

Decisions about Pap tests: what influences women and providers?

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Cervical Cancer

- **Cervical cancer is one of the most preventable and curable of all cancers**
 - May take 10 or more years to develop
- **Pap test allows for early detection and prevention**
 - Regular cervical screening can prevent approximately 90% of cervical cancers
- **Australia has a National Cervical Screening Program**
 - Deaths from cervical cancer fell by 40% between 1986 and 1998

Role of provider/GP

- Most pap tests provided by GPs
- Interaction between provider and woman is important
- GP recommendations affect choices
 - When to have the test?
 - What type of test to have?

Screening program challenges and debates

- Screening interval
 - Current recommendation: all women aged 20-70 have a Pap test every 2 years
 - Every 3 years in UK, commonly every 1 year in US
- Role of new technologies
 - Liquid based tests, HPV testing
 - Aim to enhance the overall accuracy and value of screening
 - Liquid based tests most widely available adjunct technology in Australia
 - May be attractive to providers concerned about litigation
- Increasing participation rates
 - Use of incentives for practices

What information is needed?

- What affects women's choices and provider's recommendations?
- How the interaction between provider and woman affect choices?
- Are preferences of women and GPs similar?

Obtaining evidence to inform policy?

- Ideally, revealed preference (RP) data
 - Reality is that there are data deficiencies
- Stated preference data are good predictors of behaviour
 - Discrete Choice Experiments (DCE) are viable data source
 - Especially useful when little market or revealed preference (RP) data exists
 - New products/policies
 - GP/woman interaction difficult to capture with RP data
 - DCE provides approach to simulate interaction

DCE

- Stated preference surveys
 - Designed to simulate market based choices
 - Choose preferred alternative from series of hypothetical but realistic choice sets
 - Alternatives described in terms of attributes
- Experimental design principles used to choose choice sets to allow for efficient estimation
- Discrete choice analysis is used to model preferences from the generated data

Features of this choice experiment

- Independent samples of GPs & women
 - To examine interaction
 - Patient characteristics was included in the GP surveys, and vice versa
 - Decision making context was included
 - Common across all choice options
 - Ex: time since last test, recommended screening interval
- Attributes were identified from
 - Literature review
 - Current policy context for the NCSP
- Validated in a pilot study

Features

- Each survey included
 - 8 context attributes
 - 3 alternative specific (not generic) attributes
 - No recommendation/choice option
- Socio-demographic characteristics, woman's screening and GP's practice history, etc. were also collected

Attributes

WOMEN	GPs
• Cost to woman (4 levels)	Cost to woman (4 levels)
Accuracy – False Pos (4 levels)	Accuracy – False Pos (4 levels)
Accuracy – False Neg (4 levels)	Accuracy – False Neg (4 levels)
Recommended screening interval (4 levels)	Recommended screening interval (4 levels)
HPV test cost (4 levels)	HPV test cost (4 levels)
• Time since Pap test (4 levels)	*Time since Pap test (4 levels)
Usual GP (2 levels)	Regular patient (4 levels)
Incentive for GP (2 levels)	PIP payment (4 levels)
• Sex of GP (2 levels)	Why consulting (4 levels)
GP's recommendation (4 levels)	Age of woman (5 levels)
HPV recommendation (2 levels)	Perceived h/hold income (4 levels)

Sample woman choice task

This GP is	your regular GP who you usually see for most care, including Pap tests
This GP is	Female
This GP's practice will receive a special incentive payment if you have a Pap test at this visit	No

About the tests available:

	Standard Pap test	Liquid based Pap test
The out of pocket costs to you for this test will be	\$0	\$20
The chance that this test will give you a false negative result is	1 in 20	1 in 33
The chance that this test will give you a false positive result is	1 in 1000	1 in 500

Other information the GP gives you about cervical screening:

The GP tells you that you had your last Pap test	about 1 year ago
The national recommendation is that women should have a Pap test	every 1 year
If you have either Pap test you can at the same time have an HPV test at an additional out-of-pocket cost to you of	\$50
The GP recommends that	you do not have a Pap test at this visit
The GP recommends that you	do not have the HPV test

Three choices: 1) I would not have a cervical cancer screening test, 2) I would have a standard Pap test, 3) I would have the liquid based Pap test

Sample GP choice task

About this patient:

This patient is attending the consultation	for a minor health problem
This patient is	a patient who has previously consulted your practice but has not consulted you
This patient last had a Pap test	about 3 years ago
This patient is aged	Less than 20
In your perception this patient is in	the middle income/SES range

About the tests available:

	Standard Pap test	Liquid based Pap test
The out-of-pocket costs to the patient for this test will be	\$0	\$20
The chance that this test will give a false negative result is	1 in 10	1 in 10
The chance that this test will give a false positive result is	1 in 150	1 in 100

Other information about cervical screening:

The national recommendation is that women should have a Pap test	every 3 years
If the patient has a Pap test at this consultation, your practice will receive	a standard consultation fee and an incentive payment if the patient has a Pap test at the recommended screening interval
At the same time that the patient has a Pap test it is possible for her to have an HPV test at an additional cost of	\$150

Three choices: 1) I would not recommend the patient have a cervical cancer screening test at this consultation, 2) I would recommend the patient have a standard Pap test at this consultation, 3) I would recommend the patient have a liquid based Pap test at this consultation

Data collection

- Random sample of 167 women aged 18-69
 - Door to door recruitment in NSW
 - All previously had screening test
 - Each respondent completed 32 scenarios
 - 5344 choice observations
- Sample of 215 GPs
 - Sampled from AMA contact list for GPs in NSW
 - Each respondent completed 32 scenarios
 - 6880 choice observations

Choice frequencies

	WOMEN	GPs
Standard Pap test	39%	32%
Liquid-based Pap test	24%	25%
No test	37%	43%

Analysis

- Mixed Logit (MXL), MNL with random coefficients
- Only intercepts are random
 - Common way of capturing heterogeneity
 - Account for possible dependence structure in unobserved utility among the repeated choices of an individual
- Socio-demographic var: Age, gender, education, income, practice history, etc.

Analysis

- Our intercept specification induces correlation between standard and liquid based test choices
 - Allows better and more realistic substitution patterns

Results

- MXL represents significant improvement in fit over MNL
- Coefficient estimates have sensible signs
- Results of the intercept estimates in MXL imply substantial heterogeneity across respondents
 - Less variability in GP recommendations

Results: Context attributes

- Both responsive to the nationally recommended screening interval
- More likely to test/recommend the longer the interval since last test
- Their choice not affected by whether doctor receive incentive payments
- Women less likely to test if the GP was male or not their regular GP
- Women follow doctor's recommendation
- GPs more likely to recommend if the patient was not a regular patient of the GP
- Overall GPs seem more likely to screen very young women and less likely to screen older women

Results: Other variables

- Intercept estimates suggest less preference for liquid based test
- All alternative specific attributes were significant and had expected signs
- Socio-demographic variables generally not significant for women
- GPs less likely to recommend screening if practiced for <1 year

Comparison of effects for women & GPs

Attribute	Estimates		
	GP	Women	Ratio*
False negative	-0.06	-0.03	0.55
False positive	-0.35	-0.45	1.30
Cost	-0.01	-0.03	1.99
Interval 1 yr	0.40	0.41	1.02
Interval 3 yrs	-0.76	-0.42	0.55
Interval 5 yrs	-1.61	-1.08	0.67
Last test 2 yrs	1.73	1.11	0.64
Last test 3 yrs	2.80	1.43	0.51

Explanation

- Considerable commonality in preferences
 - Women exhibit more heterogeneity in their choices
- However, women put relatively more weight on cost, chance of a false positive and if the recommended screening interval is one year
 - GP's recommend on basis of perceived best interests of patients as they may be better informed
- Overall doctor working as a good agent for patient

Policy implications

- Recommended interval
 - Women and GPs will follow recommendation
- Opportunistic screening
 - Can be used to increase screening rate
 - Encourage GPs to recommend screening even when the woman is attending for another reason
 - Encourage new doctors to recommend test
- Liquid-based tests
 - Less preferred over standard test
- Incentives
 - DCE not suitable?

Next steps

- Survey distinguished between women on basis of test history
 - Differences in preferences?
- Attitudes towards HPV test
- Introduction of HPV vaccine
 - Have rerun women's survey