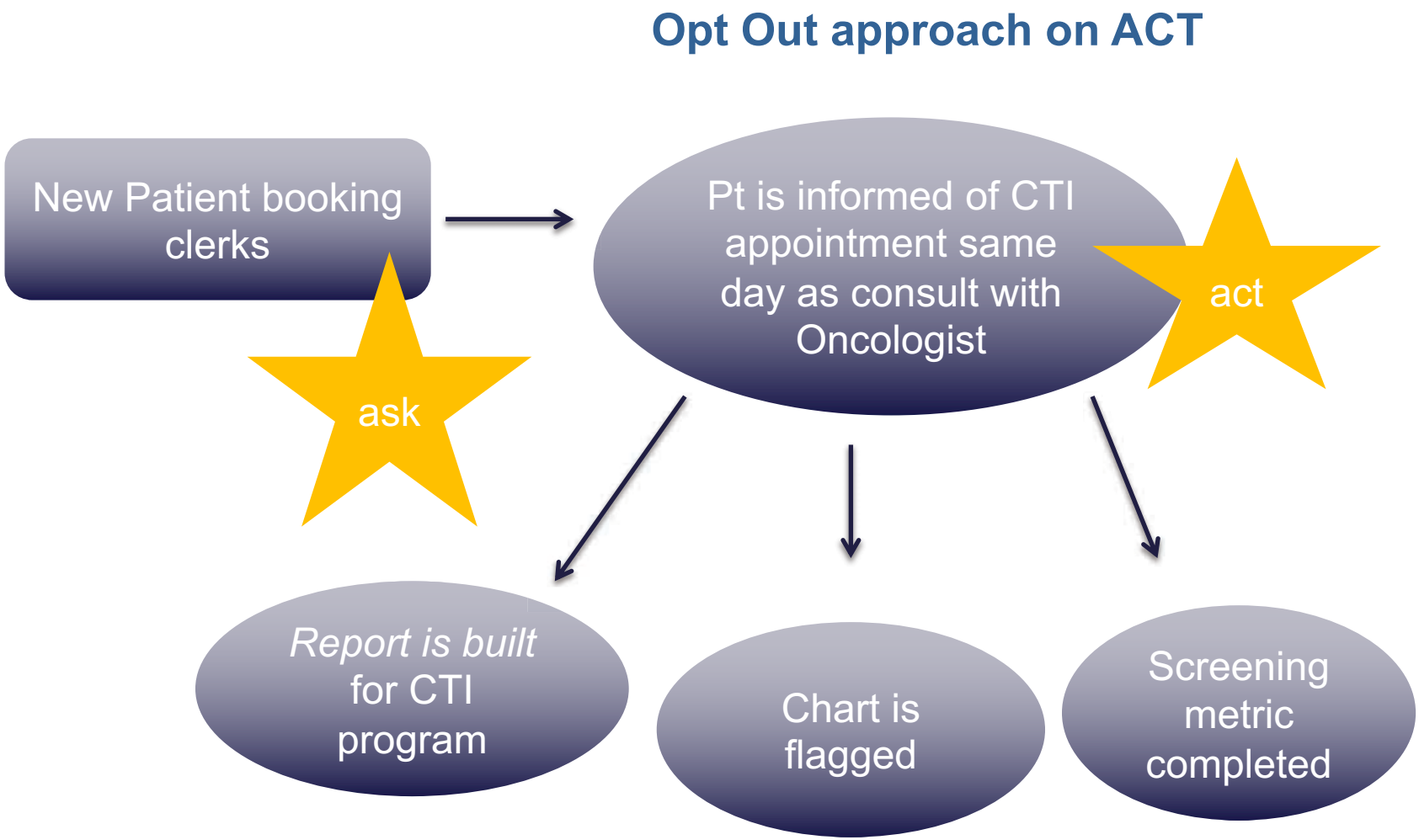
What Motivates Management and Staff: Metrics



Section 1. Percentage of new ambulatory cancer cases that were screened for tobacco use in the past 6 months.

Percentage of cases screened for tobacco	2017/18				2018/19				Current Quarter VS Same Quarter Last Year		% Variance from target (75%)	12-Month Aggregate for Scorecard
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017/18	2018/19		
Northeast Cancer Centre	77.6%	83.9%	84.8%	83.6%	90.7%	90.6%			83.9%	90.6%	**20.7%**	**87.7%**
Provincial Total	66.6%	70.7%	67.3%	68.4%	69.6%	69.6%			70.7%	69.6%	**-7.3%**	**68.7%**

Multidisciplinary Approach: Prior to Clinic Visit



Multidisciplinary Approach: Prior to Clinic Visit

Opt Out on ADVISE

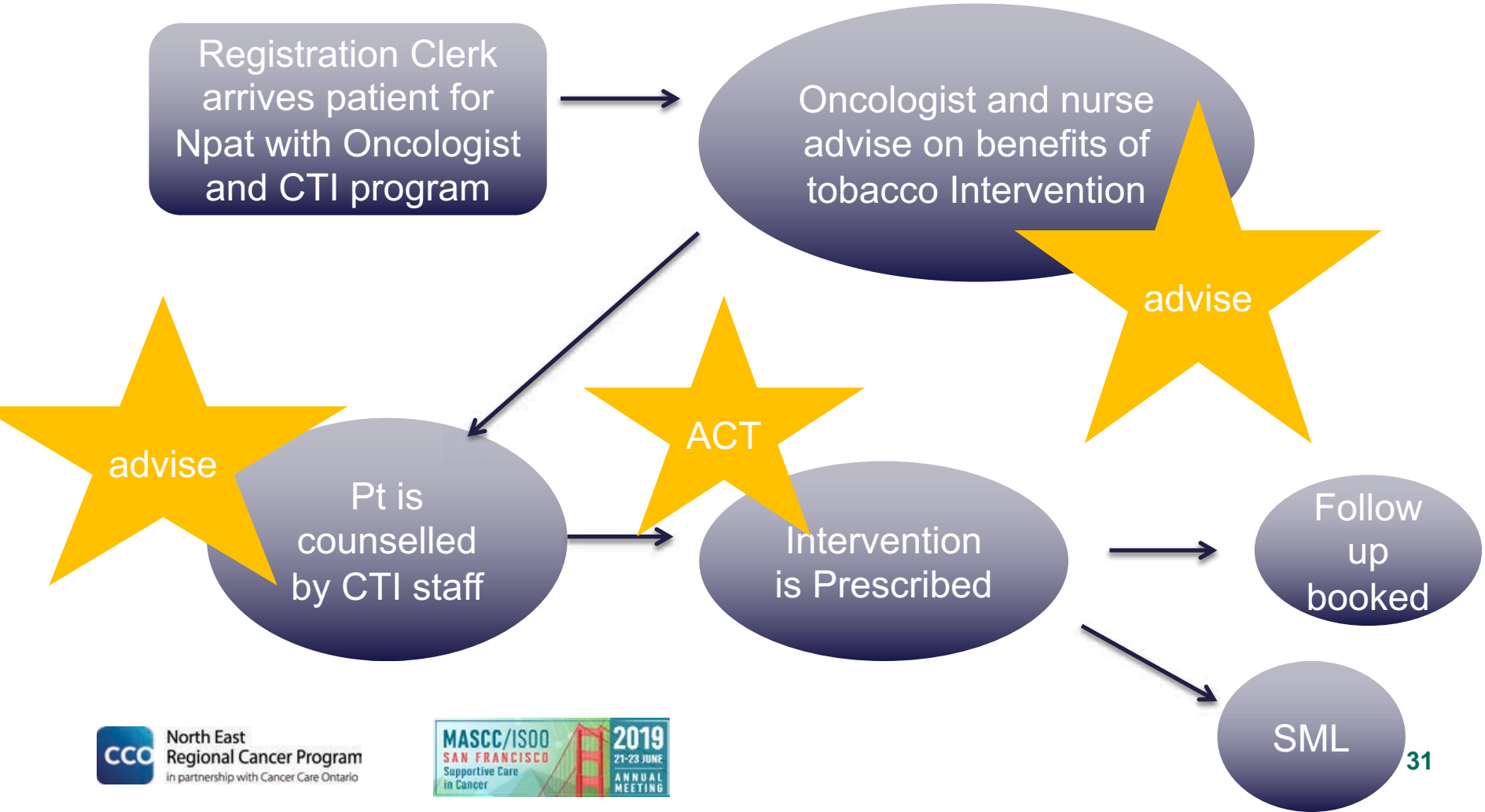
Nurse calls Npat and takes Medical Hx and Tobacco Use

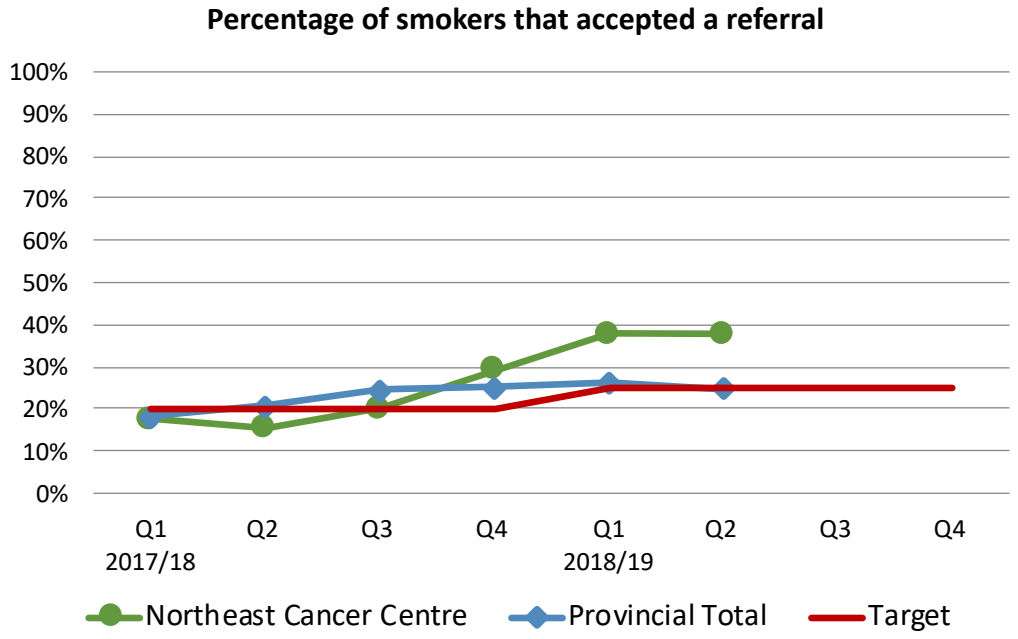
"The benefits of reducing your tobacco intake while on cancer treatments will benefit how well your cancer treatment works"

"You have been booked today as well with Dr. Saunders at "Dr. Oncologist's " request for CTI

Multidisciplinary Approach: Day of Clinic Visit

Opt Out on ADVISE and ACT





Section 2. Percentage of smokers that accepted a smoking cessation referral.

Percentage accepted a referral among smokers	2017/18				2018/19				Current Quarter VS Same Quarter Last Year		% Variance from target (25%)	12-Month Aggregate for Scorecard
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017/18	2018/19		
Northeast Cancer Centre	17.7%	15.4%	20.0%	29.4%	37.7%	37.8%			15.4%	37.8%	**51.4%**	**30.1%**
Provincial Total	18.3%	20.6%	24.5%	25.1%	26.3%	25.0%			20.6%	25.0%	**-0.2%**	**25.2%**

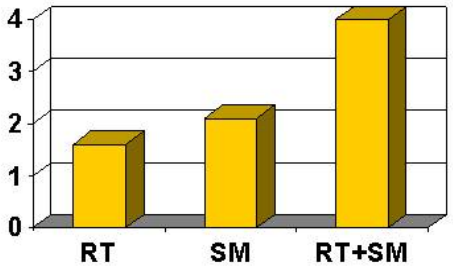
What Motivates the Clinician

What Motivates the Oncologist: 2nd Malignancy

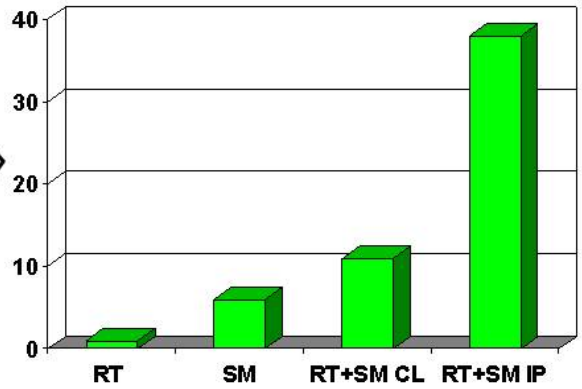
Slide courtesy of Lawson Eng

Prostate, Breast, and 2nd Malignancy

- Bladder cancer risk in 9780 prostate cancer patients (CaPSURE)[1]
  - HR 1.6 with RT alone
  - HR 2.1 with smoking
  - HR 4 with smoking + RT



- Lung cancer risk in 477 breast cancer patients (Conn)[2]
  - RT alone no increased risk
  - HR 6 with smoking alone
  - HR 19 (11 cont., 38 ips.) with smoking + RT



1. Boorjian *J Urol* 177:883, 2007
2. Kaufman *J Clin Oncol* 26:392, 2008

What motivates the Oncologist: Outcomes

Irinotecan

Lowered dose-normalized area under plasma concentration-time curve in smokers (median, 3.9 vs 28.7 ng h/ml/mg; p= .001) compared to nonsmokers;
Grade 3 to 4 treatment-induced neutropenia: 6% smokers, 30% nonsmokers (OR and 0.10; 95% 0.02 to 0.43; p< .001)

Van der Bol et al. J Clin Oncol 2007; 25: 2719- 2726

Erlotinib

Lower overall response in smokers vs never smokers (3.9 vs 24.7%; p, 0.001); twice the normal dose required to produce needed circulating levels in smokers versus non-smokers

Shepherd FA et al NEJM 2005; 353: 123-132

What motivates the Oncologist: Complications

Cervical cancer

3489 patients treated with radiotherapy

Current smoking increased the risk of rectal, bladder and small bowel complications

Efel PJ et al. J Clin Oncol 2002; 20:3651-7

Prostate cancer

836 patients

Smoking following radiation treatment was associated with increased risk of diarrhea, abdominal cramps, defecation urgency and sensation of incomplete emptying

Alsadius D et al. Radiother Oncol 2011; 101:495-501

What Motivates the Patient

What Motivates Patients: their diagnosis

Research indicates that after cancer diagnosis, motivation and intention for smoking cessation are greatly increased, particularly in patients with cancer types strongly related to smoking, such as head and neck cancers and lung cancer

Gritz, E., Fingeret, M., Vidrine, D., Lazev, A., Mehta, N., & Reece, G. (2006). Successes and failures of the teachable moment. *Cancer*, *106*(1), 17-27. http://dx.doi.org/10.1002/cncr.21598

A cancer Diagnosis is a teachable moment and is effective

- Two-year quit rate was higher among the 772 smokers who were diagnosed with cancer (**31.3%)** compared to smokers not diagnosed with cancer (n= 11,410)(**19.5%**)
- Similar difference in quit rates noted at 4 years (**43.0%** versus **33.8%**)
- **Conclusions:** diagnosis of cancer, even a cancer not strongly related to smoking and with a relatively good prognosis may be associated with increased quitting that is sustained well after diagnosis. Results support the hypothesis that a cancer diagnosis represents a teachable moment

Westmaas JL et al. J Clin Oncol 33:1647-1652, 2015

What motivates the patient: Cancer Pain

Subjects who continue to smoke post diagnosis report more severe pain than those who have never smoked and greater pain-related functional impairment

Ditre and Brandon 2008; Daniel *et al.* 2009; Ditre *et al.* 2011

What Motivates the Patient: Outcomes

Smoking after cancer diagnosis is related to:

- reduced treatment efficacy
- reduced survival
- increased risk for second primary malignancies
- deterioration of quality of life.

Florou, A., Gkiozos, I., Tsagouli, S., Souliotis, K., & Syrigos, K. (2014). Clinical Significance of Smoking Cessation in Subjects With Cancer: A 30-Year Review. *Respiratory Care*, *59*(12), 1924-1936. http://dx.doi.org/10.4187/respcare.02559

Patient Awareness of Smoking and Cancer

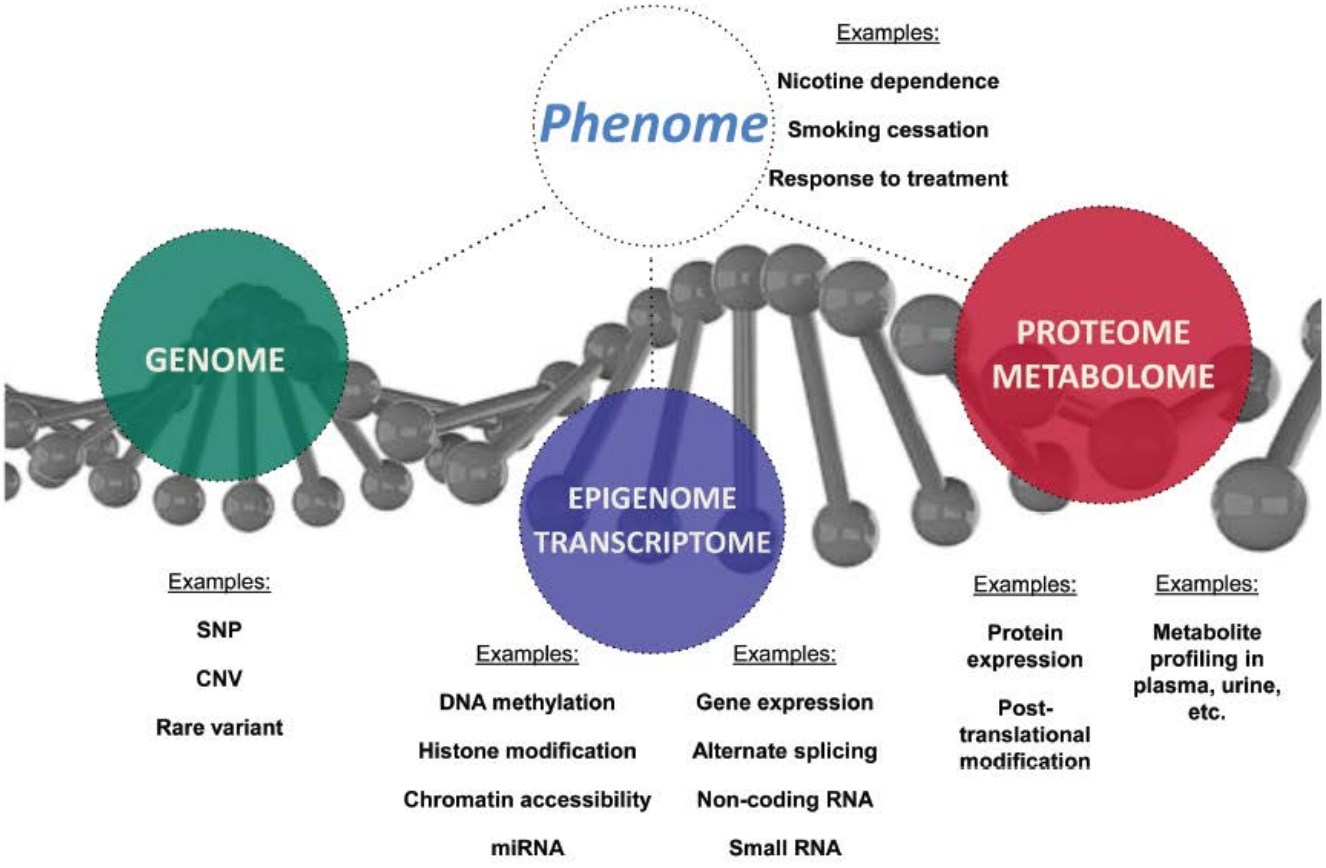
Nicotine & Tobacco Research, 2018, 414–424
doi:10.1093/ntr/ntx097
Review
Received January 6, 2017; Editorial Decision April 24, 2017; Accepted May 9, 2017

Review

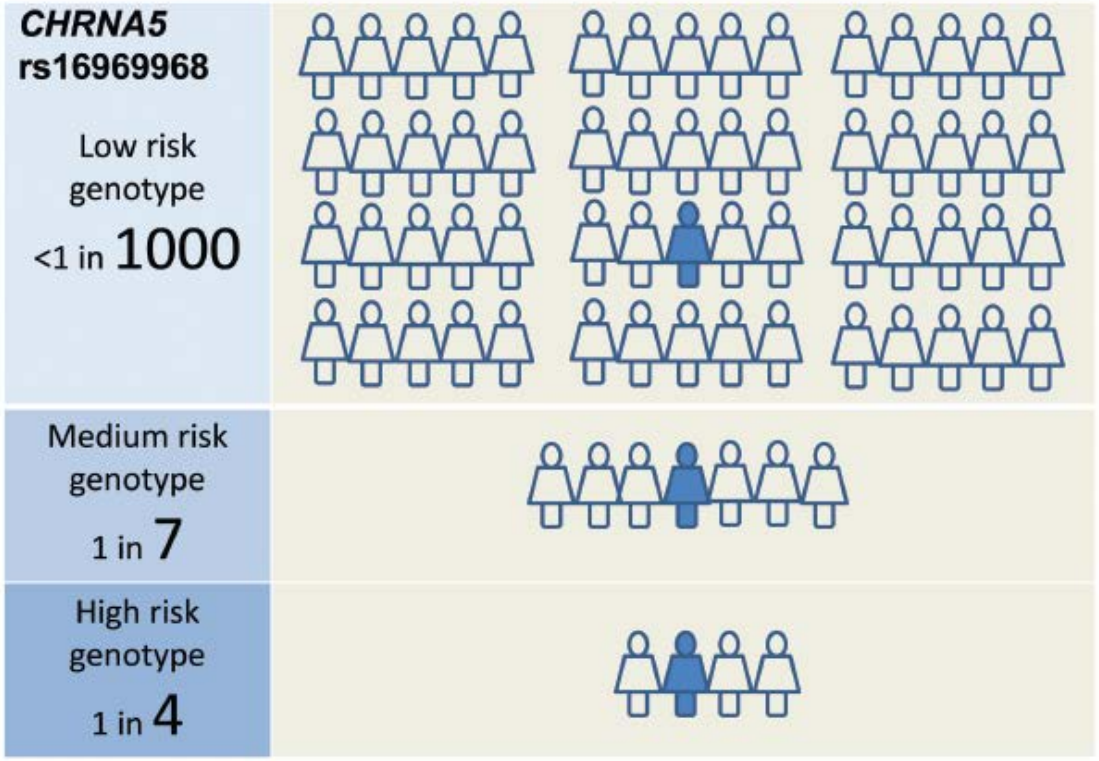
Leveraging Genomic Data in Smoking Cessation Trials in the Era of Precision Medicine: Why and How

Li-Shiun Chen MD, MPH, ScD[1], Laurie Zawertailo PhD[2], Thomas M. Piasecki PhD[3], Jaakko Kaprio MD, PhD[4], Marilyn Foreman MD, MS[5], Hannah R. Elliott PhD[6], Sean P. David MD, DPhil[7], Andrew W. Bergen PhD[8], James W. Baurley PhD[8], Rachel F. Tyndale PhD[9], Timothy B. Baker PhD[10], Laura J. Bierut MD[1], Nancy L. Saccone PhD[11]; On behalf of the Genetics and Treatment Workgroup of the Society for Research on Nicotine and Tobacco (SRNT)

Implications: This article outlines a framework for the consistent integration of biological data/samples into smoking cessation pharmacotherapy trials, aligned with the objectives of the recently unveiled Precision Medicine Initiative. Our goal is to encourage and provide support for treatment researchers to consider biosample collection and genotyping their existing samples as well as integrating genetic analyses into their study design in order to realize precision medicine in treatment of nicotine dependence.



single-nucleotide polymorphism (SNP), copy number variation (CNV), micro RNA (miRNA).



Blue : patients who benefit; Clear: patients who fail to benefit (Chen et al, 2012; Bergen et al, 2013, both studies of European Ancestry)..

Key Take Home Points

- Tobacco Intervention in the Oncology Setting is multidisciplinary
- Endorsing excellence at each point of patient contact is essential
- Advocating for the patient in your unique role in their journey will motivate you and others as well as the patient to successful cessation
- Time is of essence in the Oncology setting and the Opt Out Approach to cessation can help contribute to successful timely cessation
- Congratulate and Acknowledge successes in the team to which the patient is also part of.
- Keep messaging consistent

Questions?

North East Regional Cancer Program
in partnership with Cancer Care Ontario

MASCC/ISOO 2019 SAN FRANCISCO Supportive Care in Cancer 21-23 JUNE ANNUAL MEETING

UHN Princess Margaret Cancer Centre

UNIVERSITY OF TORONTO FACULTY OF MEDICINE