

**Bilaga 2 Tabeller – Studier som ligger till grund för resultat och slutsatser/  
Tables – Studies on which results and conclusions are based**

**Table 4.1** Effect of information and education on patient’s and doctor’s delay in cancer diagnosis.

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
de Nooijer et al 2004 [61] The Netherlands	Any type	Randomised controlled trial	1 885 Dutch adults recruited through announcement in newspapers	Screening questionnaire for data to use for tailored information provided at baseline	No information  n=462	At 3 weeks, written 15-item questionnaire  At 6 months, telephone interview  Approached for interview at 6 months:  Completed the interview:  n=1 358	<b>Knowledge</b> Group 1 knowledge increased more than Group 2 and control group at 3 weeks and 6 months, p<0.001  <b>Passive detection</b> 3 weeks: Group 1>Group 2>C 6 months: Group 1=Group 2>C  <b>Help-seeking</b> 3 weeks: Group 1>Group 2>C 6 months: Group 1>Group 2=C  Pair wise comparisons, α=0.016  No differences between groups in fear or fatalistic attitudes toward cancer	Moderate  Volunteers, 80% women, limited effect although significant

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Biger et al 1994 [129] Israel	All types, emphasis on breast, lung, and skin	Observational Prospective Controlled	Random sample of women registered at 7 outpatient clinics in Haifa,  n=1 500	1: Family physician “green path” discussion groups on smoking, breast self- examination, knowledge of cancer, and sun exposure at 5 health clinics  2: Leaflets describing early signals and preventive behaviour  3: Newspaper ads  n=1 000	Women in 2 clinics with no intervention  n=500	Interviews 30 months after start of program	The program was ineffective both in change of behaviour and in knowledge of relationship between health behaviour and cancer  Cancer knowledge – 12 questions (I/C) Baseline: 7.01/7.56 2 years: 7.11/7.54  No change in behaviour regarding smoking, sun exposure, or breast self- examination	Moderate  964 were finally interviewed, n in C and I not given  Significant baseline differences between I and C
Catalano et al 2003 [65] USA	Breast	Retrospective register study  SEER data from Atlanta, Detroit, and San Francisco, USA  Time series comparing 92 consecutive yearly quarters for new cases of in situ and early breast tumours	Women in Atlanta, Detroit, and San Francisco areas from 1975 to 1997	The Breast Cancer Awareness Month program starting in 1985 (October of each year)  Women diagnosed 1985–1997	1: Women diagnosed 1975–1984  2: Men with <i>in situ</i> and early colorectal cancer 1975–1997	Before and after inception of Breast Cancer Awareness Month  Effect on incidence of early stage breast tumours in quarters with Breast Cancer Awareness Month (October) versus quarters without	More <i>in situ</i> and local breast tumours than expected were found in quarters that included Breast Cancer Awareness Month  Statistical difference Atlanta: p<0.05 Detroit: p<0.01 San Francisco: p<0.01	Moderate  Complicated analysis and statistics

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Forbes et al 2011 [63] United Kingdom	Breast	Randomised controlled trial	Women aged 67–70 years in London and Surrey, attending their final routine appoint- ment in a breast screening program  Approached:  n=1 945  Assessed for eligibility:  n=1 209  Randomised:  n=867	1: An information booklet n=294  2: A 10-min interaction between a radiographer and the woman + information booklet n=286	C: Usual care n=287	Breast cancer detection knowledge at 2 years post- intervention by a validated questionnaire (76–80% response)	Intervention compared to control (ie, usual care): OR (95% CI)  <b>Breast cancer awareness</b> 1: 1.8 (0.6; 5.3), p=0.32 2: 8.1 (2.7; 25.0), p<0.001  <b>Knowledge of symptoms</b> 1: 1.1 (0.7; 1.6), p=0.66 2: 1.4 (0.9; 2.1), p=0.11  <b>Knowledge of increased risk with age</b> 1: 1.8 (0.9; 3.5), p=0.08 2: 4.8 (2.9; 9.0), p<0.001  <b>Breast checking</b> 1: 1.1(0.8; 1.6), p=0.54 2: 1.3 (0.9; 1.9), p=0.14  <b>Breast cancer awareness adjusted for baseline characteristics</b> 1: 2.8 (0.9; 9.1) 2: 12.2 (3.8; 38)	Moderate  Large proportion excluded before randomisation

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
McCulloch et al 2003 [67] United Kingdom	Upper gastro- intestinal tract	Observational Prospective Controlled	Persons aged >40 years at 12 GP practices in Liverpool, 1993–1996	3 consecutive yearly letters from surgical department with advice to consult a GP for 4 symptoms  1: Indigestion/heartburn >2 weeks 2: Loss of appetite or weight 3: Vomiting for unknown reasons 4: New symptoms in patients with gastrectomy >10 years ago  n=37 500	No intervention  Age, sex, and socio-economically matched  n=60 500	Surgical resection rates of cancer and rates of curable cancer at 1, 2, and 3 year follow-up	184 total cases with cancer I: n=59; C: n=125  5-year survival I: 8.5%; C: 8% p=0.50 <b>Total period</b> <b>Surgical resection</b> I: 20/59 (34%); C: 42/125 (34%), p=0.97 <b>Curable disease</b> I: 14/29 (24%); C: 23/125 (18%) OR 1.51 (95% CI, 0.71; 3.23), p=0.28  <b>1 year</b> <b>Surgical resection</b> I: 11/20 (55%); C: 10/38 (26%) OR 3.4 (95% CI, 1.09; 10.7), p=0.003 <b>Curable disease</b> I: 8/20 (40%); C: 4/38 (11%) OR 5.7 (95% CI, 1.44; 22.3), p=0.02  <b>2 years</b> <b>Surgical resection</b> I: 5/18 (28%); C: 15/41 (37%), p=ns <b>Curable disease</b> I: 4/18 (22%); C: 8/41 (19.5%), p=ns  <b>3 years</b> <b>Surgical resection</b> I: 4/21 (19%); C: 17/46 (37%), p=ns <b>Curable disease</b> I: 2/21 (9%); C: 11/46 (24%), p=ns	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Athey et al 2012 [62] United Kingdom	Lung	Observational Prospective Before/after	General population in 6 localities with high lung cancer incidence in Sheffield  11 GP surgeries  Local pharmacies	Public campaign in 2008 in local free paper, press and radio, leaflets, beer mats, bus stops, pharmacy bags, outdoor billboards  GPs: Brief training, up-date on guidelines  Encouragement to pharmacists to promote campaign material	Control area  Population in 5 localities  9 GP surgeries	Telephone survey: Random sample of population from inter- vention and control areas before (n=801), and after (n=800) intervention (response rate 76%)  During and 1 year after intervention	<b>Telephone survey</b> Visit GP when unwell: OR 1.41 (95% CI, 0.88; 2.28)  Visit GP for x-ray for cough OR 1.97 (95% CI, 1.18; 3.31)  Visit GP for cough >3 weeks OR 1.47 (95% CI, 0.80; 2.70)  <b>X-ray examinations</b> <b>During I</b> I: 27% increase C: 19% increase <b>After 1 year</b> I: 20% increase C: 2% decrease IRR 1.22 (95% CI, 1.12; 1.33), p=0.001  <b>Number of lung cancers after 1 year</b> I: 27% increase C: 10% decrease IRR 1.42 (95% CI, 0.83; 2.44), p=0.199 <b>Stage distribution</b> No difference in stage distribution at 3, 6 or 12 months (estimated OR for stage III + IV in figure 3: 1.61 (95% CI, 0.65; 4.0))	Moderate
Del Mar et al 1997 [66] Australia	Melanoma of the skin	Observational Prospective Before/after	Population of particular young adults in Quensland	Public educational media campaign aimed particularly at young adults to avoid sunlight, delivered by several media, mainly television advertisements. Repeated twice in two and a half years	Before, between, and after the two periods of campaign	NA	More lesions were excised during campaign periods RR 1.24 (95% CI, 1.11; 1.37)  There was no difference in the thickness of melanomas excised during campaign and non-campaign periods (Mann- Whitney p=0.659)	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Graham-Brown et al 1990 [69] United Kingdom	Melanoma of the skin	Observational Prospective Before/after	Population in Leicestershire	Pigmented lesion clinic (PLC) was established in November 1986. Leaflets and posters were distributed to the public in waiting rooms, pharmacies, and public libraries in June 1987  GPs were advised and to refer all suspected lesions to the PLC with open access once a week	1: Before PLC started  2: After start of PLC before the publicity campaign (November 1986 to June 1987)	Work load of PLC  Number of new melanomas  Stage of melanomas	<b>Number of new melanomas</b> In PLC per session: 0.44 to 1.24 (In total, 28 to 46 melanomas) In Leicestershire per week: 1.02 to 1.88, p<0.001  <b>Stage of melanomas</b> A non-significant rise in lesions with better prognosis (log-linear model in GLIM-package) No significant change in either parameter after PLC establishment only	Moderate
Doherty et al 1988 [68] United Kingdom	Melanoma of the skin	Observational Prospective Controlled Before/after	Population of west of Scotland, 1979–1986	A 6-month professional update period for GPs and other members of the primary health care teams in June 1985 including education & information campaign to GPs (booklet, meetings, and general information)  Public information with posters and leaflets combined with press information at the time of Melanoma Week (in June)	Patients with melanoma before the campaign  Years before intervention – 1979–1984	T0: 1979–1984 n=811  T1+T2: 1985–1986 n=425	During 1985, the campaign year the total number of melanomas diagnosed rose with 23% compared with 1984  101/195 (52%) of these were less than 1.5 mm thick compared with 69/158 (44%) in 1984  In 1986, a further rise of 18% in the total number of melanomas diagnosed. The distribution between the three thick- ness categories similar to that in 1985  Percentage of thin melanomas increased from 39 to 52% and thick melanomas decreased from 33% to 24% between T0 and T1+T2 ( $\chi^2=14.01$ , p<0.005)	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Melia et al 2001 [70] United Kingdom	Melanoma of the skin	Observational Prospective Controlled Before/after	Population 15–74 years of age in 11 health districts in England, and 1 health board in Scotland, 1987–1989	Public campaign with education on melanoma detection; early signs of melanoma on a 7-point check-list in summer 1987 throughout 1989, 6 health districts in England, UK and one health board in Scotland	Population 15– 74 years in 5 regional health authorities		<b>Age-adjusted mortality rate</b> Females: RR 0.9 (95% CI, 0.7; 1.3) Males: RR 1.2 (95% CI, 0.9; 1.7)  No significant difference in mortality trends between areas, $p>0.30$	High

GP = General practitioner; IRR = Incidence rate ratio; ns = Not statistically significant, OR = Odds ratio; RR = Relative risk; SEER = The Surveillance, Epidemiology, and End Results program

**Table 4.2** Effect of organisational changes on organisation delay in cancer diagnosis.

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population Country	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Mant and Nanduri 2012 [86] United Kingdom	Childhood cancer	Observational, Retrospective	Children referred to Department of Paediatrics, Watford General Hospital, Watford, January 2007 to July 2010	2WW n=35	All children referred via the usual pathway n=47	NA	1/35 (2.8%) children referred via 2WW had cancer  47 children diagnosed with cancer came via other different routes. Time from first symptom to diagnosis in this group varied from 1 day to 6 months	Moderate
Harcourt et al 1999 [88] United Kingdom	Breast	Randomised controlled trial	Women referred from GP because of breast lump to Frenchay Healthcare Trust, Bristol	One-Stop Same Day Examination, ultrasound, fine needle biopsy, and mammography (when needed).  n=416  Breast cancer diagnosis:  n=44 (10.6%)	Two-Stop Same Week breast diagnostic clinics  n=375  Breast cancer diagnosis:  n=34 (9.1%)	Psychological distress assessed with HADS score + EORTC at 6 days and 8 weeks post- diagnosis	<b>Breast cancer rate (I/C)</b> 9.1/10.6%  <b>Women without cancer at 6 days (I/C)</b> Proportion with high anxiety 11.3/19.5%, p<0.01  <b>Women with cancer at 8 weeks</b> I had higher depressive levels than C, p<0.05	Moderate
Cant et al 2000 [85] United Kingdom	Breast	Observational Prospective Before/after	Women referred from GP because of suspected breast cancer to Combined Breast Clinic, Rotherham General hospital	2WW, 1 April to 30 June 30 1999  n=299	Routine, 1 April to 30 June 1998  n=308	NA	<b>Median time from referral to treatment (I/C)</b> All cases: 16/13 days Urgent cases: 10/9 days Non urgent cases: 21/14 days	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Valentin-López et al 2012 [84] Spain	Colorectal	Observational  <b>Rapid referral</b> prospective  <b>Standard referral</b> retrospective	Persons referred from GP to specialist department for suspected colorectal cancer in one Madrid health care district, August 2004 to October 2007	Referral directly to colonoscopy  Colorectal cancer  n=52	Standard referral  Colorectal cancer  n=311	NA	<p><b>Mean time (I/C)</b> From referral to colonoscopy: 15/34 days , p&lt;0.001 From diagnosis to surgery: 29/31 days, p=0.559 From referral to treatment 53/72 days, p=0.008 Proportion with total time from referral to surgery less than 3 months: 92/74%, p=0.008</p> <p>79% of the patients referred directly to colonoscopy had symptoms and signs that met the stated high-risk criteria for rapid referral</p> <p><b>Proportion with tumour stage A (Astler-Coller) at diagnosis</b> Colon cancer: 26/11%, p=0.03  Rectal cancer: 22/13%, p=0.276</p>	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Currie et al 2011 [76] United Kingdom	Rectal	Observational Prospective	Consecutive patients diagnosed with rectal cancer to Department of Colorectal Surgery, Croydon University Hospital, Croydon, January 2000 to December 2005	2WW  n=52	Patients referred by conventional pathway  n=73	NA	<p><b>Median time (I/C)</b> From referral to first appointment: 11/29 days, p=0.003 From first appointment to treatment: 46/45 days, p=0.37 From referral to treatment: 57/74 days, p=0.04</p> <p><b>Tumour stage</b> No difference at diagnosis: p=0.15</p> <p><b>5-year survival:</b> 49/52%, p=0.3</p>	Moderate
Davies et al 2002 [77] United Kingdom	Colorectal	Observational Prospective Before/after	Persons referred from GP to Yeovil District Hospital, Yeovil for suspect colorectal cancer	2WW, 1 November 1999 to 30 April 2000  n=158	Patients diagnosed 1 November 1998 to 30 April 1999  n=147	NA	<p><b>Median time from referral to diagnosis (I/C)</b> I Fast track: 11 days I Non-fast track: 32.5 days All elective cases: 17/38.5 days (p&lt;0.001)</p>	Moderate
McKie et al 2008 [87] United Kingdom	Head and neck	Observational Retrospective audit	Persons referred from GP to Freeman Hospital and Newcastle General Hospital, Newcastle upon Tyne for suspected head and neck cancer, 1 January, 2004 to 31 December, 2006	Patients diagnosed with head and neck cancer referred in 2WW route  n=48	Patients diagnosed with head and neck cancer in routine care  n=143	NA	<p>No difference in proportion of stage I head and neck cancer in those diagnosed in or outside the 2WW route during 2006 (26% vs 29%) or in those with tumour stage I + II (33% vs 43%, p=0.1)</p> <p>Of those referred in the 2WW route, 118 of 1 079 (10.9%) had cancer. Compliance to the 2WW referral rules was 84% in the 2WW route</p> <p>In those whose referral complied with the rules, 12.8% had cancer versus 6.2% of those whose referral did not comply</p>	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Lyhne et al 2012 [80] Denmark	Head and neck	Observational Retrospective Before/after	Patients diagnosed with head and neck squamous cell carcinoma and identified in the DAHANCA- database in three different time periods	Fast-track organisation implemented in 2007  Patients diagnosed January to April 2010  n=253	Patients diagnosed with head and neck cancer  1992: n=168  2002: n=211	NA	<b>Median time (2010/2002/1992, p 1992 vs 2010/1992 vs 2002)</b> First contact to diagnosis: 13/17/20 days, p<0.001/<0.001 Diagnosis to treatment: 25/47/31 days, p<0.001/<0.001 Diagnosis to radiotherapy: 19/40/21 days, p<0.001/<0.001 Diagnosis to surgery: 8/14/22 days, not significant/p<0.001  <b>Proportion fulfilling fast track standards of 2007</b> Time to diagnosis: 64/51/47% Time to radiotherapy: 22/1/7% Time to surgery: 48/22/17% Total time: 17/2/15%	Moderate
Tandon et al 2005 [82] United Kingdom	Head and neck	Observational  <b>Audit 1</b> Retrospective  <b>Audit 2</b> Prospective Before/after	Persons referred from GP to multidisciplinary oncology clinic, University Hospital Aintree, Liverpool for suspected head and neck cancer	2WW, 2001  <b>Audit 2</b> Consecutive patients diagnosed 2003  n=75	<b>Audit 1</b> Consecutive patients diagnosed December 1999 to December 2000  n=75	NA	<b>Median time (Audit 2/1)</b> GP-visit ENT: 2.1/5.1 weeks ENT-imaging: 3.2/5.6 weeks ENT-MRI: 3.3/4.1 weeks ENT-endoscopy: 2.3/3.1 weeks ENT-histology: 2.3/3.5 weeks ENT-radiotherapy: 10.2/10.3 weeks ENT-surgery: 7.7/5.5 weeks	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Toustrup et al 2011 [83] Denmark	Head and neck	Observational Prospective, Before/after	Patients diagnosed with head and neck cancer at Århus University Hospital	Fast-track organisation implemented 2007  Speeding of logistics for investigation prior to treatment and improving coordination between caregivers  n=446	October to December 2006  n=48	NA	<b>Median time (I/C)</b> From referral until first investigation: 2/8 days, p<0.0001 From first investigation until referral to treatment: 9/21 days, p<0.0001 From referral to treatment until treatment: 15/26 days, p<0.001 Total time from referral to treatment: 29/57 days, p<0.0001	Moderate
Aasebo et al 2012 [75] Norway	Lung	Observational Prospective Before/ after	Patients diagnosed with lung cancer at University Hospital of North Norway, Tromsø	A Lean method was implemented in 2009 in all levels at the Heart and Lung Clinic  n=69	All patients diagnosed with lung cancer in the area 2006–2008  n=40	Evaluated June 2010	<b>Median time (I/C)</b> “Diagnostic package path”: 16/64 days From diagnosis to surgery: 15/26 days	Moderate
Lal et al 2011 [78] United Kingdom	Lung	Observational Retrospective Before/after	Persons referred from GP to lung cancer clinics in Birmingham for suspected lung cancer	Fast track, staging thoracic CT within 1 week. June to December 2007  n=168	Patients with suspicious chest X-ray before fast track, January to December 2006  n=399		<b>Median time (I/C)</b> From referral to diagnosis 17/22 days, p<0.001. Proportion cancer diagnosis 52/31%. Proportion patients who felt that the diagnostic process took too long 6/19%	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Lijkendijk and Thind 2010 [79] Denmark	Carcinoma of the urinary bladder	Observational Retrospective Before/after	Patients subjected to cystectomy for urinary bladder cancer at Rigshospitalet, Copenhagen	Introduction of Kraeftpakkeforløb 2008  2009  n=35	Patients diagnosed in 2001  n=53  and 2005–2006  n=63	NA	<b>Median time (2009/2005-2006/2001)</b> Patient via GP to local hospital: 138/152/158 days, $p>0.05$ Local hospital to Rikshospitalet (tertiary hospital): 36/56/72 days, $p<0.01$ Frist appointment at Rikshospitalet to surgery: 27/25/31 days, $p>0.05$ Total time: 203/216/243 days, $p>0.05$	Moderate
Styring et al 2012 [81] Sweden	Soft-tissue sarcomas	Observational Retrospective	Consecutive patients with soft tissue sarcomas in the Southern Health Care Region  97 patients were referred to the sarcoma centre	Referral guide lines and open access clinic	NA		Time from referral to evaluation at sarcoma centre was 30 days for those referred directly and 64 days for those referred via a local hospital	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Osborne et al 1998 [64] United Kingdom	Skin Melanoma	Observational Retrospective Before/after	All patients with the diagnosis of melanoma 1984–1994 based on histopathology examination	Dedicated pigmented lesion clinic started in November 1986  Information to GPs about the clinic and diagnosis of melanoma issued at start and reminders in August 1986 and January 1987  Public campaign information on melanoma leaflets, posters, press releases, local media launched in July 1986, 1987 and 1988	Before PLC		<b>Mean time from referral from GP to first visit in in hospital</b> 1984: 27.9 SEM 6.6 days 1987: 11.3 SEM 2.3 days, $p < 0.01$ , (70% referred to PLC) 1994: 20.4 SEM 4.4 days, $p = ns$ , 48% referred to PLC)  Referral interval during the study was: to PLC 7 days other clinics 38.4 days plastic surgery 19.5 days	Moderate  The increase of interval after 1987 was due to patients referred to other clinics than PLC
Hsiao and Oh 2008 [71] USA	Skin	Observational Retrospective	All patients treated for skin cancer at VA Medical Center, San Francisco, 1 January 2003 to 31 July 2007	Store-and-forward teledermatology  Photo referrals from 3 remote primary care clinics  n=92	Conventional referrals  n=77	Review of charts over 4.5 years	<b>Median time (I/C)</b> Initial consult completion: 4/48 days, $p < 0.001$ Biopsy: 38/57 days, $p = 0.034$ Surgery: 104/125 days, $p = 0.006$  Priority referrals: 10/46%  Fewer visits to dermatology clinic before treatment in teledermatology group, $p = 0.02$  14% of patients required no visit before surgery in the teledermatology group versus none in the conventional group	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
May et al 2008 [73] United Kingdom	Skin Squamous cell carcinoma (SCC) and malignant melanoma (MM)	Observational Prospective	Persons referred from GP to Lanarkshire skin-cancer clinic, Airdrie	Store-and-forward teledermatology, photo including dermoscopy with electronic referral: n=451  13 MM 5 SCC	Usual referral without photo  n=not given  39 MM 37 SCC	NA	<b>Median time (I/C)</b> From referral to appointment: 14/24 days  Treatment within 62 days: MM 92/68% SCC 60/32%	Moderate
Leggett et al 2004 [72] United Kingdom	Skin	Randomised controlled trial	Persons referred from GP to dermatology department at Royal Victoria Hospital, Belfast	Referred with an instant photo taken by GP	Usual referral without photo	NA	63% (45/71) in the intervention group had a diagnosis and a management plan without requiring an appointment 25% (18/71) could be managed without appointment at all with a median time to decision of 17 days. 38% (27/71) could get a “photo- diagnosis” but needed to be seen before management with a median time to appointment of 36 days  Median time to appointment was 39 days in the control group	Moderate
Whited et al [74] 2002 USA	Skin	Randomised controlled trial	Persons referred to Dermatology Consult Service, VA Medical Center, Durham, North Carolina	Teledermatology with photo appended to referral  n=135	Usual care  n=140	NA	<b>Median time (I/C)</b> From referral to definitive treatment: 41/127 days  18.5% needed no clinic visit	Moderate

2WW = Two week wait program in National Health Service, England and Wales; CT = Computerised tomography; DAHANCA = Danish Head and Neck Cancer Group, ENT = Ear, Nose and Throat department; GP = General practitioner, MM = Malignant melanoma; NA = Not applicable; SCC = Squamous cell carcinoma. VA = Veterans affairs

**Table 4.3** Effect of self-examination on cancer diagnosis.

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Fletcher et al 1990 [89] USA	Breast	Randomised controlled trial	Continuing-care patients from 40 to 68 years of age at a general medicine group practice at Lineberger Cancer Centre, University of North Carolina, Chapel Hill	<b>Group 1</b> Nurse instruction stressing tactile skills of breast self- examination using a silicon model (Mammacare)  n=102 (52 randomised to receive encouragement by physician)  <b>Group 2</b> Nurse instruction (traditional) emphasising technique  n=99 (51 randomised to receive encouragement by physician)	<b>Group 3</b> No nurse instruction  n=99 (48 randomised to receive encouragement by physician)	Ability to find lumps in six breast models before interven- tion and after one year	156 women refused to enter trial  Women in group 1 found more lumps with an increase in sensitivity from 41 to 57%. Sensitivity increased from 39 to 47% in group 2 and from 41 to 45% in group 3. There was no change in specificity  BSE frequency increased from 3.0 to 4.6 in group 1, from 3.3 to 5.3 in group 2, and from 2.8 to 4.6 in group 3, per last six months  Physician encouragement had no influence  No group increased health care use or reported more overall worry about breast cancer	Moderate
Harvey et al 1997 [93] Canada	Breast	Case control study nested within a randomised controlled trial (Canadian National Breast Screening Study)	163 women who died of breast cancer and 57 women with distant metastases	Self-reported BSE frequency annually and annual objective assessments of BSE technique	2 200 women, matched for 5-year age groups, screening centre, year of enrolment, and random allocation group	BSE frequency and BSE technique 1, At 2, and 3 years before diagnosis of breast cancer	No difference in BSE frequency between groups  OR for death from breast cancer or distant metastatic disease for women who omitted 1, 2, or 3 of BSE technique components 2 years before diagnosis: 2.20 (95% CI, 1.30; 3.7) No difference at years 1 or 3	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Strickland et al 1997 [90] USA	Breast	Randomised controlled trial	Women regularly seeking preventive health screening – physical exams with family practice, internal medicine, or gynaecological physicians at six participating institutions  n=2 233	Three groups 1: Physician message n=764  2: Physician message + BSE class n=743  3: A physician message + BSE class + follow-up reinforcement n=726	No formal control defined	At 6 and 12 months	<b>n at 12 months: (group 1/2/3)</b> 688/608/585 352 drop-outs Largest drop-out in group 3  <b>Proportion reporting doing BSE five or more time during the last 6 months (group 1/2/3)</b>  <b>6 months follow-up</b> 51/62/81%, p<0.0001 for both group 2 compared with group 1 and group 3 compared with group 2  <b>12 months follow-up</b> 59/62/78%, p<0.0001 only for group 3 compared with group 2	Moderate
von Georgi et al 2006 [91] Germany	Breast	Randomised controlled trial	100 volunteers (50 men and 50 women)	Instruction video on BSE and palpation aid	Video not seen and palpation aid not used	NA	Instruction video did not influence correct positive hits (ANOVA, F=0.052, p=0.82) and the palpation aid was strongly and significantly associated with a reduced detection of lumps (p=0.00003)	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Semiglazov et al 1999 [95], also reported in Russian: Semiglazov et al 2003 [94] Russia  (data from the 2003 publication)	Breast	Randomised (cluster) controlled trial	123 748 (122 471, 1999) women aged 40–64 years in St Petersburg, Russia, from 28 different polyclinics, with 14 randomised to instructing BSE and 14 not	Invitation to BSE instruction 1985–1989 and yearly BSE boosts + access to self- referral breast clinics  n=58 985 (57 712, 1999)	No invitations to BSE instruction but access to self- referral breast clinics  n=64 763 (64 759, 1999)	BSE compliance assessments at 6, 12, 24 months, etc.  New breast cancer cases registered until 1994. Breast clinic visits, biopsy frequency, incidence of benign lesions, and cancer. 15-year mortality	<p><b>Absolute risks</b> I: 0.075 (4 340/58 985) C: 0.035 (2 438/64 763), p&lt;0.05</p> <p><b>Breast clinic visits</b> I: 0.016 (951/58 985) C: 0.01 (628/64 763), p&lt;0.05</p> <p><b>Biopsies</b> I: 0.011 (654/58 985) C: 0.005 (351/64 763), p&lt;0.05</p> <p><b>Benign lesions</b> I: 0.011 (654/58 985) C: 0.005 (351/64 763), p&lt;0.05</p> <p><b>Breast cancer incidence</b> I: 0.0085 (502/58 985) C: 0.0069 (449/64 763), p=0.09</p> <p><b>15-year breast cancer mortality</b> I: 0.0036 (213/58 985) C: 0.0034 (219/64 763) RR 1.07 (95% CI, 0.88, 1.29) (estimated from data in figure 2 in 2003 publication)</p> <p><b>10-year breast cancer mortality</b> I: 157/57 712 C: 164/64 759 RR 1.07 (95% CI, 0.86, 1.34) (estimated from data in figure 1 in 1999 publication)</p>	Moderate  Inconsistency in demographic data between the 1999 and the 2003 publications

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Thomas et al 2002 [96] China	Breast	Randomised (cluster) controlled trial	289 392 women, born 1925–1958 (age 30–63 at study start), associated with 519 textile factories in Shanghai  Total in analysis:  n=266 064	BSE instruction with multiple reinforcement sessions year 1 through 5  Randomised:  n=146 437  In analysis:  n=132 979	Education sessions on prevention of low back pain  Randomised:  n=142 955  In analysis:  n=133 085	Through 2000 (11 years)	<b>Breast cancer mortality</b> RR 1.04 (95% CI, 0.82; 1.33)  <b>Benign biopsies</b> RR 1.57 (95% CI, 1.48; 1.68)	High
UK Trial of Early Detection of Breast Cancer Group [97] 1999	Breast	Observational Prospective	236 103 women at 8 different breast cancer centres in UK  Age: 45–64 years	1: Invitation to mammography every 2 years + clinical examination every year + publicity  n=45 607  2: Invitation to instruction on BSE on entry to trial + publicity  n=63 373	No intervention  n=127 123	Up to 16 years	<b>Breast cancer mortality</b> RR 0.99 (95% CI, 0.87; 1.12)	Moderate

Author Year Reference Country	Cancer	Study design Retrospective/ prospective	Study population	Intervention (I)	Control (C)	Follow-up	Results	Study quality
Weinstock et al 2007 [92] USA	Melanoma, skin	Randomised controlled trial	Patients attending a routine primary care visit at 11 primary care practices in Rhode Island and nearby areas of Massachusetts  n=2 126	Instructional materials, including cues and aids, a video, and a brief counselling session + (at 3 weeks) a brief follow- up phone call from a health educator + tailored feedback letters  n=688	Patients attending a routine primary care visit  n=668	At 2, 6, and 12 months	<b>12-month follow-up (I/C)</b> Thorough skin self-examination: 55/35%, p<0.0001 Skin procedures: 82/46 Skin tumours: 11/9	Moderate

BSE = Breast Self-Examination, CI = Confidence interval, NA= not applicable, OR = Odds ratio; RR = Relative risk

**Table 4.4** Cost-effectiveness of interventions for finding cancer earlier.

Author Year Reference Country	Type of cancer	Setting Study-design Patients (n)	Type of diagnostic method	Medical outcome (effects)	Economical outcome	Authors conclusions	Study quality
Cristofolini et al 1993 [98] Italy	Melanoma skin	Health education campaign in the region of Trentino vs no campaign in the regions of Lombardia, Veneto, and Alto Adige  Observational study  n=no data	Health educational campaign for early diagnosis	SMR=22.3 “lives saved” during a period of 8 years  326.2 years of life saved, 214.2 years for men	<b>Costs of one life saved</b> \$ 5 838  <b>Costs per year of life saved</b> \$ 400  <b>Costs avoided vs Costs of campaign</b> Ratio 3.8/1	Early diagnosis of cutaneous melanoma from health educational campaigns might reduce health care costs	Moderate
Davies et al 1999 [99] England	Suspected cancers of upper GI tract, urinary tract, prostate and testis, skin	5 Quick and Early Diagnosis centres (QED) vs 3 conventional outpatient university clinics  Six-month cohort  n=3 793 vs 6 705	QED centres aimed at centralising all open access diagnostic services, including “walk-in” clinics	Time from GP referral to intervention shortened for QED clinics from 70 days to 21 days for all patients and to about 4 days for urgent cases	< £3 per day saved between GP referral and intervention for endoscopy, haematuria, upper gastro-intestinal cancer, testicular cancer, prostate cancer, melanoma	“Quick and early” diagnostic route provides a higher quality service compared to conventional outpatients	Moderate
Garattini et al 1996 [100] Italy	Melanoma skin	Health educational campaign in Bergamo  Targeted population  n=932 100	Health educational campaign for early diagnosis based on leaflets  Economic analyses by use of a decision model	Overall effectiveness 233.49 LYS, discounted to 171.3 LYS	5.28 million Italian lira in discounted costs per LYS	The campaign led to an increase both in the total number of early diagnoses and of total costs	Moderate
Moreno- Ramirez et al 2009 [101] Spain	Skin cancer	Skin cancer clinic at university hospital and 12 Primary care centres  Observational study of consecutive patients  n=2 009	Store-and-forward tele- dermatology for routine triage	Waiting interval to final intervention was 12.3 days for teledermatology vs 88.6 days for conventional care	Unit cost per patient £79.78 vs £129.37, p<0.005, for teledermatology and conventional care, respectively	Routine use of store-and- forward teledermatology in skin cancer clinics is cost- effective	Moderate

GP = General practitioner, LYS = Life-years saved, QED = Quick and Early Diagnosis centre, SMR = Standard mortality ratio

#### Referenser till Tabell 4. 1–4/References to Tables 4.1–4

60. Hempel S, Rubenstein LV, Shanman RM, Foy R, Golder S, Danz M, et al. Identifying quality improvement intervention publications – a comparison of electronic search strategies. *Implement Sci* 2011;6:85.
61. de Nooijer J, Lechner L, Candel M, de Vries H. Short- and long-term effects of tailored information versus general information on determinants and intentions related to early detection of cancer. *Prev Med* 2004;38:694-703.
62. Athey VL, Suckling RJ, Tod AM, Walters SJ, Rogers TK. Early diagnosis of lung cancer: evaluation of a community-based social marketing intervention. *Thorax* 2012;67:412-7.
63. Forbes LJ, Linsell L, Atkins L, Burgess C, Tucker L, Omar L, et al. A promoting early presentation intervention increases breast cancer awareness in older women after 2 years: a randomised controlled trial. *Br J Cancer* 2011;105:18-21.
64. Osborne JE, Bourke JF, Holder J, Colloby P, Graham-Brown RA. The effect of the introduction of a pigmented lesion clinic on the interval between referral by family practitioner and attendance at hospital. *Br J Dermatol* 1998;138:418-21.
65. Catalano R, Winett L, Wallack L, Satariano W. Evaluating a campaign to detect early stage breast tumors in the United States. *Eur J Epidemiol* 2003;18:545-50.
66. Del Mar CB, Green AC, Battistutta D. Do public media campaigns designed to increase skin cancer awareness result in increased skin excision rates? *Aust N Z J Public Health* 1997;21:751-4.
67. McCulloch P, Brown P, Martin B, Williams E. The effects of an awareness-raising program for patients and primary care physicians on the early detection of gastro-oesophageal cancer. *Surgery* 2003;133:154-61.
68. Doherty VR, MacKie RM. Experience of a public education programme on early detection of cutaneous malignant melanoma. *BMJ* 1988;297:388-91.
69. Graham-Brown RA, Osborne JE, London SP, Fletcher A, Shaw D, Williams B, et al. The initial effects on workload and outcome of a public education campaign on early diagnosis and treatment of malignant melanoma in Leicestershire. *Br J Dermatol* 1990;122:53-9.
70. Melia J, Moss S, Coleman D, Frost T, Graham-Brown R, Hunter JA, et al. The relation between mortality from malignant melanoma and early detection in the Cancer Research Campaign Mole Watcher Study. *Br J Cancer* 2001;85:803-7.
71. Hsiao JL, Oh DH. The impact of store-and-forward teledermatology on skin cancer diagnosis and treatment. *J Am Acad Dermatol* 2008;59:260-7.

72. Leggett P, Gilliland AEW, Cupples ME, McGlade K, Corbett R, Stevenson M, et al. A randomized controlled trial using instant photography to diagnose and manage dermatology referrals. *Fam Pract* 2004;21:54-6.
73. May C, Giles L, Gupta G. Prospective observational comparative study assessing the role of store and forward teledermatology triage in skin cancer. *Clin Exp Dermatol* 2008;33:736-9.
74. Whited JD, Hall RP, Foy ME, Marbrey LE, Grambow SC, Dudley TK, et al. Teledermatology's impact on time to intervention among referrals to a dermatology consult service. *Telemed J E Health* 2002;8:313-21.
75. Aasebo U, Strom HH, Postmyr M. The Lean method as a clinical pathway facilitator in patients with lung cancer. *Clin Respir J* 2012;6:169-74.
76. Currie AC, Evans J, Smith NJ, Brown G, Abulafi AM, Swift RI. The impact of the two-week wait referral pathway on rectal cancer survival. *Colorectal Dis* 2012;14:848-53.
77. Davies RJ, Ewings P, Welbourn R, Collins C, Kennedy R, Royle C. A prospective study to assess the implementation of a fast-track system to meet the two-week target for colorectal cancer in Somerset. *Colorectal Dis* 2002;4:28-30.
78. Lal A, Phillips S, Russell C, Woolhouse I. The novel use of fast track CT to select patients for lung cancer clinics: effect on clinic efficiency, waiting times, and patient satisfaction. *Postgrad Med J* 2011;87:264-8.
79. Lijkendijk M, Thind P. [Introduction of integrated cancer pathway shortens diagnostic delay in bladder cancer]. *Ugeskr Laeger* 2010;172:3330-2.
80. Lyhne NM, Christensen A, Alanin MC, Bruun MT, Jung TH, Bruhn MA, et al. Waiting times for diagnosis and treatment of head and neck cancer in Denmark in 2010 compared to 1992 and 2002. *Eur J Cancer* 2013;49:1627-33. Epub 2012 Dec 27.
81. Styring E, Billing V, Hartman L, Nilbert M, Seinen JM, Veurink N, et al. Simple guidelines for efficient referral of soft-tissue sarcomas: a population-based evaluation of adherence to guidelines and referral patterns. *J Bone Joint Surg Am* 2012;94:1291-6.
82. Tandon S, Machin D, Jones TM, Lancaster J, Roland NJ. How we do it: head and neck cancer waiting times. *Clin Otolaryngol* 2005;30:279-82.
83. Toustrup K, Lambertsen K, Birke-Sorensen H, Ulhoi B, Sorensen L, Grau C. Reduction in waiting time for diagnosis and treatment of head and neck cancer – a fast track study. *Acta Oncol* 2011;50:636-41.

84. Valentin-López B, Ferrandiz-santos J, Blasco-amaro JA, Morillas-sainz JD, Ruiz-lopez P. Assessment of a rapid referral pathway for suspected colorectal cancer in Madrid. *Fam Pract* 2012;29:182-8.
85. Cant PJ, Yu DS. Impact of the '2 week wait' directive for suspected cancer on service provision in a symptomatic breast clinic. *Br J Surg* 2000;87:1082-6.
86. Mant J, Nanduri V. Role of the 2-week urgent referral pathway in childhood cancer. *Arch Dis Child* 2012;97:233-5.
87. McKie C, Ahmad UA, Fellows S, Meikle D, Stafford FW, Thomson PJ, et al. The 2-week rule for suspected head and neck cancer in the United Kingdom: Referral patterns, diagnostic efficacy of the guidelines and compliance. *Oral Oncol* 2008;44:851-6.
88. Harcourt D, Rumsey N, Ambler N. Same-day diagnosis of symptomatic breast problems: Psychological impact and coping strategies. *Psychology, Health and Medicine* 1999;4:57-71.
89. Fletcher SW, O'Malley MS, Earp JL, Morgan TM, Lin S, Degnan D. How best to teach women breast self-examination. A randomized controlled trial. *Ann Intern Med* 1990;112:772-9.
90. Strickland CJ, Feigl P, Upchurch C, King DK, Pierce HI, Grevstad PK, et al. Improving breast self-examination compliance: A Southwest Oncology Group randomized trial of three interventions. *Preventive Medicine* 1997;26:320-32.
91. von Georgi R, Thele F, Hackethal A, Munstedt K. Can an instruction video or palpation aid improve the effectiveness of breast self-examination in detecting tumors? An experimental study. *Breast Cancer Res Treat* 2006;97:167-72.
92. Weinstock MA, Risica PM, Martin RA, Rakowski W, Dube C, Berwick M, et al. Melanoma early detection with thorough skin self-examination: the "Check It Out" randomized trial. *Am J Prev Med* 2007;32:517-24.
93. Harvey BJ, Miller AB, Baines CJ, Corey PN. Effect of breast self-examination techniques on the risk of death from breast cancer. *CMAJ* 1997;157:1205-12.
94. Semiglazov VF, Manikhas AG, Moiseenko VM, Protsenko SA, Kharikova RS, Seleznev IK, et al. [Results of a prospective randomized investigation [Russia (St.Petersburg)/WHO] to evaluate the significance of self-examination for the early detection of breast cancer]. *Vopr Onkol* 2003;49:434-41.
95. Semiglazov VF, Moiseyenko VM, Manikhas AG, Protsenko SA, Kharikova RS, Ivanov VG, et al. Role of breast self-examination in early detection of breast cancer: Russia/WHO prospective randomized trial in St.Petersburg. *Cancer Strategy* 1999:145-51.

96. Thomas DB, Gao DL, Ray RM, Wang WW, Allison CJ, Chen FL, et al. Randomized trial of breast self-examination in Shanghai: final results. *J Natl Cancer Inst* 2002;94:1445-57.
97. UK T. 16-year mortality from breast cancer in the UK Trial of Early Detection of Breast Cancer. *Lancet* 1999;353:1909-14.
98. Cristofolini M, Bianchi R, Boi S, Decarli A, Hanau C, Micciolo R, et al. Analysis of the cost-effectiveness ratio of the health campaign for the early diagnosis of cutaneous melanoma in Trentino, Italy. *Cancer* 1993;71:370-4.
99. Davies C, Grimshaw G, Kendall M, Szczepura A, Griffin C, Toescu V. Quality of diagnostic services for cancer: a comparison of open access and conventional outpatient clinics. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 1999;12:87-91.
100. Garattini L, Cainelli T, Tribbia G, Scopelliti D. Economic evaluation of an educational campaign for early diagnosis of cutaneous melanoma. *Pharmacoeconomics* 1996;9:146-55.
101. Moreno-Ramirez D, Ferrandiz L, Ruiz-de-Casas A, Nieto-Garcia A, Moreno-Alvarez P, Galdeano R, et al. Economic evaluation of a store-and-forward tele-dermatology system for skin cancer patients. *J Telemed Telecare* 2009;15:40-5.
129. Biger C, Epstein LM, Hagoel L, Tamir A, Robinson E. An evaluation of an education programme, for prevention and early diagnosis of malignancy in Israel. *Eur J Cancer Prev* 1994;3:305-12.