



The Hilltop Institute

analysis to advance the health of vulnerable populations

Cervical Cancer Screening and Gynecologic Visit Rates for Medicaid Enrollees with Mental and Substance Use Disorders

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Presenter Disclosures

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NONE

Mental Illness Co-Morbidities

- Decreased longevity by 25 years (NASMHPD, 2006)
- Increased age-, smoking-, and physical activity-adjusted mortality (Hamer, Stamatakis, & Steptoe, 2008)
- Poor medical care (Druss et al., 2001; 2006)

Fragmentation (Disintegration, Discoordination)

“High-quality health systems...work to bridge the many gaps between mental health care, substance abuse treatment, and primary medical care.”

(Aron et al., 2009; NAMI Grading the States Report, p. 8)

Holistic Care

- “States are not focusing on wellness and survival for people with serious mental illnesses” (Ibid., p. 26)
 - Cardiovascular
 - Injury
 - Suicide
 - Smoking
 - Too much separation of mental and physical health care services

Person-Centered Care

- Institute of Medicine (2005): *Improving the Quality of Health Care for Mental and Substance-Use Conditions*
- National Council for Community Behavioral Healthcare (Mauer, 2009)
 - Preventive services
 - Women

Women with Mental Illness Uniquely at Risk

- Sexual abuse (Butterfield et al., 2003; Friedman & Loue, 2007; Howard & Hunt, 2008; Judd et al., 2009; Perese & Perese, 2003)
- Substance use disorders (SUD) (Alexander, 1996; Perese & Perese, 2003; RachBeisel et al., 1999)
- Low income (Chafetz et al., 2006)
- Distinctive biology
 - Breast cancer screening (Chochinov et al., 2009; Carney & Jones, 2006)
 - Cervical cancer screening (Martens et al., 2009; Tilbrook et al., 2010)

Question(s)

- In Maryland Medicaid, are women with severe mental illness (and/or SUD) receiving cervical cancer screening at rates comparable to other women in the program?
- Alternative outcomes: gynecologic (GYN) visits or genital cancers (cervical, vaginal, ovarian, unspecified)

Population Selection...

Population Constraint	Count
All Medicaid enrollees	822,451
Women only	494,025
12 months of Medicaid enrollment	325,338
Age 19-64 years	129,013
Exclude pregnant women*	107,302
Exclude those in pharmacy assistance only or illegal aliens**	105,681 (the sample used)

*Any indication of pregnancy during the year led to an exclusion.

**Limited Medicaid benefits that exclude preventive screening.

Unadjusted Group Comparisons

Variable	Diagnostic Group				
	Psychosis	SUD	Psychosis & SUD	BP/Dep	Control
n (row %)	4,747 (4.5)	6,122 (5.8)	1,104 (1.0)	2,424 (2.3)	91,284 (86.4)
<i>Demographics</i>					
Mean Age (stdev)	46 (11)	41 (9.7)	42 (9.4)	42 (12)	35 (13)
Black %	52	65	61	35	51
White %	43	34	37	60	39
Baltimore City %	33	58	52	27	27
<i>Medicaid Eligibility Category</i>					
Disabled or Dual %	93	58	86	76	34
<i>Disease Rates</i>					
HIV or AIDS %	1.9	13	12	2.5	1.3
Other STDs %	10	30	34	14	5.4
Genital Cancers %	0.91	1.4	1.3	1.2	0.51
<i>Main Outcomes</i>					
GYN Visit %	45	48	50	59	28
Cervical Cancer Screening %	25	27	26	32	19

Dual = +Medicare; Psychosis = Schizophrenia or other psychosis; BP/Dep = Bipolar or depression without psychosis

Logistic Regression Model

$$\begin{aligned} \text{Ln (odds of screening, GYN visit, or cancer)} = & \\ & \beta_0 + \beta_1 * \text{Psychosis} + \beta_2 * \text{SUD} + \beta_3 * \text{BP/Dep} \\ & + \beta_4 * \text{Control} + \beta_5 * \text{Age} + \beta_6 * \text{Age}^2 + \\ & \beta_7 * \text{Race} + \beta_8 * \text{Medicaid eligibility category} + \\ & \beta_9 * \text{Geographic region} + \beta_{10} * \text{STD} + \beta_{11} * \text{HIV} \\ & + \textit{error} \end{aligned}$$

Adjusted-Odds: Main effects...

		Outcome I = Genital Cancer	Outcome II = GYN Visit	Outcome III = Cervical Cancer Screening
Model details & fit	Exclusions	Women with hysterectomies	<i>None</i>	Women with hysterectomies, cancer
	N	104,674	105,681	104,157
	Max-rescaled R-square	0.094	0.23	0.14
Adjusted*-odds ratio (95% confidence interval)				
Diagnosis	Psychosis vs. Control	1.02 (0.71-1.45)	1.25 (1.18-1.34)**	1.35 (1.25-1.45)**
	SUD vs. Control	1.10 (0.83-1.46)	0.91 (0.86-0.97)**	0.74 (0.69-0.79)**
	BP/Dep vs. Control	1.03 (0.69-1.54)	1.89 (1.75-2.04)**	1.54 (1.41-1.66)**

*Covariates: age, race, Medicaid eligibility, geographic, STDs

** p < 0.05

Covariate Effects, Alternative Specifications...

- Alternative specifications
 - 5 mutually exclusive groupings
 - Interaction: SUD*Psychosis

$$\text{Ln (odds of screening, etc.)} = \beta_0 + \beta_1 * \text{Psychosis} + \beta_2 * \text{SUD} + \beta_3 * \text{BP/Dep} + \beta_4 * \text{Control} + \beta_x * \text{CovariateX...} + \text{error}$$

- Covariates...

A Remedy?

Fraction of persons	Any GYN Visit	Symptomatic GYN Visit	Asymptomatic (routine) GYN Visit
CCS with GYN visits ÷ GYN visits	16,811 ÷ 32,309 = 52%	6,494 ÷ 17,280 = 38%	14,851 ÷ 21,073 = 70%
CCS <i>without</i> GYN visits ÷ <i>without</i> GYN visits	3,457 ÷ 71,848 = 4.8%	13,774 ÷ 86,877 = 16%	5,417 ÷ 83,084 = 6.5%
Chi-square (<i>p</i>)	31,708 (<0.0001)	4,341 (<0.0001)	43,869 (<0.0001)

CCS = cervical cancer screening

Discussion Points...

- SUD presents as a major and singular risk factor... (Kelly et al., 2010)
- Maryland Medicaid seems to adequately screen for cervical cancer in women with severe mental illness
 - Relatively strong public mental health system
- Gynecologic access is a strong correlate
- Limitations...
 - Population with low income
 - Full enrollment
 - Some small subpopulations
 - Single year incidences

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About The Hilltop Institute

The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) is a nationally recognized research center dedicated to improving the health and wellbeing of vulnerable populations. Hilltop conducts research, analysis, and evaluations on behalf of government agencies, foundations, and nonprofit organizations at the national, state, and local levels.

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