

Impact Of Patient Directed Cytology Results Correspondence Program on Follow-up of High Grade Pap Tests

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*Improving Lives Through the Prevention & Treatment
of Anogenital & HPV-Related Diseases*

ASCCP2018 Annual Meeting

Disclosures

- None

Introduction:

Ontario Cervical Cancer Screening Program:

- Organized
- Database of pap tests dating back to 2000
- To improve participation, Correspondence Program 2014: Invitation, Recall
- To improve effectiveness of screening, adequate and timely follow up of high grade cytology: HSIL, AGUS, ASC-H, AIS

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How are women with high grade Pap smear abnormalities managed? A population based

Rachel Kupets Lawrence Paszat

Follow up of High Grade Pap Tests:

ASC- H: 84%

HSIL: 92%

AGUS: 44%

AGC of endocervical origin query preneoplastic: 81%

Currently, recommendation for management of abnormal pap test is on the bottom of cervical screening report

Physician based strategy

Correspondence of Results Directly to Woman

Implemented November, 2014

Cytology Result Letters

<Correspondence Date>

<Letter Reference Number>

«FIRST_NAME_X» «LAST_NAME_X»
«CONTACT_STREET_ADDRESS_X»
«CCC_CONTACT_STREET_ADDRESS_2_X»
«CITY_X» «CCC_CONTACT_PROVINCE_X» «POSTAL_CODE_X»

Your Pap Test Result

Dear «FIRST_NAME_X» «LAST_NAME_X»:

My name is Linda Rabeneck and I'm a doctor with Cancer Care Ontario. I help to run Ontario's cancer screening programs and I want to thank you for taking the time to get a Pap test done. I am writing to let you know that your recent Pap test result is **abnormal**.

An abnormal Pap test means that the cells taken from your cervix look different from normal cells. **Your cell changes require follow-up testing.** Cervical cancer can most often be prevented by having follow-up testing and treatment, if necessary.

Your healthcare provider may have already contacted you. If not, **it is important that you contact him or her to discuss your abnormal test result and arrange for follow-up testing that is right for you.**

You will also find a handout in this mailing with more information about what cervical cell changes mean. I encourage you to read it and ask your healthcare provider any questions you might have. Having a Pap test is an important part of staying healthy.

Yours sincerely,

Linda Rabeneck, MD MPH FRCPC
Vice-President, Prevention and Cancer Control, Cancer Care Ontario

For more information about our screening programs, please visit www.ontario.ca/screenforlife, or contact us at screenforlife@cancercare.on.ca or toll-free at 1-866-662-9233. If you do not want to get letters from Cancer Care Ontario about cancer screening call us at 1-866-662-9233.



Cancer Care Ontario

Objective:

To carry out population level evaluation of the impact of results letter mailed directly to woman

Study design

- A cohort design was used to compare the intervention group to a historical non-intervention group

Study Population

- **The intervention group:** included all Ontario women aged 21–69 with a HG Pap test in 2014-2016
- **The historical non-intervention cohort:** included all Ontario women aged 21–69 with a HG Pap test in 2010-2012 who would have received a cytology results letter but did not get one, as the intervention started in 2013
- Women were included if they have never received an invasive cervical cancer diagnosis, have not had a hysterectomy in the past, had no colposcopy for a cervical dysplasia or a Pap test within the previous 3 years

Outcome

- The main outcome of this study was the follow-up of HG Pap test. Follow-up was defined as a colposcopy or related treatments within 6 months of a HG Pap test

Intervention

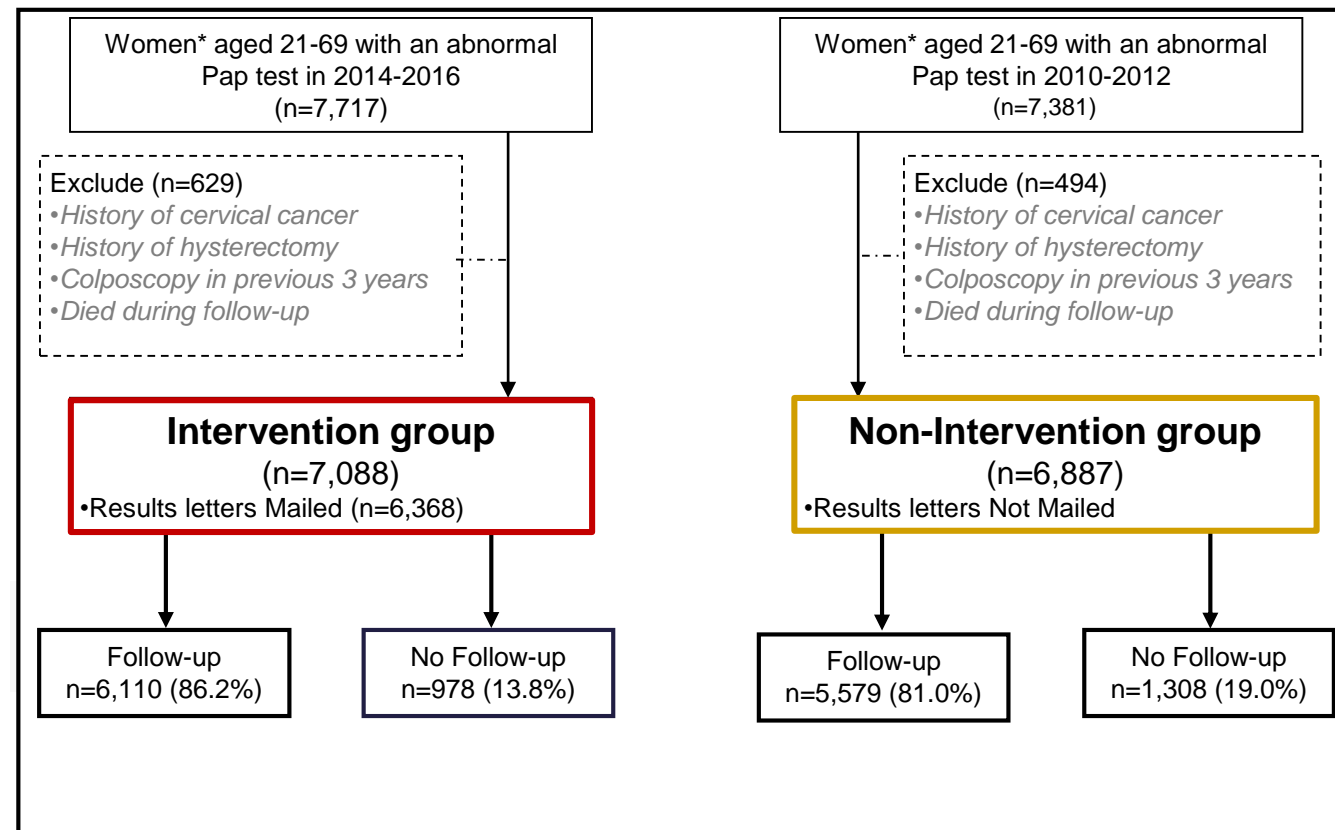
- Cytology result letter

Statistical analyses

- Analyses were conducted in an intention-to-treat basis
- Chi-square tests were used for bivariate analyses and a multivariable logistic regression model was performed to determine if the cytology result letter predicted follow-up for a HG Pap test, after controlling for key confounders

Results

- Intervention group (n=7,088)
- Non-intervention (n=6,887)
- Cytology result letters
 - Median = 34 days
 - 90th percentile = 75 days



Results: Individual Level Factors

Variables	Intervention group (Letter)			No Intervention group			P value [^]
	HG Pap test	6 month follow-up		HG Pap test	6 month follow-up		
	n	n	%	n	n	%	
Total	7,088	6,110	86.2	6,887	5,579	81.0	0.000
Abnormal Pap test result							
<i>ASC-H</i>	2,612	2,224	85.1	1,934	1,528	79.0	0.000
<i>HSIL</i>	3,638	3,296	90.6	4,030	3,471	86.1	0.000
<i>AGC</i>	791	548	69.3	869	533	61.3	0.001
<i>Adenocarcinoma in-situ</i>	47	42	89.4	54	47	87.0	0.719
Age group							
<i>21-29</i>	1,916	1,662	86.7	1,891	1,491	78.8	0.001
<i>30-39</i>	2,277	1,987	87.3	2,128	1,802	84.7	0.014
<i>40-49</i>	1,458	1,292	88.6	1,529	1,244	81.4	0.001
<i>50-59</i>	922	777	84.3	905	712	78.7	0.002
<i>60-69</i>	515	392	76.1	434	330	76.0	0.977
Rostered to family physician							
<i>Rostered (Female physician)</i>	2,682	2,373	88.5	1,642	1,365	83.1	0.001
<i>Rostered (Male physician)</i>	2,663	2,278	85.5	2,439	2,000	82.0	0.001
<i>Not rostered</i>	1,743	1,459	83.7	2,806	2,214	78.9	0.001
Comorbidity score (Charlson)							
<i>0 (No comorbid condition)</i>	7,072	6,100	86.3	6,881	5,574	81.0	0.001
<i>≥1</i>	16	10	62.5	6	5	83.3	0.350

[^]=Chi-Square test

Results: Neighborhood Level Factors

Variables	Intervention group (Letter)			No Intervention group			P value^
	HG Pap test	6 month follow-up		HG Pap test	6 month follow-up		
	n	n	%	n	n	%	
Total	7,088	6,110	86.2	6,887	5,579	81.0	0.000
Percent immigration in the neighborhood							
1 (Lowest tercile)	4,148	3,562	85.9	4,308	3,490	81.0	0.001
2	1,769	1,547	87.5	1,437	1,159	80.7	0.001
3 (Highest tercile)	1,086	939	86.5	1,051	868	82.6	0.013
Urban/Rural status							
Rural	359	314	87.5	420	339	80.7	0.011
Rural-Remote	277	234	84.5	363	285	78.5	0.056
Rural-Very Remote	159	121	76.1	166	109	65.7	0.039
Urban	6,293	5,441	86.5	5,937	4,845	81.6	0.001
Community size (Population)							
1 (1,500,000+)	2,719	2,385	87.7	2,261	1,863	82.4	0.001
2 (500,000-1,499,999)	637	527	82.7	814	643	79.0	0.074
3 (100,000-499,999)	2,105	1,790	85.0	2,126	1,733	81.5	0.002
4 (10,000-499,999)	832	739	88.8	736	606	82.3	0.000
5 Less than 10,000	795	669	84.2	949	733	77.2	0.000
Neighborhood income level							
1 (Lowest)	1,549	1,316	85.0	1,648	1,290	78.3	0.001
2	1,421	1,213	85.4	1,438	1,172	81.5	0.006
3	1,375	1,187	86.3	1,342	1,096	81.7	0.001
4	1,427	1,258	88.2	1,326	1,095	82.6	0.001
5 (Highest)	1,281	1,112	86.8	1,096	905	82.6	0.004

^=Chi-Square test

Results: Multivariate Analysis

- After controlling for covariates, women in the intervention group were 1.5 times more likely to have a follow-up
- (AOR=1.5, 95% CI 1.3–1.6)
- Factors Associated with follow-up included: type of cytology result, younger age, and being rostered to a family physician's office

Variables		AOR	95% CI
Intervention	No	1	
	Yes	1.5	1.3-1.6
Abnormal Pap test result	AGC	1	
	Adenocarcinoma in-situ	3.8	2.1-7.1
	HSIL	4.3	3.8-4.9
	ASC-H	2.5	2.2-2.9
Age	21-29	1	
	30-39	1.4	1.2-1.5
	40-49	1.4	1.2-1.6
	50-59	1.2	0.9-1.0
	60-69	0.8	0.7-1.0
Rostered to a PEM physician practice	Not rostered	1	
	Rostered (Female physician)	1.4	1.3-1.6
	Rostered (Male physician)	1.2	1.1-1.4
Percent immigration in the neighborhood	1 (Lowest)	1	
	2	1.1	1.0-1.1
	3 (Highest)	1.1	1.1-1.2
Community size	1 (1,500,000+)	1	
	2 (500,000-1,499,999)	0.8	0.6-1.0
	3 (100,000-499,999)	0.9	0.7-1.0
	4 (10,000-499,999)	1	0.9-1.3
	5 Less than 10,000	0.8	0.7-0.9
Income	1 (Lowest)	1	
	2	1.2	1.0-1.3
	3	1.2	1.1-1.5
	4	1.3	1.1-1.5
	5 (Highest)	1.3	1.1-1.6



Discussion

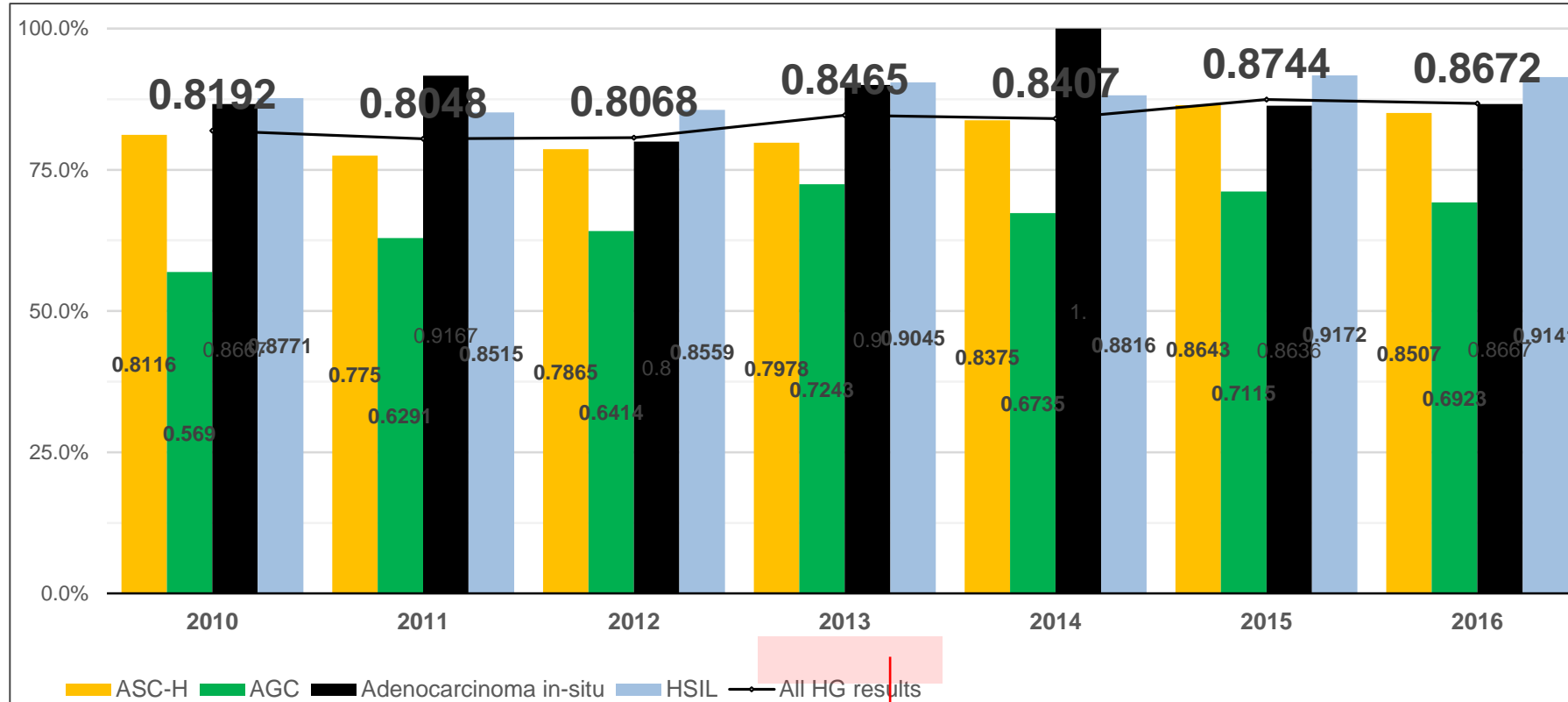
- Timely follow up of high grade cervical cytology is important in the prevention of cervical cancer
- Physician and patient adherence to guideline recommendations are important for improved follow up

Discussion:

- Patient directed correspondence of pap test result has improved follow up rates of high grade cytology and is an important programmatic tool

Abnormal Pap Follow-up Rates: Annual Trends

- There was an increase in percentage of 6 month follow-up of HG Pap tests in Ontario from 81.9% in 2010 to 86.7% in 2016



Correspondence program was implemented



Annual number and percentage of Ontario screen-eligible people, ages 21–69, with a HG cervical dysplasia result on a Pap test who underwent colposcopy or definitive treatment within 6 months of the HG screen date

Discussion:

- Additional Strategies are required to improve follow up in women not impacted the letter that can be implemented in physicians offices, screening programs:
- Cognitive interventions: telephone counselling- most effective
- Behavioural interventions: Reminder letters
- ? nurse navigators for difficult to reach women

(Yabroff et al. Preventive Medicine 2000)