## Cancer Prevention & Control, Provider-Oriented Screening Interventions: Provider Reminder & Recall Systems

### Summary Evidence Table

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<th>Author, Study Period</th>
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| **Bankhead, 2001** *(October 1996 – June 1997)*  
**Intervention:** Provider reminder | **Design:** Randomized trial (Individual)  
**Design Category:** Greatest suitability  
**Execution:** Fair | United Kingdom (NR) Office/clinic; Women registered with participating practices & failed to attend an appointment for routine 3rd round breast screening; mean age ~56 yrs - other patient info NR | 1. Yellow card placed in records of eligible women. Informational leaflets also distributed *(n=287)*  
2. Usual care, no additional intervention *(n=289)* | Completed mammogram determined by attendance records *(7 month f/u)*,  
1 vs. 2 = 4.1 pct pt *(p = 0.069)* |
| **Becker, 1989** *(Aug. 1986 – Aug. 1987)* | **Design:** Randomized trial (Individual)  
**Design Category:** Greatest suitability  
**Execution:** Fair | Charlottesville, VA (mixed urbanicity) Office/clinic, 40–60 years old, a recorded telephone #, ≥ 1 clinic visit w/I 18 mos of the start of the study (screening history NR); ~ 60% black/40% white, ~70% got discounted care, mean age ~52 | 1. Physicians received computer-generated chart reminders *(mammogram: n= 76; Pap: n= 39; FOBT: n= 103)*  
2. Usual care; no additional intervention *(mammogram: n= 85; Pap: n= 38; FOBT: n= 117)* | Determined by self-report corroborated w/ medical record review *(3-4 mo f/u)*  
Completed screening:  
1 vs. 2 Mam = 19.7 pct pt *(p<0.05)*  
Pap = 4.7 pct pt *(p<0.05)*  
FOBT= 5.6 pct pt *(p<0.05)* |
| **Binstock, 1997** *(NR)* | **Design:** Randomized trial (Individual)  
**Design Category:** Greatest suitability  
**Execution:** Fair | Pasadena, CA (urban) Office/clinic  
Female, 25-49 years of age, all women selected were overdue (no Pap during the previous 3 years) other info NR | 1. Memo to provider *(n=389)*  
2. Chart reminder placed on patient’s medical chart *(n=365)*  
3. Usual care *(n=249)* | Completed Pap determined by lab record review *(12 month f/u)*  
1 vs. 3 = 9.2 pct pt *(p<0.05)*,  
2 vs. 3 = 7.6 pct pt *(p<0.05)* |
| **Burack, 1996** *(July 1992 – July 1993)* | **Design:** Randomized trial (Individual)  
**Design Category:** Greatest suitability  
**Execution:** Fair | Detroit, MI (urban) 2 HMO/clinics  
Women ≥ 39.5 years old & had visited either site in the 18 months prior to the intervention; women excluded if they had a prior breast carcinoma or if last mamm resulted in a surgical procedure (site 1: 64% ever screened; site 2: 44% ever screened); ~96% African American study population; entitlement insurance more prevalent than commercial insurance at both sites | 1. Brightly colored single page notice placed in the woman’s medical chart *(clinic 1 n= 211; clinic 2 n = 159)*  
2. Neither intervention *(clinic 1 n = 222; clinic 2 n = 150)* | Completed mammogram determined by medical record reviews *(32 month f/u)*,  
1 vs. 2 Site 1 = 1 pct pt *(p>0.05)*,  
Site 2 = 14 pct pt *(p<0.05)* |
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| Burack, 1998 (March 1993 – April 1994) | Design: Randomized trial (Individual)  
Design Category: Greatest suitability  
Execution: Fair | Detroit, MI (urban) HMO clinic  
Women age 18-40 years who had visited the HMO w/i one year & had not received an ‘abnormal’ or ‘insufficient for cytologic diagnosis’ test result for last known Pap (screening status NR) ~95% African-American; 87% eligible for Medicaid | 1. Brightly colored single-page chart reminder (n = 960)  
2. Usual care (n = 964) | Completed Pap determined by medical record review (12 month f/u), 1 vs. 2 = 1 pct pt (p>0.05) |
Design Category: Greatest suitability  
Execution: Fair | Florence, Bagno a Ripoli, Mugello and Val di Sieve, Italy, (~82% urban, 4% suburban, 14% rural) Office/clinic  
Women eligible for Pap smear between the ages of 25 & 59 (who had not attended for Pap testing ≥ 9 years) other info NR | 1. List of patients who were “non-attenders” delivered to GP’s (n = 5188)  
2. Visit to GP’s by a trained MD to update about cervical cancer + list of non-attenders (n = 13,584)  
3. Neither of the above (n = 8123) | Completed Pap; determined by medical record review (6 months – 2 years), 1 vs. 3 = 5.4 pct pt (p<0.05)  
2 vs. 3 = 4.3 pct pt (p< 0.05) |
| Chambers, 1989 (Nov 1, 1986 – Apr 30, 1987) | Design: Randomized trial (Individual)  
Design Category: Greatest suitability  
Execution: Good | Philadelphia, PA (urban), Office/clinic  
All established female patients listed in the database > 40 years old (prior screening status NR; presumed ‘due’) ~70% ‘non-white’; ~15% uninsured, mean age ~62 yrs | 1. Micro-computer generated reminders affixed to patients’ charts by office staff (n = 639)  
2. Usual care/no reminder (n = 623) | Ordered mammogram determined by medical record review (6 months), 1 vs. 2 = 7.5 pct pt (p= 0.104) |
| Cheney, 1987 (Sept 1982 – June 1983) | Design: Randomized trial (Group)  
Design Category: Greatest suitability  
Execution: Fair | San Diego, CA (urban) Office/clinic  
Information about patients & screening status, NR except ~54% of study pop > 60yrs | 1. Inexpensive age and gender-specific health maintenance checklist attached to charts  
2. Usual care/no checklist (total randomized n = 200) | Completed mammogram determined by medical record review (12 month f/u), 1 vs. 2 = 20 pct pt (p< 0.01) |
| Cohen, 1982 (Fall 1980) | Design: Randomized trial (Group)  
Design Category: Greatest suitability  
Execution: Fair | Cleveland, OH (urban) Office/clinic, Study population not clearly described (screening status NR) | 1. Age specific checklists affixed to medical chart cover (n = 290)  
2. Usual care/no checklist (n = 138) | Completed mammogram determined by chart review (4 month f/u), 1 vs. 2 = 28 pct pt (p < 0.001) |
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<td>Cowan, 1992 (Oct – Dec 1985)</td>
<td>Design: Randomized trial (Individual) Design Category: Greatest suitability Execution: Fair</td>
<td>Chicago, IL (urban) Office/clinic, Study population not clearly described (screening status NR) Mean age: ~ 58 yrs old other info NR</td>
<td>1. Informational fact sheet indicating age and sex-specific screening recommendations, attached to patient's chart (N for mamm= 32, Pap= 32, FOBT= 46) 2. Usual care/no fact sheet (N for mamm= 23, Pap= 23, FOBT= 33)</td>
<td>Ordered mammogram determined by medical chart review, (3 month f/u), 1 vs. 2 = 11.3 pct pt (p = 0.38) Ordered Pap, 1 vs. 2 = 8.2 (p = 0.63) Ordered FOBT, 1 vs. 2 = 4.3 (p = 0.51)</td>
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<td>Gonzalez, 1989 (NR)</td>
<td>Design: Randomized trial (Group) Design Category: Greatest suitability Execution: Fair</td>
<td>Wilmington, NC (rural) Office/clinic Study residents' patients both eligible &amp; due for screening; other patient info NR</td>
<td>1. Nurse practitioner reviewed charts; ‘friendly reminder’ was placed in the front when procedures were not done 2. Standard checklist (total randomized n = 96)</td>
<td>Ordered mammogram determined by medical chart review (5 weeks), 1 vs. 2 = 38 pct pt (p = 0.001) Ordered Pap, 1 vs. 2 = 23 (p = 0.02)</td>
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<td>Grady, 1997 (NR)</td>
<td>Design: Randomized trial (Group) Design Category: Greatest suitability Execution: Fair</td>
<td>Greater Dayton, OH and Greater Springfield, MA (urban) Office/clinic General, family or internal medicine practices, community based, have 1–6 physicians and provide care for ≥ 50 women age 50+ per month/physician (screening status &amp; other patient info NR)</td>
<td>1. Cues were placed in patients' charts to remind the physician when a mammogram is indicated 2. Usual care (total randomized n = 11,426)</td>
<td>Determined by medical chart review (12 month f/u) Completed mammogram, 1 vs. 2 = 6.8 pct pt (p&lt;0.05) Ordered mammogram, 1 vs. 2 = 5.5 pct pt (p&lt;0.05)</td>
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<td>Landis, 1992 (Jan – May 1990)</td>
<td>Design: Randomized trial Design Category: Greatest suitability Execution: Fair</td>
<td>Asheville, NC (mixed urbanicity) Office/clinic Female patients; 50 – 70 yrs; no history of breast disease; seen in the practice previous two years; no mammography within previous yr; ~ 13% African-American; ~ 40% uninsured</td>
<td>1. Computer generated prompt placed on the chart of eligible women n=15 2. No MD prompt on chart n =45</td>
<td>Completed mammogram determined by medical chart review (5 month f/u), 1 vs. 2 = 2 pct pt (p &gt; 0.05)</td>
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<td>Litzelman, 1993 (May 1, 1989–October 31, 1989)</td>
<td>Design: Randomized trial Design Category: Greatest suitability Execution: Good</td>
<td>Indianapolis, IN (urban) Office/clinic Patients with &gt; 1 scheduled visit to the physician during the study period and due for ≥ 1 cancer screening tests (more specific screening status NR); ~60% African-American, SES NR</td>
<td>1. Computer generated reminders printed on encounter form; reminder report; completion of sheet explaining reason not done; addition/ correction of chart data if reminder was a false positive 2. Computer generated reminder not requiring response; reminder report (total randomized n = 5407)</td>
<td>Determined by medical record review (5 month f/u) Ordered mammogram, 1 vs. 2 = 7 pct pt (p &lt; 0.05) Ordered Pap, 1 vs. 2 = 3 pct pt (p &lt; 0.05) Ordered FOBT, 1 vs. 2 = 12 pct pt (p &lt; 0.05)</td>
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| McDonald, 1984 (June 1978 - 1980) | Design: Randomized trial  
Design Category: Greatest suitability  
Execution: Fair | Indianapolis, IN (urban)  
Office/clinic  
Residents, faculty and nurses practicing in teams in general medicine clinic; ~65% African-American (other patient info NR) | 1. A computerized reminder on the patient’s chart  
2. No checklists (total randomized n = 12,467) | Determined by medical chart review (12 month f/u)  
Ordered mammogram, 1 vs. 2 = 7 pct pt (p < 0.05)  
Ordered Pap, 1 vs. 2 = 12 pct pt (p < 0.05)  
Ordered FOBT, 1 vs. 2 = 33 pct pt (p < 0.05) |
Design Category: Greatest suitability  
Execution: Fair | Ottawa, Canada (urban)  
several office/clinic in hospital  
Female members of the practices in the study hospital, aged 18 – 35, overdue for Pap (no Pap test in the previous year) other patient info NR | 1. Computer printed a message to the physician to recommend cervical (n = 255)  
2. No reminders (n = 255) | Completed Pap computerized record review  
(12 month f/u), 1 vs. 2 = 2.4 pct pt (p = 0.46) |
| McPhee, 1989 (NR) | Design: Randomized trial (Individual)  
Design Category: Greatest suitability  
Execution: Good | San Francisco, CA (urban)  
Office/clinic (group practice)  
25% Black, 41% White, Hispanic 17%, Asian 14%; 50% Medicare, 37% Medi-Cal (patients due for screening) | 1. Computer-generated reminders attached to the patients’ medical charts (n = 1936)  
2. Usual care (n = 1969) | Medical chart review (9 month f/u)  
Completed mammogram, 1 vs. 2 = 20.1 pct pt (p < 0.05)  
Completed Pap, 1 vs. 2 = 36.9 pct pt (p < 0.05)  
Completed FOBT, 1 vs. 2 = 19.8 pct pt (p < 0.05)  
Completed Flex Sig, 1 vs. 2 = 24.2 pct pt (p < 0.05) |
Design Category: Greatest suitability  
Execution: Fair | Charleston, SC, Urban, University-affiliated family medical center; Active patients 18 years of age or older  
N = 24 (physicians)  
= 3,564 (patients) | 1. (PR) Reminder forms generated by computer and printed on a single sheet attached to medical record by nursing personnel; contained boxes for provider to indicate action.  
2. (Comp) Usual treatment | Record-veriﬁed test completion:  
Completed mammogram, 1 vs. 2 = -5.0 pct pt  
Completed Pap, 1 vs. 2 = -3.6 pct pt  
Completed FOBT, 1 vs. 2 = -3.0 pct pt |
| Pierce, 1989 (NR) | Design: Randomized trial (Individual)  
Design Category: Greatest suitability  
Execution: Good | England, (urbanicity NR)  
Office/clinic (group practice)  
Women born between 1926 and 1952 (> 35 yrs old) who never had a cervical smear, or were overdue by > 5 years; predominantly low SES (other patient information NR) | 1. The medical charts of patients were tagged with a partially completed cervical smear form  
2. Usual care (total randomized n = 276) | Completed Pap determined by record review (implied)  
(12 month f/u), 1 vs. 2 = 12.0 pct pt (p < 0.05)  
15 pct pt among >5 yr since last test  
10 pct pt among never tested |
| Pritchard, 1995 (1991) | Design: Randomized trial (Group)  
Design Category: Greatest suitability  
Execution: Fair | Perth, Australia (urban)  
Office/clinic  
Female patients 36 - 69 years, no hysterectomy, does not attend another practice, not diagnosed w/ terminal illness, no Pap smear in the past 2 yrs; 55% from the lowest socioeconomic quartile, 50% of patients from Aust or NZ | 1. Notes tagged with a reminder (n = 198)  
2. Usual care (n = 185) | Completed Pap determined by medical chart review (12 month f/u), 1 vs. 2 = 4.4 pct pt (p = 0.14) |
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| Richards, 2001 (1997-1998) | Design: Randomized trial (Group)  
*Design Category:* Greatest suitability  
*Execution:* Good | Northwest London (urban) and West Midlands, UK (mixed) Office/clinic  
Women 50–64, registered with a general practitioner & due to be screened between July 1997 and August 1998 (various screening histories) other patient info NR | 1. Charts received a card/checklist, encounter form and prompted the provider to give the client an informational leaflet (n=1232)  
2. Usual care; Routine invitation (n=1721) | Completed mammogram determined by medical record review (6 months), 1 vs. 2 = 10.0 pct pt (p<0.05) |
| Schreiner, 1988 (NR) | Design: Non-randomized trial  
*Design Category:* Greatest suitability  
*Execution:* Fair | Galveston, TX (urban) Office/clinic,  
Charts reviewed if 1) patient had been seen at least twice in either clinic, 2) no hospital charts (implied that patients were due or overdue); ~50% black, 40% white, 10% latino | 1. Chart reminder note stating which procedures were indicated for the patient; resident attended lectures (n pre = 900, n post = 280)  
2. Usual care (n pre = 168, n post = 168) | Ordered Pap determined by chart review (5 months), 1 vs. 2 = 6 pct pt (p=NR) |
*Design Category:* Greatest suitability  
*Execution:* Fair | Indianapolis, IN (urban) Office/clinic  
Patients in the clinic (at least due for screening); patient information NR | 1. Patient-specific computer printout of suggested preventive care (w/ supporting data)  
2. Same intervention w/o reminders for cancer screening tests (total n for mamm = 1630, pap = 1638, FOBT = 2901) | How determined = NR other than ‘computer assessment’ (7 months)  
Completed mammogram, 1 vs. 2 = 16 pct pt (p<0.05)  
Completed Pap, 1 vs. 2 = -2 pct pt (p<0.05)  
Completed FOBT, 1 vs. 2 = 33 pct pt (p<0.05) |
| Vinker, 2002 (NR) | Design: Randomized trial (group)  
*Design Category:* Greatest suitability  
*Execution:* Fair | Tel Aviv, Israel (urban) Office/clinic  
All enrollees with six family MD practices, aged 50 – 75; other patient information NR | 1. A reminder note placed in the medical file advised physician to direct patient to perform FOBT (n=753)  
2. Usual care (n=913) | Completed FOBT determined by medical chart review (12 month f/u) 1 vs. 2 = 15.3 pct pt (p< 0.05) |
*Design Category:* Greatest suitability  
*Execution:* Fair | Memphis, TN (urban) Office/clinic  
NR other than ‘adult’ (screening status NR) | 1. Reminder checklist cards placed in patients’ medical charts (n=71)  
2. Usual care/no intervention (n=52) | Completed Pap determined by reviewing a sample of medical charts (4-5 month f/u), 1 vs. 2 = 20.3 pct pt (p=0.05) |
| Williams, 1998 (NR) | Design: Randomized trial  
*Design Category:* Greatest suitability  
*Execution:* Fair | Virginia, (~60% rural) Office/clinic  
Practices: primary care, non-teaching practices Patients: ≥ 18 years old and had visited the practice in the previous year (specific screening status NR); other patient information NR | 1. Patient initiated chart reminder – called TSCS (touch sensitive computer system) & a nurse liaison for 12 months  
2. Usual care (total randomized n = 5789) | Random medical chart review (12 month f/u) Completed mammogram, 1 vs. 2 = 8.8 pct pt (p=NR)  
Completed Pap, 1 vs. 2 = 2.7 pct pt (p=NR)  
Completed FOBT=1.0 pct pt (p=NR) |