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

Summary Evidence Table

Author, Study Period	Category, Design, Execution	Study Location, Setting type, Population Description	Interventions Studied, Comparison, and Number of Participants	Outcome and Effect Measure, Including Percentage Point change (Statistical Significance)
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/l 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)
Cecchini, 1989 (November 1986 – May 1988)	**Design:** Randomized trial (Individual) **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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Cowan, 1992 (Oct – Dec 1985)	**Design:** Randomized trial (Individual) **Design Category:** Greatest suitability **Execution:** Fair	Chicago, IL (urban) Office/clinic, Study population not clearly described (screening status NR) Mean age: ~ 58 yrs old other info NR	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)	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)
Gonzalez, 1989 (NR)	**Design:** Randomized trial (Group) **Design Category:** Greatest suitability **Execution:** Fair	Wilmington, NC (rural) Office/clinic Study residents' patients both eligible & due for screening; other patient info NR	1. Nurse practitioner reviewed charts; 'friendly reminder' was placed in the front when procedures were not done 2. Standard checklist (total randomized n = 96)	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)
Grady, 1997 (NR)	**Design:** Randomized trial (Group) **Design Category:** Greatest suitability **Execution:** Fair	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 & other patient info NR)	1. Cues were placed in patients' charts to remind the physician when a mammogram is indicated 2. Usual care (total randomized n = 11,426)	Determined by medical chart review (12 month f/u) Completed mammogram, 1 vs. 2 = 6.8 pct pt (p<0.05) Ordered mammogram, 1 vs. 2 = 5.5 pct pt (p<0.05)
Landis, 1992 (Jan – May 1990)	**Design:** Randomized trial **Design Category:** Greatest suitability **Execution:** Fair	Ashville, 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	1. Computer generated prompt placed on the chart of eligible women n=15 2. No MD prompt on chart n =45	Completed mammogram determined by medical chart review (5 month f/u), 1 vs. 2 = 2 pct pt (p > 0.05)
Litzelman, 1993 (May 1, 1989–October 31, 1989)	**Design:** Randomized trial **Design Category:** Greatest suitability **Execution:** Good	Indianapolis, IN (urban) Office/clinic Patients with > 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	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)	Determined by medical record review (5 month f/u) Ordered mammogram, 1 vs. 2 = 7 pct pt (p < 0.05) Ordered Pap, 1 vs. 2 = 3 pct pt (p < 0.05) Ordered FOBT, 1 vs. 2 = 12 pct pt (p < 0.05)

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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)
McDowell, 1989 (1985-1986)	**Design:** Randomized trial (Individual) **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)
Ornstein, 1991 (July 1, 1988 – July 1989)	**Design:** Randomized trial (Individual) **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 compute 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-veriified 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 **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)
Tierney, 1986 (April 1983 – January 1984)	**Design:** Randomized trial **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<.05) Completed Pap, 1 vs. 2 = -2 pct pt (p<.05) Completed FOBT, 1 vs. 2 = 33 pct pt (p<.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)
Williams, 1981 (October 1976 – February 1977)	**Design:** Randomized trial **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=.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)