Supplementary Material: Australian Health Review 37(3), 381-388

Table S1 Summary of included studies of telephone coaching

APN, Advanced Practice Nurse; BAI, Beck anxiety index; BB, β blocker ; BMI, body mass index; CATI, computer-assisted telephone interviews; CG, control group; CCHF, congestive heart failure; DDMP, double-disease management program;
DSN, diabetes specialist nurse; ER, emergency room; GAP, guidelines applied to practice; HF, heart failure; HRQL, health-related quality of life, HTU, home telemedicine unit; LDL-C, low-density lipoprotein cholesterol; LI, less intensive; LSP, light support program; MI, more intensive; NS, not significant; NY, New York; PA, physical activity; PHC, primary healthcare; PHQ, patient health questionnaire; PS, peer supporter; RN, registered nurse; SES, socioeconomic status; TC, telephone counselling; UC, usual care; VA, Veterans Affairs; WC, waist circumference

Reference Kelly 2005[53] Linked paper(s):**Country:** Australia **Target Population:** Type 2 diabetes Vulnerable: 10% Chinese speaking **Level of care**: 1 NHMRC Level of Evidence: III **Patients recruited from**: PHC **Duration of study**: 18 months **Number of patients:** 343 **%Male:** 0.43 **Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** The Good Life Club project was a 3-year demonstration project funded by the Commonwealth Department of Health and Ageing. The project utilised several interventions to support people with diabetes to improve SM of their condition and more effectively utilise existing local health services **Telephone Coaching Intervention Unscripted Planned** individual telephone coaching by practice nurses and allied health professionals to support behaviour change of participants. Clients were telephoned monthly by the coach to review progress towards their goal, and to support their self-efficacy through enhancing positive behavioural strategies. **Delivered by: Number of telephone calls: Duration of calls: Duration of the program:** 12 months **Linkages with usual PCP** Care plan from GP was plan but occurred at time when not common. SM plan developed and patient encouraged to discuss this with their GP. In addition 3-monthly reports provided for GP **Compared with:**	**Outcomes Functional / health status** Self-rated health improved after taking part in the program - pain, fearfulness, worry, frustration **Satisfaction Health service use Economic outcomes**
Reference Walker 2011[51] Linked paper(s):**Country:** USA **Target Population** Type 2 diabetes Vulnerable: Lower SES and immigrants - members of healthcare worker fund **Level of care**: 1 NHMRC Level of Evidence: **Patients recruited from**: Members of healthcare worker fund **Duration of study**: 12 months **Number of patients:** 526 **%Male:** 36.9% **Mean age**: 55.5 (7.3) **Uptake to program: Facilitators:** Patients did not even need to go to medical centre for HbA1c test - dry blot and mailed **Barriers:**	**Study aim:** To compare the effectiveness of a telephonic and print intervention over 1 year to improve diabetes control **Telephone Coaching Intervention Unscripted Planned** Trained health educators provided telephone intervention with focus on medication adherence and lifestyle changes. Program was patient centred and involved goal setting, empowerment and self-efficacy. **Delivered by:** Trained health educators **Number of telephone calls:** 7.9 ± 2.1 **Duration of calls:** 14.1 ± 4.6 min **Duration of the program:** 12 months **Linkages with usual PCP Compared with:** Printed materials	**Outcomes Physiological measures of disease** HbA1c 0.4% lower in intervention compared with control (95% CI 0.1–0.7 P = 0.009). The greater the intensity (≥ 6 calls) the greater the change in HbA1c **Adherence** Medication use change oF = >20% in those not on insulin was improved with intervention (P = 0.005)

Reference Anderson 2005[47] Linked paper(s): **Country:** USA **Target Population** T2DM Vulnerable: African Americans **Level of care**: 1 NHMRC Level of Evidence: II **Patients recruited from**: Community. People self-enrolled. **Duration of study**: 1 year **Number of patients:** *n* = 239 125: 6-session program 114: Wait-listed CG One of the two 1-year long interventions *n* = 224 **%Male: Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** To evaluate the impact of a problem-based empowerment patient education program specifically tailored for urban African Americans with type 2 diabetes. **Telephone Coaching Intervention Unscripted Planned** Patients were randomly assigned to either a 6-week 2-h weekly group session (intervention group) or a 6-week wait-listed CG (this CG also had the 6-week 2-h weekly group sessions after waiting for 6 weeks). After completing the six sessions, ALL patients were invited to participate in one of two follow-up interventions: Intervention: Receive a monthly individually scheduled phone call **Delivered by:** Nurse **Number of telephone calls:** 12 **Duration of calls: Duration of the program:** 1 year **Linkages with usual PCP Compared with:** A monthly support group	**Outcomes Physiological measures of disease** Assessment measures included HbA1C, lipids, BP, weight: both control and intervention patients showed a broad array of small-to-modest positive changes during the 6-week RCT. These gains were maintained or improved upon during the 1-year follow-up period. No between-group differences existed in HbA1c for the phone and support group follow-up interventions. For patients in the two follow-up interventions a positive correlation was seen between the number of follow-up contacts and their 1-year HbA1C values.
Reference Dale 2009Linked paper(s): **Country:** UK **Target Population** T2DM NIL Vulnerable: NO **Level of care**: 1 NHMRC Level of Evidence: II **Patients recruited from**: 40 general practices **Duration of study**: 6 months **Number of patients:** 231. 90 (39%) were randomised to the PS group, 44 (19%) to the DSN group, 97(42%) to the CG. **%Male:** PS: (55.7%) DSN: (52.4%) CG: (64.0%) **Mean age**: Majority in the 51–69 year group **Uptake to program: Facilitators: Barriers:**	**Study aim:**To test trial design issues related to measuring the effectiveness of a peer telephone intervention to enhance self-efficacy in type 2 diabetes; evaluate the impact on self-efficacy and clinical outcome; and describe patient and peer experience. **Telephone Coaching Intervention Unscripted Planned** The intervention was intended to increase self-efficacy in relationship to lifestyle behaviours and medication adherence, leading to improvements in clinical outcomes. Patients were allocated to one of three groups: telecare support provided by PS, telecare support provided by DSNs, and CG. Telecare support was intended to supplement routine care by motivating adherence to the advice provided by the GP or practice nurse at the time of a change (medication and/or lifestyle) in the patient's diabetes care. For intervention patients, the first telecare call was made 3–5 days later, and the 'standard package' offered subsequent contact at the following points: days 7–10, 14–18, 28–35, 56–70, 120–150. In this way more intense reinforcement of the therapeutic or behaviour change occurred during the early weeks following its initiation, with gradual tapering off of support over a period of months. The frequency of calls, however, was intended to be tailored to patients' individual needs and telecare supporters were taught to negotiate the time of subsequent contact as part of the closure of each call. **Delivered by:** A PS or a DSN **Number of telephone calls:** The frequency of calls was intended to be	**Outcomes Physiological measures of disease** Differences in terms of HbA1c levels were generally small and not statistically significant. **Self-efficacy** The primary outcome was self-efficacy, as measured by the Diabetes Management Self-Efficacy Scale. Self-efficacy improved for patients in the PS group. There were no significant differences between groups in self-efficacy **Quality of life** There were no significant differences between groups in terms of diabetes **Satisfaction** 77% of PS group respondents compared with 94% of those in the DSN group said they would recommend the telecare support to other patients ($P = 0.04$). The qualitative data confirmed that patients generally found the telephone support to be a useful addition to routine care. While most patients acknowledged the potential benefits of such a service, especially when a person is first diagnosed with diabetes, those who felt that their diabetes was already under adequate control did not feel that they derived particular benefits

	tailored to patients' individual needs and telecare supporters were taught to negotiate the time of subsequent contact as part of the closure of each call. Each patient received on average 4.5 calls **Duration of calls:** Calls lasted on average 9.5 min (range 1–37 min, s.d. = 6.3 min), with first calls lasting on average 13.3 min. The mean total contact time per patient was 54.8 min (range 9–130 min, s.d. = 25.5). **Duration of the program:** 150 days **Linkages with usual PCP Compared with:** Routine care alone. Patients in the CG received a single call from a researcher at day 3–5. The patients were informed that they were allocated to the routine care group and were encouraged to follow the advice of their GP or practice nurse.	
Reference Brennan 2010[41] Linked paper(s): **Country:** USA **Target Population** Hypertension Vulnerable: privately ensured African Americans **Level of care**: 1 NHMRC Level of Evidence: II **Patients recruited from**: Self-identified African Americans in health maintenance organisation plans. PCP office **Duration of study**: 12 months **Number of patients:** 320 DMP318 LSP **%Male:** 0.33 **Mean age: Uptake to program:** 638 completed initial assessment, and 485 completed follow-up assessment **Facilitators:** **Barriers:**	**Study aim:** To determine whether a telephonic nurse DMP designed for African Americans is more effective than a home monitoring program alone to increase BP control among African Americans enrolled in a national health plan. **Telephone Coaching Intervention Scripted Planned** The intervention group, consisted of a high-intensity, multimodal, culturally competent DMP. The CG was a light support educational program. All participants received BP monitors and written and nurse-directed phone call instructions to measure their BP at home at regular intervals. DM nurses initiated monthly calls to the intervention group with the goals of improving their hypertension knowledge and supporting lifestyle changes and adherence to the Dietary Approaches to Stop Hypertension diet. **Delivered by:** DM nurses: all DM nurses received special training in cardiac care and completed cultural competency training **Number of telephone calls:** The median number of completed calls per participant was 3, with a range of 1–10. **Duration of calls:** Between 15 and 20 min. **Duration of the program: Linkages with usual PCP** Three quarterly reports that contained the patient's most recent self-reported BP and DM goals were sent to each intervention group participant's PCP office. **Compared with:**	**Outcomes Physiological measures of disease** Systolic BP was lower in the intervention group $P = 0.03$; there was no difference for diastolic BP. The intervention group was 50% more likely to have BP in control $P = 0.052$ and 46% more likely to monitor BP at least weekly $P = 0.02$ than the CG. **Health behaviour** The intervention group was 46% more likely to monitor BP at least weekly $P = 0.02$ than the CG. **Quality of life** distress as measured by PAID at baseline and follow-up. **Adherence** There were no statistically significant differences between the groups in the use of two or more antihypertensive medication classes **Health service use** There were no statistically significant differences between the groups in the mean number of PCP, cardiologist and specialist physician visits.
Reference Han 2010[49] Linked paper(s): **Country:** USA **Target Population** Hypertension Vulnerable: Monolingual Korean Americans (one of the most under-served minority populations in the US) **Level of care**: 1 NHMRC Level of	**Study aim:** Nurse TC can improve the management of chronic conditions, but the effectiveness of this approach in under-served populations is unclear. This study evaluated the use of bilingual nurse-delivered TC in Korean Americans participating in a community-based intervention trial to improve management	**Outcomes Physiological measures of disease** Changes in BP outcomes reported elsewhere **Health behaviour** Other health behaviours improved significantly, except for smoking, with a reduction in alcohol consumption and increase in

Evidence: II **Patients recruited from**: Ethnic churches, groceries and through ethnic media **Duration of study**: 15 months **Number of patients:** 445 **%Male:** ~50% **Mean age**:52 years **Uptake to program:** 445 *v.* 360 at 15 months **Facilitators:** The success of telephone outreach was influenced by the dose of the intervention, the participant's employment status, and the number of years of residence in the US. **Barriers:**	of hypertension. Our purpose was twofold: (1) to characterise the receptivity of TC as a function of the sociodemographic and disease-related characteristics of the sample; and (2) to compare key behavioural outcomes by the dose of counselling. **Telephone Coaching Intervention Scripted Planned** The intervention had three components: (1) structured psychobehavioural education; (2) home BP monitoring with a tele-transmission system; and (3) TC by a bilingual nurse. After a 6-week in-class or mail-based hypertension education course and a 6-week test period for home BP monitoring, at 3 months, participants were randomly assigned to two groups: Intervention: MI biweekly (n = 203), **Delivered by:** Bilingual nurses **Number of telephone calls:** About 18 calls per person for the MI and ~10 calls per person for the LI groups **Duration of calls:** The length of calls was longest for the first session (18.1 ± 7.8 min). The average length of the subsequent counselling sessions for the MI group was longer than that for the LI group (P < 0.001) **Duration of the program:** 12 months **Linkages with usual PCP Compared with:** Received LI (n = 194) monthly TC for 12 months (there was no CG in the study and hence it is not possible to determine whether the intervention is better than UC)	exercise for both groups (P < 0.01 for all within-group tests). None of these behavioural outcomes differed between the two groups. The result suggests that monthly TC for 12 months may be as effective as more frequent, biweekly counselling. **Adherence** At 3 months, the proportion of patients taking antihypertensive medication was similar for both groups. Over the 12-month counselling period, both groups showed a positive trend towards an increase in medication taking. The MI group showed a slightly greater increase in the number of patients reporting medication taking (6.5%, P = 0.041 for the within-group change), while the increase in the LI group was NS.
Reference Powers 2009Linked paper(s): Reed 2010 **Country:** USA **Target Population** Hypertension diabetes; there were only 219 patients with diabetes (117 patients in the UC arm and 102 patients in the intervention group) Vulnerable: **Level of care**: 1 NHMRC Level of Evidence: II **Patients recruited from**: VA medical centre PHC (three sites). **Duration of study**: 24 months **Number of patients:** 588 **%Male:** I = 98% C = 99% **Mean age**: ~63 years **Uptake to program:** Intervention: 233 Control: 240 **Facilitators:** **Barriers:**	**Study aim:** To evaluate the effect of a tailored hypertension SM intervention on the unintended targets of HbA1c and LDL-C. **Telephone Coaching Intervention Scripted Planned** Interventions occurred at two levels: provider and patient. PCPs were first randomised to receive either the computer decision support system focusing on hypertension medication management delivered at the point of care during patient visits or UC without the decision support interface. Within each participating provider's primary care panel, patients with hypertension were then randomised to receive either a nurse telephone hypertension SM intervention or usual primary care. The nurse telephoned patients within 1 week of randomisation and then every 2 months over 24 months to deliver the intervention for a total of 12 nurse calls. There were no face-to-face meetings between the nurse and the patient. **Delivered by:** Nurse **Number of telephone calls:** The majority of the patients in the intervention arm received all 12 phone calls (mean number of calls	**Outcomes Physiological measures of disease** For the patients with diabetes, the hypertension SM intervention resulted in a 0.46% reduction in HbA1c over 2 years compared with UC (95% confidence interval, 0.04–0.89%; P = 0.03). For LDL-C, there was a minimal 0.9 mg dL^{-1} between-group difference (NS)

	11.0; median 12; range 3–12) **Duration of calls:** The average phone call lasted 5 min. **Duration of the program:** 24 months **Linkages with usual PCP Compared with:** Patients enrolled in both the intervention arm and UC received routine primary care throughout the study.	
Reference Reed 2010[55] Linked paper(s): Powers 2009 **Country:** USA **Target Population** Hypertension Vulnerable: **Level of care**: 1 NHMRC Level of Evidence: II **Patients recruited from**: Community-based primary care clinics in a large academic health system. **Duration of study**: 24 months **Number of patients:** 636 **%Male:** Home BP Monitoring: 29% Behavioural Intervention: 33% Combined Intervention: 38% UC: 36% **Mean age**:~61 years **Uptake to program:** 475 (75%) completed 24 months of follow-up. **Facilitators: Barriers:**	**Study aim:** To examine direct and patient time costs associated with three interventions to reduce systolic BP and UC: multi-component telephonic behavioural lifestyle intervention; patient self-monitoring; and both interventions combined **Telephone Coaching Intervention Scripted Planned** Patients with hypertension randomly assigned to the four study groups: (1) multi-component telephonic behavioural lifestyle intervention, (2) patient self-monitoring, (3) both interventions combined and (4) UC. The behavioural intervention was administered by a nurse during 12 bimonthly telephone encounters. These encounters included a core set of survey modules that could be activated during each call (e.g. medication and side effects) plus additional modules activated at specific intervals (e.g. diet, hypertension knowledge). For each call, the nurse used a computer program designed to tailor the questions and information presented to each patient and to store patient-specific information. **Delivered by:** Nurse **Number of telephone calls:** 12, every 2 months telephone encounters **Duration of calls:** On average, each telephone encounter lasted 15.9 min (s.d. 7.2). Altogether, patients spent an average of 2.74 h (s.d. 0.84) on the phone across all encounters. **Duration of the program:** 24 months **Linkages with usual PCP Compared with:** Patient self-monitoring group UC group	**Outcomes Physiological measures of disease** Mean systolic BP in the UC group was largely unchanged between baseline and 24 months. At 24 months, compared with the UC group, mean systolic BP decreased (NS) in the home monitoring arm, increased (NS) in the behavioural intervention arm, and decreased ($P = 0.01$) in the combined intervention. **Health service use** During 24 months of follow-up, ~1 in 5 patients was hospitalised, with the majority (56.9%) being hospitalised once. The mean number of total inpatient days per patient was lowest in the combined intervention group, but none of the intervention groups differed significantly from UC. Patients in the combined intervention group had a mean of 18.5 (s.d. 17.4) outpatient encounters during the follow-up period (NS compared with UC), ~2 more than patients in the home monitoring group (NS compared with UC), the behavioural intervention group (NS compared with UC). **Economic outcomes** Patients incurred a mean of $6965 (s.d. $22 054) in inpatient costs and $8676 (s.d. $9368) in outpatient costs, with NS differences among the groups. Intervention costs were estimated at $90 (s.d. $2) for home BP monitoring, $345 (s.d. $64) for the behavioural intervention ($31 per telephone encounter), and $416 (s.d. $93) for the combined intervention. Patient time costs were estimated at $585 (s.d. $487) for home monitoring, $55 (s.d. $16) for the behavioural intervention, and $741 (s.d. $529) for the combined intervention. Compared with the UC group, mean total medical costs were

		$947 higher in the home monitoring group, $910 higher in the behavioural intervention group, and $626 higher in the combined intervention group
Reference Amoako 2007[22] Linked paper(s): Amoako 2008 **Country:** USA **Target Population** Type 2 diabetes Vulnerable: Older African American women **Level of care**: 2 NHMRC Level of Evidence: II-I **Patients recruited from**: Self **Duration of study**: **Number of patients:** 68 **%Male:** 0 **Mean age**: 55–65 **Uptake to program: Facilitators: Barriers:**	**Study aim:** The purpose of this study was to test the efficacy of an individualised psycho-educational diabetes uncertainty management intervention directed at managing diabetes-related uncertainties and delivered by a nurse via telephone to older African American women **Telephone Coaching Intervention Scripted Planned** Motivational interviewing techniques and focussed on four aspects of T2DM: diagnosis/prognosis, treatment concerns, economic/social/family aspect and self-care. It was driven by the women's needs **Delivered by:** Trained African American nurse **Number of telephone calls:** 1 per week for 4 weeks **Duration of calls:** 10–60 min **Duration of the program:** 4 weeks **Linkages with usual PCP Compared with:**	**Outcomes Health behaviour** Reduced diabetes uncertainty in intervention group ($P < 0.05$) **Satisfaction** Found it convenient and improved their problem solving skills
Reference Amoako 2008[23] Linked paper(s): Amoako 2007 **Country:** USA **Target Population** T2DM Hypertension Vulnerable: Older African American women **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: Clinics and physicians' offices **Duration of study**: 6 weeks **Number of patients:** 68 I:38 C:30 **%Male:** 0 **Mean age**: 61 (9.5) **Uptake to program: Facilitators: Barriers:**	**Study aim:** To evaluate a telephone intervention to reduce uncertainty (through problem-solving strategies, information, cognitive reframing, and improved patient–provider communication)—namely, to measure its effects on diabetes self-care (diet, medicines, foot care, exercise, blood sugar) and psychosocial adjustment. **Telephone Coaching Intervention Scripted Planned** Intervention was implemented on the phone every week for 4 weeks and was embedded in a semi-structured clinical interview that included open-ended questions, direct exploration, and use of reflective comments. **Delivered by:** African American geriatric nurse practitioner **Number of telephone calls:** 1 per week for 4 weeks **Duration of calls:** 10–60 min **Duration of the program:** The experimental group received the intervention for 4 weeks **Linkages with usual PCP Compared with:** UC	**Outcomes Health behaviour** Exercise significantly improved in intervention group $P < 0.001$. Intervention group showed improvement in diet, medications (NS). **Quality of life** Psychosocial adjustment significantly improved in intervention group. $P < 0.001$ **Adherence** Intervention group showed improvement in foot care (NS). Minimal difference between groups on blood sugar testing
Reference Sacco 2009[46] Linked paper(s): **Country:** USA **Target Population** Type 2 diabetes Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: GP or a diabetes centre **Duration of study**: 6 months **Number of patients:** 62 **%Male:** N/A **Mean age**: 52 (8.6) **Uptake to program:** 33% attrition, patients	**Study aim:** To examine whether compared with treatment as usual, a brief, regular, telephone 'coaching' intervention delivered by para professionals would produce improved diabetes adherence, glycaemic control, diabetes-related medical symptoms, and reduced levels of depression **Telephone Coaching Intervention Scripted Planned** Sessions were guided by Coaching checklist with structured format to address self-care,	**Outcomes Physiological measures of disease** No difference in HbA1c **Health behaviour** Summary of Diabetes Self-Care Activities significant improvement in intervention ($P = 0.001$) Questionnaire **Adherence** Increased exercise and self foot care with intervention **Functional / health status** Depression significantly

dropped out after 3.8 calls **Facilitators: Barriers:** Inexperienced facilitators may contribute to high attrition. All eligible patients recruited rather than those that volunteered and this may have led to higher attrition rate	blood sugar testing, medication, lifestyle, foot care etc. Blood sugar readings were reviewed and goals set **Delivered by:** Psychology students **Number of telephone calls:** 1 per week for 3 months and 1 per 2 weeks for 3 months **Duration of calls:** 18 min **Duration of the program:** 6 months (24 weeks) **Linkages with usual PCP** Coaches conferred with healthcare team when necessary if something came up in the telephone session **Compared with:**	improved with intervention
Reference Ma 2010[42] Linked paper(s): **Country:** USA **Target Population** CHD Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: Umass Memorial Medical Centre - patients who were seen for a CHD clinical event **Duration of study**: 12 months **Number of patients:** 689 338 to the control, and 351 to the intervention. Only 559 had complete pharmacy records and were included in the final analysis **%Male:** 60% **Mean age**: 60 **Uptake to program: Facilitators: Barriers:**	**Study aim:** A randomised control trial testing a pharmacist delivered program to improve adherence to lipid lowering pharmacologic therapy in patients with known CHD. The objective of the study was to compare intervention and UC conditions for LDL-C goal attainment and proportion of prescribed lipid-lowering medication taken by subjects over a 1-year period **Telephone Coaching Intervention Scripted Planned** Seen by one of the pharmacists before discharge. This allowed the pharmacist to establish a relationship with the patient, explain the pharmacist's role in the study, provide education about all discharge medications and set the framework for the follow-up telephone calls. The calls took place at 1, 3, 6 and 9 months following discharge. The goal was to assist patients to remain adherent to prescribed statins and other medications, and also promote adherence to guidelines for LDL-C. During these calls, pharmacists utilised a patient-centred counselling algorithm (address general issues, assess, advise, assist, arrange follow-up to help the patients develop a medication adherence plan). In addition, the pharmacist facilitated scheduling of repeat blood draws for lipid measurement and provided information, guidelines and prompts to the patient and to the patient's physician or nurse practitioner with regard to LDL-C management. The study pharmacists were trained in the delivery of patient-centred counselling and followed patient-centred protocols for the inpatient and telephone contacts. The pharmacists participated in an in-depth training program, which included a role playing session and a 4-h meeting. One of the study investigators listened to the TC session for quality control and provided feedback to pharmacists on their counselling skills. **Delivered by:** pharmacist **Number of telephone calls:** Calls were made a 1, 3, 6 and 9 months	**Outcomes Physiological measures of disease** LDL-C <100 mg dL^{-1}. At 1 year, 65% in the intervention group and 60% in the UC condition achieved an LDL-C <100 mg dL^{-1} ($P = 0.29$). The highest percentage of those who reached the LDL-C goal were participants who used statins as opposed to those who did not use statins (67% versus 58% - $P = 0.5$) however only about half the patients in both groups were using statins. **Adherence** proportion of prescribed statin medication taken by patients, the proportion of patients prescribed ACE inhibitor and BB medication. Mean statin adherence was 0.88 in the intervention group and 0.90 in the CG ($P = 0.51$)

	post discharge. **Duration of calls:** not stated **Duration of the program:** 9 months **Linkages with usual PCP** Patient's physician or nurse practitioner was emailed a summary of the discussion after each pharmacist contact with the patients. The email included three categories (adherence, CAD and hyperlipidaemia) along with recommendations for each. **Compared with:** UC	
Reference Cole 2006[28] Linked paper(s): **Country:** USA **Target Population** CHF Depression.Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: ?**Patients recruited from**: Primary care **Duration of study**: **Number of patients:** 24 **%Male:** 43% (Major depression) 50% (other depression) **Mean age**: 73.8 years (Major depression) 77 years (other depression) **Uptake to program:** Nineteen patients had entry and follow-up PHQ scores. **Facilitators: Barriers:**	**Study aim:** To assess the feasibility of a telephonic nurse DDMP for patients with depression and CHF. Pilot study **Telephone Coaching Intervention Scripted Planned** Patients entered into a pilot telephonic DDMP modelled after Wagner's chronic illness care model. The model for telephonic care (after determination of eligibility utilising the PHQ) included: (1) an initial telephone call establishing the working relationship, (2) assessment of adherence to the physician's overall treatment plan, (3) evaluation of side effects from medication, and (4) subsequent calls, at least monthly, with telephonic administration of the PHQ. Calls followed a semi-structured format, and essential outcomes of the call were faxed immediately to the patient's treating physician. All cases were reviewed at least weekly by the project psychiatrist, who communicated clinical suggestions to the treating physician by fax or phone call. Although the formal telephonic DM interventions were focussed on depression care, the nurse also evaluated and encouraged adherence to cardiac medications, and provided general medical education and SM support for lifestyle alterations. **Delivered by:** One DM nurse practitioner (care manager) with general medical, but not speciality psychiatric, experience received training (i.e. individualized depression management and general coaching) **Number of telephone calls:** Monthly **Duration of calls:** 15 min **Duration of the program:** 6 month **Linkages with usual PCP** Essential outcomes of the call were faxed immediately to the patient's treating physician. All cases were reviewed at least weekly by the project psychiatrist, who communicated clinical suggestions to the treating physician by fax or phone call. **Compared with:** None	**Outcomes Health service use Economic outcomes**
Reference Copeland 2010[44] Linked paper(s): **Country:** USA **Target Population** CHF	**Study aim:** To assess the effect of a telephone intervention to improve quality of life among patients with CHF.	**Outcomes Physiological measures of disease** After the year-long intervention, no

Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: Veteran Affairs **Duration of study**: 12 months. Retrospectively, 1-year pre-intervention data were collected to provide baseline assessments. **Number of patients:** 220 (I)238 (C) **%Male:** 0.99 **Mean age**: 70[11] years **Uptake to program:** 126 (I)172 (C) **Facilitators:** **Barriers:**	**Telephone Coaching Intervention** **Scripted Planned** 1-year home-based telephone disease management CHF program. RNs conducted a telephone survey at intake, with reassessments at 6 and 12 months querying participants' knowledge, behaviour, and health status. During the scheduled telephone interactions, disease management nurse interventions included education and coaching for behaviour change based on guidelines established by the American Heart Association and using motivational interviewing principles. Interventions occurred more frequently in the first 6 months of the program and focussed on the participant-specific SM plan derived from the participant admission history and based on the program focus. The program focus was participant education and behaviour change for fluid weight management, medication adherence, diet, early treatment for escalating symptoms, discussion of recent laboratory values and vital signs monitoring. The intervention included access to a nurse advice line for symptoms and counselling 24 h a day 7 days per week, medication compliance reminders, vaccination reminders, and printed literature, including action plans, workbooks, and post-assessment letters, in addition to the scheduled nurse education and motivational interviewing sessions. **Delivered by:** Nurses **Number of telephone calls:** Patients sorted into three risk categories that determined the frequency of scheduled telephone interactions over the course of the year (low [2 calls], medium [7 calls] and high risk [16 calls]). Interventions occurred more frequently in the first **Duration of calls:** The mean intervention length was 30–40 min **Duration of the program:** 12 months **Linkages with usual PCP** Participant's physician was provided with faxed alerts about signs and symptoms of decompensation, as well as notification of gaps between participant-reported practice and guideline recommendations. In addition, communication to physicians occurred through the VA electronic medical record system regularly and was customary after each scheduled call, providing information on the patient's condition. **Compared with:**	differences in clinical outcomes were noted between the intervention group and the CG. No differences in survival were detected. **Quality of life** No differences in HRQL **Adherence** Intervention group patients reported better compliance with weight monitoring and exercise recommendations. **Functional / health status** No significant differences were noted for the mental component score. **Satisfaction** No significant differences in satisfaction with care **Health service use** No significant differences were noted for admissions, CHF-related admissions, 30-day readmissions, medication costs **Economic outcomes** The CHF-related costs were higher for the intervention group at ~ $6165, as were overall costs that included the cost of the intervention.
Reference Bosworth, 2011Linked paper(s): **Country:** USA **Target Population** Hypertension Only some had	**Study aim:** To determine which of three interventions was most effective in improving BP control The Hypertension Intervention Nurse Telemedicine Study	**Outcomes Physiological measures of disease** The improvement in BP control relative to UC at 12 months was

T2DM Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: From primary care patients in a VA general internal medicine clinics. **Duration of study**: **Number of patients:** 591**% Male:** 0.92 **Mean age: Uptake to program:** BP measurements were available for 503 patients (85%) at 18 months of follow-up **Facilitators: Barriers:**	trial **Telephone Coaching Intervention Scripted Planned** Randomised into either: (1) nurse-administered, behavioural management intervention; (2) nurse-administered, physician-directed medication management intervention using a validated clinical decision support system; or (3) combined behavioural management and medication management intervention. All intervention patients were provided a home BP monitor and telemedicine device and advised to measure BP once every other day. BP measurements transmitted to a server. If BP too high, intervention was activated, and home BP reassessed at 6 weeks before triggering the intervention again. Behavioural management intervention consisted of 11 tailored health behaviour modules focussed on improving hypertension SM. Verbal information was reinforced with mailed handouts. The nurse used an intervention software application that contained predetermined scripts and patient-specific tailored algorithms for the modules. On triggers in the medication management intervention, a nurse notified and provided a physician with a medication change recommendation based on the decision support software. Physician decided whether to change hypertension medication. Nurse communicated recommended changes to the patient and called the patient 3 weeks afterwards to obtain reports of adverse effects and address patient questions. In the combined intervention group, nurse initially addressed recommended medication adjustments followed by the tailored behavioural intervention. **Delivered by:** Nurses **Number of telephone calls: Duration of calls:** Each encounter consisted of three or four modules and lasted 12–14 min. Across the three intervention groups, 13.2 min was the mean time spent by nurses on each completed encounter: 12.0, 13.9, and 13.7 min in behavioural management, medication management, and combined intervention. **Duration of the program:** 18 months **Linkages with usual PCP** Patients in all four study arms received primary care and management of hypertension according to the discretion of their PCP. **Compared with:** UC. Had no contact with the intervention nurses and did not receive home telemonitoring equipment.	statistically significant in the behavioural management group and medication management group and NS in the combined intervention group. At 18 months, only the combined intervention group showed evidence of improved BP control relative to UC, (NS). The largest sustained improvement for systolic BP was seen in the combined intervention group (*P* = 0.04). By 18 months, the mean systolic BP was lower only in the medication management and combined intervention groups compared with the UC group (NS). Each intervention demonstrated improvements in BP control or systolic BP at 12 months; none of these improvements were sustained at 18 months and did not result in lower medical care costs. Among those with poor baseline BP control, combined intervention significantly decreased systolic BP and diastolic BP at 12 and 18 months. **Health service use** None of the intervention groups increased healthcare use, **Economic outcomes** Intervention costs over 18 months were $947 for behavioural management, $1275 for medication management, and $1153 for the combined intervention arm. There was no significant difference in median 18-month total VA medical cost across groups, which ranged from $5180 per patient for the medication management arm to $6910 for the behavioural intervention (*P* = 0.28).
Reference Piette 2001[33] Linked	**Study aim:** To evaluate automated	**Outcomes Physiological**

paper(s): IDEATel (Pilot) **Country:** USA **Target Population** Type 2 diabetes Vulnerable: VA patients described as facing no financial barrier to care - e.g. transport, rural **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: GP or a diabetes centre **Duration of study**: 12 months **Number of patients:** 132 intervention 140 control **%Male:** 0.38 **Mean age**: 60.5[10] **Uptake to program:** 489 eligible and 272 randomised and completed **Facilitators:** The nurse had access to hospital intranet with access to notes, results and could email providers **Barriers:**	telephone disease management with telephone nurse follow-up as a strategy for improving diabetes treatment processes and outcomes in Department of VA clinics. **Telephone Coaching Intervention Scripted Reactive** Patient called automated service each week to upload glucose monitoring results. Nurse reviewed data and called patients to discuss their diabetes management, self-care, symptom management and medication adherence. Not clear who prepares care plan **Delivered by:** Nurses **Number of telephone calls:** 13 calls on average (1.1 per month) **Duration of calls:** Automated calls 5–8 min no information on duration of nurse calls **Duration of the program:** Not clear - ? 12 months **Linkages with usual PCP** Nurse called or emailed referring doctor about health problems and to remind them about prevention tasks. 23% of nurse calls resulted in contact with provider **Compared with:**	**measures of disease** No significant change in HbA1c. HbA1c was significantly lower in intervention group for those ≥ 8 at baseline (8.7 *v.* 9.2 *P* = 0.04) **Adherence** Regular foot inspection and blood sugar monitoring significantly improved in intervention group (*P* = 0.05) cholestrol test 87 *v.* 78 *P* = 0.05, med foot exam 92 *v.* 72 *P* = 0.0002 **Satisfaction** Very satisfied with care **Health service use** Significant increase in: podiatry services 62 *v.* 42 *P* = 0.003, diabetes clinic use 61 *v.* 25 *P* = 0.03,**Economic outcomes** Cost $17–30 per patient per year excluding nurse time
Reference Shea 2007[34] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: Large % of uninsured and culturally and linguistically diverse 64% eligible for Medicaid **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: GP **Duration of study**: 12 months **Number of patients:** 1665 **%Male: Mean age**: 71 **Uptake to program:** 1665 randomised and 1417 completed follow-up **Facilitators: Barriers:**	**Study aim:** This report summarises the findings of IDEATel together with information on patient and provider satisfaction and preliminary findings from analysis of Medicare claims data **Telephone Coaching Intervention Scripted Reactive** HTU with modem and videoconferencing system, remote glucose monitoring and secure email **Delivered by:** Project case manager supervised by physician **Number of telephone calls:** N/A **Duration of calls:** N/A **Duration of the program: Linkages with usual PCP** Regular contact between case manager and GP with phone, email or fax if treatment needed to be changed **Compared with:**	**Outcomes Physiological measures of disease** HbA1c in intervention group decreased from 7.35% to 6.97% and 0.18% difference with control (*P* = 0.006). The net adjusted reductions for systolic and diastolic BP were 3.4 mmHg (*P* = 0.001) and 1.9 mmHg (*P* = 0.001). **Satisfaction** Patients and PHC providers were very satisfied with the program **Health service use** Higher Medicare claims in intervention group
Reference Trief 2009[36] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: Older people aged 55+ **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: **Duration of study**: **Number of patients:** 1665 **%Male:** 37% (619) **Mean age**: 70.82 (6.63) **Uptake to program:** 1443, 222 lost to follow-up **Facilitators: Barriers:**	**Study aim:** to assess whether (a) diabetes self-efficacy relates to the primary medical outcome of glycaemic control, and to secondary outcomes (BP and cholesterol), and (b) whether, after an intervention, change in diabetes self-efficacy relates to change in these medical outcomes in a group of older, ethnically diverse individuals. **Telephone Coaching Intervention Scripted Reactive** a HTU, i.e. a web-enabled computer to upload blood glucose and BP readings, to videoconference with a dietitian/nurse case manager (all chronic disease experts) and to access education and data. Televisits followed a specified case management protocol using case management software, were 30–60 min long, and occurred every 4–6 weeks. Discussion included diabetes	**Outcomes Physiological measures of disease** HbA1c improvement significantly related to improvements in self-efficacy (*P* < 0.0001)

	education, nutrition and activity counselling, and collaborative goal setting. **Delivered by:** Dietician / nurse case managers **Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP** Regular information sent to GPs about their patient **Compared with:** UC	
Reference Weinstock 2011[38] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: Medically under-served population **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: **Duration of study**: 5 year follow-up **Number of patients:** 1665 **%Male: Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** Further analysis of the IDEATel project to understand differences reported by ethnic groups, 5-year results **Telephone Coaching Intervention Scripted Reactive** See above **Delivered by: Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP Compared with:** UC	**Outcomes Physiological measures of disease** Overall HbA1c decreased by 0.29 (95% CI 0.12–0.46) in Hispanics the change was 0.5 (95% CI 0.22–0.78) $P < 0.05$ **Adherence** More glucose uploads resulted in greater reduction in HbA1c
Reference Weinstock 2011[37] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: Medically under-served population **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: **Duration of study**: 5 year follow-up **Number of patients: %Male: Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** to examine the effects of the IDEATel telemedicine intervention and pedometer use on PA and impairment in older adults with diabetes. **Telephone Coaching Intervention Scripted Reactive** See above **Delivered by: Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP Compared with:** UC	**Outcomes Functional / health status** Lower rate of physical activity decline with intervention ($P = 0.0128$). UC group declined 1 point on 7-point activity scale. Intervention group lower rate of decline on activities of daily living scale $P = 0.037$
Reference West 2010[39] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: **Patients recruited from**: **Duration of study**: **Number of patients: %Male: Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** To describe the use of telemedicine for setting goals for behaviour change and examine the success in achieving these goals in rural under-served older adults with diabetes IDEAtel **Telephone Coaching Intervention Scripted Reactive Delivered by: Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP Compared with:**	**Outcomes Health behaviour** Goals set at mean 33 televisits per patient **Adherence** 68% behavioural goals achieved or met
Reference Izquierdo 2003[30] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: Some rural **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: Medical Centre **Duration of study**: 12 weeks **Number of patients:** 46 **%Male:** 0.46 **Mean age**: 57.7 (9.5) **Uptake to program:** 88% completed the three visits **Facilitators:** Telemedicine provide means for	**Study aim:** To determine whether diabetes education can be provided as effectively through telemedicine technology as through in-person encounters with DSN or educators. It looks like this is pilot for IDEATel **Telephone Coaching Intervention Scripted Reactive** Meetings with DSN via video conferencing. They provided the diabetes education based on the clinic diabetes education program. The sessions were interactive and focussed on knowledge, lifestyle and skill development **Delivered by:** Experienced nurses or educators **Number of telephone calls:** 3	**Outcomes Physiological measures of disease** Significant improvement in HbA1c with both interventions (8.6 to 7.8), no difference between the treatment groups. LDL-C significantly improved but not different between treatment groups **Quality of life** PAID survey (emotional score) and Appraisal of Diabetes Score score improved significantly with both treatment groups **Satisfaction** No difference in satisfaction between

people in rural areas to receive healthcare more easily **Barriers:** It looks like the telemedicine intervention was carried out at a centre and the equipment was not in patients' homes	**Duration of calls:** 2 h total **Duration of the program:** 12 weeks **Linkages with usual PCP Compared with:** Face-to-face meetings with DSN / educator. The sessions were interactive and focussed on knowledge, lifestyle and skill development	the two groups
Reference Izquierdo 2010[29] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabetes Vulnerable: The study population was elderly adults living in rural under-served areas spanning over 30 000 square miles, and participant follow-up was for at least 2 years **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: Medical Centre **Duration of study**: **Number of patients:** 890 **%Male:** 0.43 **Mean age**: 71.02 (7.07) **Uptake to program:** Those lost to follow-up were younger, female and longer duration of T2DM **Facilitators: Barriers:**	**Study aim:** We examine the changes in WC and BMI in older adults enrolled in a diabetes telemedicine program. The subjects were elderly Medicare beneficiaries participating in the rural (upstate New York) cohort of IDEATel, a randomised, controlled trial using telemedicine to improve diabetes care in which the primary outcome was glycaemic control **Telephone Coaching Intervention Scripted Reactive** A nurse case manager conducted home video visits to help the patient with diabetes SM techniques and problem solving strategies. Nurse case managers determined the patient's interest in receiving nutrition counselling with a dietitian within the first few video visits, and those interested were scheduled for a televisit with a dietitian. Those not interested met with the nurse case manager only, but this was rare. After an initial 1-h nutrition assessment and counselling video visit, 30 min **Delivered by: Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP Compared with:**	**Outcomes Physiological measures of disease** No effect of intervention on BMI and WC (1.2-cm intervention *v.* 1-cm control) **Health behaviour** Significant improvement in diet and exercise with intervention (*P* = 0.002)
Reference Trief 2007[50] Linked paper(s): IDEATel **Country:** USA **Target Population** Type 2 diabtetes Vulnerable:**Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: **Duration of study**: **Number of patients: %Male: Mean age: Uptake to program: Facilitators:** Those from upstate NY had biggest improvement in self-efficacy and they tended to be better educated than those from NYC, who tended to be Hispanic **Barriers:**	**Study aim:** The purpose of this study is to assess the impact of the IDEATel intervention on secondary psychosocial outcomes. **Telephone Coaching Intervention Scripted Reactive** HTU with modem and videoconferencing system, remote glucose monitoring and secure email **Delivered by: Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP Compared with:**	**Outcomes Self-efficacy** Intervention subjects improved significantly (versus control subjects) in diabetes self-efficacy (P < 0.0001). The effect size (estimated using adjusted for covariate difference scores, expressed in the original units of the scale) of the intervention on self-efficacy was 2.377 (95% CI 1.40 –3.36) **Quality of life** No difference in diabetes distress score **Functional / health status** No difference in depression
Reference Young 2005[40] Linked paper(s): PACCTS **Country:** UK **Target Population** Type 2 diabetes Vulnerable: Low SES **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: PHC **Duration of study**: 12 months **Number of patients:** 596 **%Male:** 0.58 **Mean age**: 67 **Uptake to**	**Study aim:** To determine whether PACCTS, using trained nonmedical telephonists supported by specially designed software and a DSN, can effectively improve glycaemic control in type 2 diabetes. **Telephone Coaching Intervention Scripted Reactive and Planned** Telephone calls from care centre to people with type 2 diabetes. They had access to diabetes data from local electronic health record. Calls were	**Outcomes Physiological measures of disease** 0.31 (0.11 - 0.52) change in HbA1c intervention compared with UC. Most change in those at 7–9% at baseline **Adherence** Medication increased more in the PACCTS group than the UC group (P = 0.002). **Economic outcomes** Borderline cost effective

program: 8.2% of intervention patients could not cope with the telephone calls and left the study **Facilitators: Barriers:**	initiated every 3 months if HbA1c >7% and monthly if HbA1c >9%. Patients could call in if they wished. Call centre staff trained in motivational interviewing techniques, medication adherence and lifestyle changes **Delivered by:** Trained call centre staff trained by DSN **Number of telephone calls: Duration of calls:** 20 min **Duration of the program:** 12 months **Linkages with usual PCP Compared with:** UC by their GP	
Reference Long 2005[31] Linked paper(s): PACCTS **Country:** UK **Target Population** Type 2 diabetes Vulnerable: Patients were randomised from 47 general practices in a deprived urban area in north-west England **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: PHC **Duration of study**: 12 months **Number of patients:** 591 patients recruited and randomly assigned in a 2:1 ratio to the intervention and CG. **%Male:** Satisfaction questionnaire (57% male in the intervention and 58% male in the CG) - 468 people responded giving a response rate of 79%. Acceptability questionnaire - 58% male (but only a 65% response rate - 200 users) **Mean age**: Satisfaction - median age of 67–68 years. Acceptability - median age of 69 years **Uptake to program:** variable - higher for satisfaction (79% response rate); acceptability (65%) **Facilitators: Barriers:**	**Study aim:** To examine patients' views of the acceptability of and satisfaction with telephone care centre support provided to improve blood glucose control in type 2 diabetes. **Telephone Coaching Intervention Scripted Reactive and Planned** The PACCTS Trial randomised patients into two arms: 1) UC (the control); 2) proactive call centre support in addition to UC (the intervention). PACCTS involved a stepped call approach. Patients received calls, scheduled for 20 min at a pre-arranged date and time, related to their level of blood glucose control: 1) those with poor control (HbA1c more than 9%) received one proactive call per month; 2) those with moderate control (HbA1c 7.1–9%) received one proactive call every 7 weeks; 3) those with good control HbA1c 7% or less) received one proactive call every 3 months. Each scheduled call comprised protocol-based and computer software supported sections about knowledge of diabetes, readiness to make changes, medication adherence, and measurement of glucose control. Interim follow-up calls were arranged if required. Following referral from the telecarers, calls were made by the supervisory DSN for urgent issues or for routine supplementary counselling and medication change. Patients were also required to keep SM logs of blood glucose levels and relay these back to the telecare staff during the calls. **Delivered by:** two telecarers who were supported by a DSN, who in turn was supervised by the consulting physician. **Number of telephone calls:** depends on HbA1c - at least one proactive call every 3 months (4 calls over 12 months) and potentially more than 12 calls if there is poor control. **Duration of calls:** not stated **Duration of the program:** 12 months **Linkages with usual PCP** not stated **Compared with:** UC	**Outcomes Physiological measures of disease** level of glycaemic control **Health behaviour** behaviour change effects were evaluated in a sample of 25 patients who took part in an in-depth semi structured interview. **Satisfaction** measured in both the control and intervention, at baseline and at the end of the study. Used the validated Diabetes Satisfaction and Treatment Questionnaire. This includes a measure of satisfaction with treatment and is a self-report measure with eight items Results - By the end of the trial satisfaction, levels had increased in both groups (30.6–32.3 *v.* 32.3–33.2 in the CG and intervention groups), and there was statistically significant difference between the intervention and the CG ($z = 2.266$, $P = 0.023$).
Reference Stone 2010[35] Linked paper(s): DiaTel **Country:** USA	**Study aim:** To compare the efficacy of home telemonitoring with medication	**Outcomes Physiological measures of disease** HbA1c was

Target Population Type 2 diabetes Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: VA Medical Centre with approval from GP **Duration of study**: 3 months and 6 months **Number of patients:** 150 **%Male:** N/A **Mean age**: N/A **Uptake to program:** 137 completed **Facilitators:** **Barriers:**	management by a nurse practitioner with a monthly care co-ordination telephone call on glycaemic control **Telephone Coaching Intervention Unscripted Reactive** Patients attended a 2-h education session on diabetes and were given a home telemonitoring device. Patients uploaded daily blood sugar readings and a nurse practitioner reviewed the results and provided telephone follow-up for those with very high or low readings. This follow-up included education and SM support. Nurse also called patient monthly for coaching and SMS **Delivered by:** Nurse **Number of telephone calls:** N/A **Duration of calls:** Mean 1.3 h per patient per month **Duration of the program:** 6 months **Linkages with usual PCP** VA Medical Centre staff contacted GP for approval and consent for their patient to take part **Compared with:**	0.7% lower in intervention group compared with control ($P <$ 0.001) **Adherence** At 6 months the intervention group had significantly more BP medication and dose changes but not lipid or anti-glycaemic medication. 7/64 patients did not submit data via phone
Reference Moyer-Knox 2004[32] Linked paper(s): **Country:** USA **Target Population** CHF Vulnerable: **Level of care**: 2 NHMRC Level of Evidence: **Patients recruited from**: An established heart failure program **Duration of study**: **Number of patients: %Male: Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** In previous work, we demonstrated the feasibility of remote telephonically assisted BB titration and found favourable effects on morbidity, time to target dose, and low withdrawal rates. In the current expanded evaluation, we reasoned that a structured remote telephonic titration protocol would achieve similar benefits. The aim of the study seems to be to evaluate the safety of remote tritation of BB rather than the effectiveness of telephone coaching **Telephone Coaching Intervention Unscripted Reactive** Before initiation of BB therapy, patients were seen in the HF clinic by a cardiologist and an APN. A complete history and physical exam confirmed euvolemia and eligibility. Each patient was instructed on the benefits of BB therapy, medication name and starting dose, titration schedule, common side effects, pulse taking, BP and daily weight monitoring (with an estimated counselling time of 1 h per patient). Patients demonstrated correct pulse taking while the APN was present. This study population was evaluated with the aid of home BP monitoring. If patients did not have access to an automated BP cuff, they were instructed to acquire one or have BPs monitored at a local drug store. If patients reported any difficulty with using the automated BP cuff, they were asked to bring it to the clinic for further education and return demonstration with the APN present. Following the manufacturer guidelines, eligible patients were started on carvedilol 3.125 mg twice daily (BID) and	**Outcomes**

	up titrated every 2 weeks as tolerated to a target dose of 25 mg BID.13 After patients were initiated on the drug they were asked to call the APN with a report of weight, heart rate, BP, and untoward symptoms three times per week (Monday, Wednesday, and Friday). Carvedilol was increased every 2 weeks until the target dose was reached or drug intolerance prevented further titration. On the assigned call-in day, the APN assessed the need for further intervention by evaluating the self-reported VS and any AEs. When up-titration was due, the APN phoned the patient to review the new dose, provide education, and offer support. When immediate intervention was necessary because of unacceptable VS, weight changes, or AEs, a focussed verbal assessment illuminated the situation further and allowed the APN to intervene in one or a combination of the following ways: (1) adjust diuretics, (2) alter or stagger concomitant medications, (3) provide education on side effects, (4) reinforce dietary compliance; (5) prescribe and evaluate laboratory and diagnostic testing, and (6) schedule clinic visits. Patients were managed via telephone between 8 and 12 weeks or until optimal dosage was reached. An appointment in the HF clinic was scheduled for 1 month after optimisation to evaluate the patients' clinical status. **Delivered by: Number of telephone calls: Duration of calls: Duration of the program: Linkages with usual PCP Compared with:**	
Reference Anderson 2010[24] Linked paper(s): **Country:** USA **Target Population** T2DM CAD, CHF, COPD, Asthma, Hypertension, depression (not all had these) Vulnerable: Majority was Hispanic or African American. Most were of low SES, and nearly all had Medicaid or were uninsured. **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: 2 Community Health Centres **Duration of study**: **Number of patients:** I: 146 C: 149 **%Male:** 0.42 **Mean age: Uptake to program:** Of those patients who were randomised, 115 (79%) in the control and 94 (64%) in the intervention group completed the 1-year study. **Facilitators: Barriers:**	**Study aim:** to test the effectiveness of a supplemental telephonic DMP compared with UC alone for patients with diabetes cared for in a community health centre. **Telephone Coaching Intervention Unscripted Planned** Patients received 1 year of telephonic disease management. Call content was semi-structured. Calls were unscripted, allowing the nurse to address each patient's individual needs, whether related to diabetes or other topics. **Delivered by:** Specialised nurses **Number of telephone calls:** Patients were called weekly, bi-weekly, or monthly depending on their risk stratification. Patients could be reassigned to receive more or fewer calls if their risk stratification changed at the 6-month assessment or if the patient requested a change **Duration of calls: Duration of the program:** 12 months **Linkages with usual PCP Compared with:**	**Outcomes Physiological measures of disease** No significant differences in the primary outcome (HbA1c) between the intervention and CGs at 12 months. No significant differences for secondary clinical outcome measures i.e. BMI, BP, LDL-C, **Health behaviour** No significant differences for behavioural outcome measures i.e. smoking, intake of fruits and vegetables or physical activity. **Functional / health status** Perceived health status did not vary between the two groups

Reference Eakin 2010[25] Linked paper(s): Eakin **Country:** Australia **Target Population** T2DM or hypertension 61.8% had >3 chronic conditions Vulnerable: socioeconomically disadvantaged community **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: 10 PHC **Duration of study**: 12 months **Number of patients:** 434.TC (*n* = 228) UC (*n* = 206) **%Male:** 0.39 **Mean age**: 58.2 years (11.8) **Uptake to program:** 434 *v.* 315 **Facilitators: Barriers:**	**Study aim:** To examine the maintenance of behavioural changes 6 months following a 12-month telephone-delivered physical activity and diet intervention. **Telephone Coaching Intervention Unscripted Planned** Patients from TC practices were mailed a workbook on physical activity and healthy eating and a pedometer to supplement their TC calls. The intervention was implemented over a 12-month period, with a 4-month intensive call phase (10 calls) and an 8-month maintenance–enhancement phase (8 calls). All study outcomes were obtained using CATI at baseline, 4, 12, and 18 months, by interviewers who were blind to group allocation. **Delivered by:** Counsellors who had Bachelors or Masters degrees in either public health or health promotion or the allied health sciences. **Number of telephone calls:** The median number of calls completed by the TC group was 13 (range: 0–18), with sufficient calls (at least 12 out of 18) being completed by the majority of TC participants (*n* 146, 64%) and most of TC participants with 18-month follow-up date **Duration of calls:** Mean 18.2 (s.d. 4.1) minutes **Duration of the program:** 12-month **Linkages with usual PCP Compared with:** UC. After each assessment, patients from UC practices were mailed a one-page letter with brief feedback on their assessment results. They also received a quarterly project newsletter on general health tips, along with brochures on various health topics, including physical activity and diet.	**Outcomes Health behaviour** For physical activity, the significant ($P < 0.001$) within-groups improvements from baseline observed at 12 months remained at 18 months, in both the TC and UC groups. For all dietary outcomes, significant ($P < 0.05$) between-groups maintenance effects, similar to end-of-intervention outcomes, remained. Among the UC group, no evidence of a systematic return towards baseline levels or further improvement as none of the differences between the 18-month and 12-month outcomes were statistically significant. Only vegetable intake declined significantly over the noncontact period (within the TC group); all other outcomes were unchanged or improved.
Reference Goode 2011[26] Linked paper(s): Eakin **Country:** Australia **Target Population** Type 2 diabetes or hypertension Vulnerable: socioeconomically disadvantaged community **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: General practices **Duration of study**: 12 months **Number of patients:** 434 TC (*n* = 228) UC (*n* = 206) **%Male:** 0.39 **Mean age**: 58.2 years (11.8) **Uptake to program:** **Facilitators: Barriers:** language or cultural barriers might explain why intervention dose was lower for non-whites	**Study aim:** To examine associations of intervention dose with behaviour change outcomes in a TC intervention for physical activity and dietary change **Telephone Coaching Intervention Unscripted Planned** Patients from TC practices were mailed a workbook on physical activity and healthy eating and a pedometer to supplement their TC calls. The intervention was implemented over a 12-month period: calls were made weekly for the first 3 weeks, then twice weekly until 4 months (initiation phase), and then monthly for the remaining 8 months (maintenance–enhancement phase). The intervention protocol allotted up to 10 attempts per call in an effort to reach the participants. A patient-centred motivational interviewing approach to telephone health behaviour counselling was used. All study outcomes were obtained using CATI at baseline, 4, 12,	**Outcomes Health behaviour** Categorisation of calls: Low: 0–10 total calls Medium: 11–15 total calls High:16–18 total calls Low: 0–5 initial phase calls Medium: 6–8 initial phase calls High:9–10 initial phase calls Low: 0–4 maintenance–enhancement phase calls Medium: 5–7 maintenance–enhancement phase calls High:8 maintenance–enhancement phase calls Relative to low call completion, high completion during the maintenance–enhancement phase was associated with significantly greater behavioural improvement for total fat intake, saturated fat intake, fibre intake, and moderate–vigorous physical activity. For most health

	and 18 months, by interviewers who were blind to group allocation. **Delivered by:** Counsellors who had Bachelors or Masters degrees in either public health or health promotion or the allied health sciences. **Number of telephone calls:** 18 Median number of total calls 13 (range 0–18). The median numbers during initial and maintenance–enhancement phases were 7 (0–10) and 6 (0–8). **Duration of calls:** the mean (s.d.) call duration was 18.2 (4.1) minutes. **Duration of the program:** 12-month **Linkages with usual PCP Compared with:** UC. After each assessment, patients from UC practices were mailed a one-page letter with brief feedback on their assessment results. They also received a quarterly project newsletter on general health tips, along with brochures on various health topics, including physical activity and diet.	behaviours examined, call completion in the maintenance–enhancement phase was more strongly associated with behavioural change than was call completion during the initiation phase.
Reference Lawler 2010[27] Linked paper(s): Eakin **Country:** Australia **Target Population** Type 2 diabetes or hypertension Vulnerable: Yes the trial was conducted in a socioeconomically disadvantaged community - there are a greater percentage of single-parent families, unemployment and foreign born residents. **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: PHC **Duration of study**: 12 months **Number of patients:** 434 individuals (10 practices) 228 allocated to the intervention (5 practices) and 206 allocated to UC (5 practices) **%Male:** 39.9 **Mean age**: 58.2 **Uptake to program:** 53 lost in the intervention group, and 40 in the CG therefore UC (*n* = 203) and TC (*n* = 223) **Facilitators: Barriers:**	**Study aim:** Within a 12-month, telephone-delivered diet and physical activity intervention with multiple behavioural outcomes, we examined the extent and co-variation of multiple health behaviour change. Is a change in one's health behaviour associated with the likelihood of changing others? **Telephone Coaching Intervention Unscripted Planned** directly with patients. Cultural values integrated into the intervention were an emphasis on personalised caring, trust, inclusion of the family, and **Delivered by:** counsellors were Masters-level graduates with a background in nutrition, and given additional training in PA promotion, motivational interviewing techniques and the constructs of social cognitive theory, which underpinned the intervention **Number of telephone calls:** median number of total calls completed was 13 (range 0–18) they were scheduled to receive 18 calls over the 12 months **Duration of calls:** 18.2 (s.d. 4.1) minutes **Duration of the program:** 12 months **Linkages with usual PCP** not stated **Compared with:** After each assessment, patients from UC practices were mailed a one-page letter with brief feedback on their assessment results. They were also sent off-the-shelf brochures on a variety of health topics, including physical activity and diet, and a project newsletter with general health tips.	**Outcomes Health behaviour** More than half (53.4%) of UC participants made no changes in the number of health risk behaviours at 12 month's follow-up, and less than a third (32.8%) reduced their risk behaviours by one or more, compared with those in the TC group where just over a third (38.6%) made no changes and more than half (52.5%) reduced their risk behaviours by at least one. Those in the TC group were more than twice as likely than those in the UC group to make greater reductions in multiple behaviours over the course of the intervention, even after adjustment for the number of behaviours not being met at baseline (OR, 2.42; 95% CI1.43, 4.11). Co-variation among health behaviours - Participants who made improvements in total fat, saturated fat, vegetables and physical activity were significantly more likely to make a greater number of improvements to other unrelated behaviours, having adjusted for group allocation and the number of behavioural risk factors present at baseline. Confidence intervals were wide, so the true strength of associations is difficult to discern; however, the increase in odds of making more

		changes were generally substantial (OR >2). Participants who improved their fruit intake showed a similar trend towards making other behavioural changes, but the relationship did not reach statistical significance. Reduced odds of making changes to unrelated behaviours were only seen with fibre intake, and this relationship did not reach statistical significance.
Reference Eakin 2009[52] Linked paper(s):**Country:** Australia **Target Population** Type 2 diabetes or hypertension Vulnerable: Yes the trial was conducted in a socioeconomically disadvantaged community - there are a greater percentage of single-parent families, unemployment and foreign born residents. **Level of care**: 2 NHMRC Level of Evidence: II **Patients recruited from**: PHC **Duration of study**: 12 months (it is assumed). The study outcomes were obtained at baseline, 4 and 12 months. However the data collection phase of the study was conducted over 2 years and 9 months. It is assumed they recruited practices at different times, and that intervention itself only lasted 12 months **Number of patients:** 434 individuals (10 practices) 228 allocated to the intervention (5 practices) and 206 allocated to UC (5 practices) **%Male:** 0.399 **Mean age**: 58.2 **Uptake to program:** in the intervention group 20 were lost to follow-up and 33 discontinued the intervention, in the CG 15 were lost to follow-up and 25 discontinued the intervention. **Facilitators: Barriers:**	**Study aim:** A cluster RCT of a TC intervention for physical activity and diet was conducted, targeting patients with type 2 diabetes or hypertension, recruited from 10 primary care practices in Queensland, Australia. The intervention was initiated via physician referral and took place entirely over the telephone, with patients from a disadvantaged community. The purpose of the trial was to achieve, in a challenging patient sample, change in health behaviours that are known to be important precursors to improved disease management outcomes. **Telephone Coaching Intervention Unscripted Planned** concrete solutions and problem solving in response to problems with self-care. The intervention group was contacted by telephone, on average, within 5 days after hospital discharge and thereafter at a frequency guided by the software and nurse care manager judgement. Printed educational material in the desired language was mailed to patients monthly and as needed when specific information was requested. **Delivered by:** counsellors were Masters-level graduates with a background in nutrition, and given additional training in PA promotion, motivational interviewing techniques and the constructs of social cognitive theory, which underpinned the intervention. **Number of telephone calls:** 18 **Duration of calls:** not stated **Duration of the program:** 12 months **Linkages with usual PCP** not stated **Compared with:** After each assessment, patients from UC practices were mailed a one-page letter with brief feedback on their assessment results. They were also sent off-the-shelf brochures on a variety of health topics, including physical activity and diet, and a project newsletter with general health tips.	**Outcomes Health behaviour** The primary study outcomes were minutes and sessions of moderate-to-vigorous PA per week, percent of calories from total fat and saturated fat, grams of fibre, and servings of vegetables and fruit. At 12 months, patients in both groups increased moderate-to-vigorous physical activity by a mean of 78 min per week (SE 10). Significant intervention effects (TC minus UC) were observed for: calories from total fat (decrease of 1.17%; p 0.007), energy from saturated fat (decrease of 0.97%; p 0.007), vegetable intake (increase of 0.71 servings; p 0.039), fruit intake (increase of 0.30 servings; p 0.001), and grams of fibre (increase of 2.23 g; p 0.001).
Reference Pinto 2011Linked paper(s):**Country:** USA **Target Population** CAD Vulnerable: no **Level of care**: 2 NHMRC Level	**Study aim:** assess the effects of a theory-based 6-month exercise counselling intervention on maintenance of exercise behaviour after completion of Phase II	**Outcomes Physiological measures of disease** lipid outcomes, c-reactive protein - no differences were seen in these

of Evidence: II **Patients recruited from**: hospital cardiac rehabilitation patients **Duration of study**: 12 months. After the 6-month intervention, bi-monthly phone calls were provided to prompt regular physical activity. **Number of patients:** 130 (int 64, control 66) **% Male:**0.792 **Mean age**:63.6 **Uptake to program:** 44 intervention group and 52 for the CG (20 lost in the intervention and 14 in the CG) with no reason provided **Facilitators: Barriers:**	cardiac rehabilitation. **Telephone Coaching Intervention Unscripted Planned** The intervention coordinator reviewed the patient's exercise prescription received on discharge from the cardiac rehabilitation program. The participant was given home logs to monitor exercise participation and a pedometer to wear during exercise activities that involved walking. Each participant received calls weekly over the first 2 months, bi-weekly for the next 2 months and monthly for the last 2 months. Participants were mailed an information tip-sheet on exercise and one on cardiovascular health for each call during the 6-month program. A feedback letter summarising the participants exercise progress and supporting motivation was sent to them at weeks 4, 8, 12, 16 and 20 **Delivered by:** unclear - Intervention Coordinators **Number of telephone calls:** 14 calls **Duration of calls:** not stated **Duration of the program:** 6 months **Linkages with usual PCP** not stated **Compared with:** The CG received calls from the intervention coordinator at the same intervals as the intervention group over the entire study period. During the calls the Symptom Questionnaire was administered to monitor general health problems. The group also received tip-sheets on cardiovascular health. After completing the 12-month assessment, participants received the exercise tip-sheets.	measures at 6 and 12 months **Health behaviour** Assessment of physical activity and motivational readiness for exercise. The intervention group reported significantly higher exercise participation than the CG at 12 months (difference of 80 min). Group differences in exercise at 6 months were NS. The intervention significantly increased the probability of participants' exercising at or above PA guidelines and attenuated regression in motivational readiness at 6 and 12 months. **Functional / health status** self reported physical functioning: SF-36 was significantly higher in the intervention group at 12 months, but not at 6 months.
Reference Wheeler 2010[63]Linked paper(s):**Country:** USA **Target Population** Heart failure Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: Community setting - home healthcare agency **Duration of study**: **Number of patients:** 41 **%Male:** 0.34 **Mean age**: 72 (12.7) **Uptake to program:** **Facilitators: Barriers:**	**Study aim:** The purpose of this pilot study was to assess the effectiveness of regular telephone interventions by nursing students on outcomes of HF patients in the home **Telephone Coaching Intervention Scripted Planned** Patients receiving care from home healthcare agency for 1–4 weeks and then were followed up by the student nurse phone calls **Delivered by:** Student nurses **Number of telephone calls:** 1–2 times per week **Duration of calls: Duration of the program:** 12–14 weeks **Linkages with usual PCP** **Compared with:** UC from home health agency	**Outcomes Quality of life** No difference **Health service use** Intervention group had fewer readmissions (not significant)
Reference Jerant 2003[45] Linked paper(s):**Country:** USA **Target Population** Heart failure Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: After hospital admission **Duration of study**: **Number of patients:** 37	**Study aim:** The current report details the relative impact of the three types of home nursing follow-up interventions on these patient-centred outcomes and nursing content and efficiency indicators **Telephone Coaching Intervention Scripted Planned** During all types of nursing encounters, the Visiting Nurse	**Outcomes Health behaviour** No difference in weight, smoking or Na^+ intake between groups **Quality of life** No difference between groups **Adherence** No difference in medication compliance between groups

%Male:0.54 **Mean age**: 70.2 (12.1) **Uptake to program:** **Facilitators: Barriers:**	Association CHF Care Steps protocol was used to guide patient assessment (Strategic HealthCare Programs, 1997). This protocol includes assessment of items such as vital signs, activities of daily living, coping skills, medication use, dietary factors, and degree of signs and symptoms such as dyspnea and weight gain. Patients are educated regarding each item, and patient-centred goals for the frequency and content of follow-up visits are developed **Delivered by:** Nurses **Number of telephone calls:** 9.3 telemedicine (video) or 6.1 telephone calls **Duration of calls:** 12 min **Duration of the program:** **Linkages with usual PCP** Study nurse sent details to PHC provider who made changes to medications etc. **Compared with:** UC or video conferencing	
Reference Hartford 2002Linked paper(s): **Country:** Canada **Target Population** Coronary artery disease Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: A large, tertiary-care teaching hospital **Duration of study**: 8 weeks **Number of patients:** Patient–partner dyads (*n* = 166) **%Male:** Intervention: 84% Control: 88% **Mean age**: Intervention: 62.7 (9.1) Control: 63.0 (8.2) **Uptake to program:** The dropout rate was 21% **Facilitators: Barriers:** Measuring anxiety with a female interviewer may have resulted in male patients feeling it was not socially acceptable to communicate increased anxiety, thus decreasing the study's ability to detect a patient intervention effect. Self-report measures to 'social desirability' bias and may result in an inability to distinguish true anxiety levels from masked anxiety levels	**Study aim:** To determine the effectiveness of an information and support telephone intervention for reducing anxiety in patients who have undergone coronary artery bypass graft surgery and in their partners. **Telephone Coaching Intervention Scripted Planned** For patient–partner dyads in the treatment group, a discharge intervention was conducted on the day of discharge. Patient and partner together were provided with information about medication for pain relief, distances to walk, rest stops during the drive home, the nurse's 24-h number, and when the nurse would call again. This was followed by six telephone calls. During the calls, patients and partners were spoken to separately. There were four measurement times: T1 or baseline; day 3 T2; week 4 (T3); and week 8 (T4).**Delivered by:** Nurses **Number of telephone calls:** six: on days 1, 2, and 4, and weeks 1, 2, and 7 after discharge **Duration of calls:** 20–60 min **Duration of the program:** 7 weeks **Linkages with usual PCP Compared with:** The CG received UC, which did not include systematic follow-up.	**Outcomes Health behaviour** Patients BAI score: no main effects for group or time were found. Partners' BAI score: A borderline significant main effect for group ($P = 0.0501$) and a significant main effect for time were found
Reference Holmes-Rovner 2008[65]Linked paper(s): **Country:** USA **Target Population** Coronary artery disease (Acute Coronary Syndrome) Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: five community hospitals that participated in the American College of Cardiology GAP QI program one year before the present trial. **Duration of**	**Study aim:** To test the effectiveness of a six-session outpatient telephone-based counselling intervention to improve secondary prevention (behaviours, medication) in patients with acute coronary syndrome following discharge from hospital, and impact on physical functioning and quality of life at 8 months post-discharge. **Telephone Coaching Intervention Scripted Planned** Patients were randomised within each hospital to (1) hospital quality improvement (QI-only)	**Outcomes Health behaviour** There were no statistically significant differences in medication use between the intervention and CGs for BBs, aspirin, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers and lipid lowering medication at the three time points. The intervention increased self-reported physical activity at 3 and 8 months (OR =

study: 8 months **Number of patients:** Consent = 719 Baseline interviewed: *n* = 525 Intervention (*n* = 268) Control (*n* = 257) **%Male:** Intervention (35%) Control (38%) **Mean age**: Intervention 59.0 yrs [12.0] Control 60.5 yrs [11.9] **Uptake to program:** Intervention group: Completed final 8-month interview *n* = 202 CG: Completed final 8-month interview *n* = 186 **Facilitators: Barriers:** The intervention approach itself was not a good match for these patients. It came on top of an ongoing QI program in which patients consistently received standard in-hospital counselling suggesting that for the majority of patients, instruction in hospital appears to have been important and effective, and that additional counselling outside the context of follow-up office care added only a little benefit.	or (2) quality improvement plus brief telephone coaching (QI-plus). (The Heart After-Hospital Recovery Planner intervention) Patients in the QI-plus arm received a six-session health behaviour change TC program during the first 3 months after discharge. Initial patient contact ~2 weeks post-hospital discharge. Behaviour change strategies included behavioural staging, motivational interviewing, goal setting, relapse prevention and obtaining social support. Patients were encouraged to identify at least one current behaviour they intended to improve and set weekly goal(s). Each patient and his/her family received an information booklet and goal worksheets **Delivered by:** One health educator (coach) trained in behaviour change and motivational counselling **Number of telephone calls:** Weekly for 6 weeks. Of the 175 patients entering the program, all completed more than four sessions, with a mean number of sessions of 5.9 (s.d. = 0.34). **Duration of calls:** 15–30 min each (behavioural staging, goal setting, relapse prevention and social support) **Duration of the program:** 6 weeks **Linkages with usual PCP Compared with:** Both intervention and CGs received the QI program by virtue of having been admitted to GAP hospitals. GAP is a translational program shown to improve physician adherence to guidelines, but ends at discharge.GAP patients received a written discharge contract listing recommended outpatient medications, cardiac rehabilitation recommendations and health behaviour changes (smoking cessation, diet modification and exercise), as well as numerical values for ejection fraction and cholesterol.	1.53, $P < 0.02$). Differences in the odds of smoking cessation and weight loss participation were not statistically significant. **Quality of life** No difference in quality of life by intention-to-treat. **Functional / health status** No difference in functional status by intention-to-treat.
Reference Riegel 2006[43] Linked paper(s): **Country:** USA **Target Population** CHF Depression Vulnerable: Hispanics of Mexican origin - the percentage of HF patients re-hospitalised for HF or other causes, total hospital days, and total hospital charges are significantly higher in California Hispanics than non-Hispanic whites. **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: self identified Hispanics were recruited from two community hospitals close to the US-Mexico border. Patients with a primary or	**Study aim:** We tested the effectiveness of telephone case management in decreasing hospitalisations and improving HRQL and depression in Hispanics of Mexican origin with Heart Failure. **Telephone Coaching Intervention Scripted Planned** features can be over-ridden based on clinical judgment. The nurse case managers were affiliated with the hospital, not individual providers, so they did not titrate medications or coordinate follow-up care. The emphasis of the intervention was on education, monitoring and guidance. The intervention was refined to be culturally appropriate by the bilingual/bicultural collaborators (nurse case managers, physician co-investigator, research	**Outcomes Health service use** Heart failure re-hospitalisation was the primary outcome variable. Other variables were all-cause hospitalisations, days in the hospital (HF and all-cause), multiple re-admissions (more than 1 in 3 or 6 months), acute care costs (HF and all-cause), and all cause mortality. No significant group differences were found in HF hospitalisations, HF re-admission rate, HF days in the hospital, HF cost of care, all-cause acute care use or cost, mortality, HRQL or depression. The intervention

secondary diagnosis of HF, living in the community and planning to return to the community after hospital discharge were eligible to participate. **Duration of study**: not clear, there was a 2-year enrolment period. There was a 6-month intervention period. **Number of patients:** The intervention was received by 58 of the 70 patients randomised to the intervention group.**%Male:** 0.46 **Mean age**: 72 ±11 years **Uptake to program:** **Facilitators: Barriers:**	assistant) who interacted **Delivered by:** Two bilingual/bicultural Mexican-American RNs with special training in HF **Number of telephone calls:** Patients received an average of 13.5 calls (median 13), and families received an additional 8.4 (median 7), with most calls early on after discharge, an additional 4.6 (median 3) case management contacts involved a consultation with another health professional **Duration of calls:** not stated **Duration of the program:** 6 months **Linkages with usual PCP** Nurse case managers telephoned physicians as needed and mailed reports on patient progress at regular intervals. Reports mailed to physicians noted when patients were not receiving medications advocated in clinical guidelines, to support evidence-based practice. **Compared with:** UC	reduced acute care resource use initially, but the within-group variability was so great that the difference did not reach statistical significance.
Reference Shearer 2007[66] Linked paper(s): **Country:** USA **Target Population** Heart failure Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: Hospital inpatients **Duration of study**: 12 weeks **Number of patients:** 87 **%Male:** 64% **Mean age**: 76 (8.32) **Uptake to program:** 87 started, not clear how many finished (possibly 68) **Facilitators: Barriers:**	**Study aim:** The purpose of this study was to examine the effects of a telephone-delivered empowerment intervention on clinically and theoretically relevant outcomes in patients with HF, including purposeful participation in goal attainment, SM of HF, and perception of functional health. **Telephone Coaching Intervention Unscripted Planned** SM, goal attainment and functional health status. Patient empowerment through motivational interviewing. Patient centred. **Delivered by:** Heart failure nurse **Number of telephone calls:** six **Duration of calls:** N/A **Duration of the program:** 12 weeks **Linkages with usual PCP** Study nurse contacted GP for permission to include patient **Compared with:**	**Outcomes Self-efficacy** SM of Heart Failure scale significant change with intervention *P* = 0.001 **Health behaviour** Power as Knowing Participation in Change Tool VII no difference. **Functional / health status** SF-36 no difference
Reference Carroll 2006[48] Linked paper(s): **Country:** USA **Target Population** Coronary artery disease (MI) diabetes, hypertension, CHF (but not in all patients) Vulnerable: Un-partnered older (over the age of 65 years) adults **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: Three urban medical centres **Duration of study**: 12 weeks (in fact the last data collection was at 12 months but not reported here) **Number of patients:** 132 randomised to one of the three groups: 46 to the peer advisor group, 43 to the APN group, 43 to the standard care group **%Male:** ~70% **Mean age**: Peer advisor: 75.8 ± 6.5, APN: 74.9 ±	**Study aim:** To compare the effect of two self-efficacy interventions, a peer advisor and an APN, to a group who received standard care after MI. **Telephone Coaching Intervention Unscripted Planned** Subjects were randomly assigned to: (1) a peer advisor intervention group, (2) an APN intervention group, or (3) a standard care group. Both of the intervention groups also received standard care. The peer advisor was a 'graduate' of a local cardiac rehabilitation program and aged over 60 years and had to have a history of MI. Each peer advisor was trained. Frequent contact was maintained with the peer advisor by an APN associated with the study. **Delivered by:** APN or peer advisor **Number of telephone calls:** Intervention groups received a telephone call either from the peer advisor or the APN once a week for	**Outcomes Self-efficacy** Mean self-efficacy scores for the recovery behaviours were similar amongst the three groups at baseline, and increased over the 12-week period for all groups. **Health behaviour** here were similar changes in self-efficacy for performing recovery behaviours, the actual performance of recovery behaviour, physical and mental health across both intervention groups and the standard care group. **Functional / health status** Although not statistically significant, the APN-coached group demonstrated the largest change from baseline in the physical and mental health composite summary scores of the

6.3, Standard care: 77 ± 7.1 **Uptake to program:** **Facilitators: Barriers:**	the 12 weeks after discharge from the hospital. **Duration of calls: Duration of the program:** 12 weeks **Linkages with usual PCP Compared with:** Standard care. At all three medical centres, standard care consisted of discharge instructions provided by the clinical nurse. Discharge instructions included a review of medications, diet, physical activity, symptom management and follow-up appointments. No further contact with the clinical nurse was available to the subjects in this study.	medical outcomes survey SF-36. **Satisfaction** Older un-partnered adults after MI who received an intervention from an APN or a peer advisor did express anecdotally satisfaction with this intervention.
Reference Creason 2001Linked paper(s): **Country:** USA **Target Population** CHF Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: ? **Patients recruited from**: Either by direct referral from their physician, the primary nurse in the hospital, or the cardiac case manager screening patients who have been admitted to the hospital with diagnosis of CHF **Duration of study**: **Number of patients:** 18 months after the program's initiation, 62 patients had been enrolled. Control patients (*n* = 231) **%Male: Mean age: Uptake to program: Facilitators: Barriers:**	**Study aim:** To improve patient education on caring for CHF before and after hospital discharge thus improving quality of life and minimising complications once the patient is home. **Telephone Coaching Intervention Unscripted Planned** At 48 h after patient discharge, the clinic RN contacts the patient via telephone for the first time. This RN will call the patient twice weekly for 2 weeks, then once each week for 4 weeks, (after which Prime Life, which generally cares for the elderly) will call the patients once each month for 1 year.) If the patient has any questions/problems, the cardiac case manager is immediately notified so that she can call the patient and, if indicated, the physician. **Delivered by:** RNs with cardiac experience **Number of telephone calls:** Twice weekly for 2 weeks, then once each week for 4 weeks, after which Prime Life (which generally cares for the elderly) will call the patients once each month for 1 year. **Duration of calls: Duration of the program:** 6 weeks **Linkages with usual PCP** Case managers and the physicians were united as a result of participating in this program. **Compared with:** Patients with CHF admitted to the hospital but not enrolled in the CHF telemanagement program.	**Outcomes Functional / health status** Functional outcomes improved (no statistics given). Patients learning needs were decreased significantly at the end (no statistics given) **Health service use** Re-admission rate: Intervention: 2% Control: 12%
Reference Hanssen 2007Linked paper(s): **Country:** Norway **Target Population** Coronary artery disease Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: University Hospital **Duration of study**: 6 months **Number of patients:** *n* = 288 I: (*n* = 156) C: (*n* = 132) **%Male:** I: 84.6% C: 76.5% **Mean age**: I: 59.5 (12.9) C: 60.9 (10.8) **Uptake to program:** I: 138 *v.* 137 **Facilitators:** The essential aspects of the intervention were	**Study aim:** To assess the short-term effects of a nurse-led telephone follow-up intervention to provide information and support to patients with acute myocardial infarction after their discharge from hospital. **Telephone Coaching Intervention Unscripted Planned** Intervention group received, in addition to the current clinical practice, a structured intervention encompassing telephone follow-up and an open telephone line. Telephone follow-up calls started the first week after discharge, then weekly for the first 4 weeks. Then after 6, 8, and 12 weeks. The last phone call made after 24	**Outcomes Health behaviour** A significant difference with respect to frequency of physical activity in favour of the intervention group after 6 months ($P = 0.004$). More participants in the intervention group than the CG had ceased smoking at the 6-month follow-up ($P = 0.055$). **Functional / health status** In both groups, HRQL improved significantly over time on most subscales. A statistically significant difference in favour of the intervention group was found

to provide tailored information and education on the basis of the patient's individual needs, and to respond to and support his or her adaptive coping strategies with regard to taking prescribed medication, healthy eating, ceasing smoking and increasing PA. **Barriers:**	weeks. The patients could stop the telephone follow-up calls if they preferred, but were encouraged to accept the first 5–6 calls. Open telephone line slot times open 2 days a week, 3 h each time (Mondays and Thursdays). **Delivered by:** Nurses **Number of telephone calls:** Median of 6 calls (interquartile range: 5–8 calls).**Duration of calls:** Average of 6.88 min (s.d.: 3.89) **Duration of the program:** 6 months **Linkages with usual PCP Compared with:** Routine post-discharge care. Patients were managed in accordance with the current clinical practice, which encompassed one visit to a physician at the outpatient clinic 6–8 weeks after discharge, and subsequent visits to the patient's GP.	on the 36-item Short Form Health Survey Physical Health Component Summary Scale (*P* = 0.034) after 6 months. No difference was found between the groups on the Mental Health Component Summary Scale.
Reference Esposito, 2008[21] Linked paper(s): **Country:** USA **Target Population** Diabetes, CAD, or CHF Cancer, dementia, PVD peripheral vascualr disease , asthma, depression. (38% had 5 or more conditions) Vulnerable: **Level of care**: 3 NHMRC Level of Evidence: II **Patients recruited from**: **Duration of study**: First 18 months of The LifeMasters Supported SelfCare demonstration program evaluated **Number of patients:** 33 000 **%Male:** ~1/3rd male **Mean age**: About 30% of demonstration enrolees were aged 65 or younger, and ~9% were age 85 or over. **Uptake to program: Facilitators: Barriers:**	**Study aim:** To assess the impact of telephonic patient education and monitoring services over the first 18 months of operations on hospital or ER use, Medicare expenditures, quality of care, or prescription drug use for the 33 000 enrolees. **Telephone Coaching Intervention Unscripted Reactive** LifeMasters classifies active patients who are willing to participate fully in the intervention as 'mediated' and who participate less than fully as 'instructional'. Mediated patients agreed to accept telephone calls from LifeMasters nurse DM staff (once a week and no less than every other week) and measuring and reporting to LifeMasters their vital signs and symptoms weekly. The intervention is primarily telephonic, but also has an in-person component. Specific DM services include educating patients about their medical conditions, helping patients adhere to physicians' treatment plans, and improving patients' self-care skills. LifeMasters assigns each mediated patient their own nurse care manager who either only called them or met them as well. Intervention components include patient assessment, care planning, routine nurse monitoring, patient self-monitoring, education, care coordination, and service arrangement. **Delivered by:** Registered/community nurses **Number of telephone calls:** Through June 2006, one-third of enrolees were mediated for at least 1 month during their first 6 months of enrolment **Duration of calls: Duration of the program:** The mean number of months enrolled was 9.5 and one-quarter of enrolees were enrolled for more than 12 months. **Linkages with usual PCP**	**Outcomes Physiological measures of disease** In the first year after enrolment, there were no significant treatment-control differences in quality-of-care measures (process of care and clinical outcomes) despite the fact that there was substantial room for improvement. **Adherence** Prescription drug utilisation: over the first 6 months only two significant treatment-control differences, which suggests that these differences may be due to chance rather than to program impacts. The proportion of treatment group members with one or more pharmacy claims is slightly, but significantly, larger than the proportion in the CG. Despite the fact that all enrolees had CAD, CHF or diabetes, use of clinically recommended cardiovascular medications was not significantly different. However, more (*P* = 0.018) treatment group members did have claims for non-statin antihyperlipidaemic agents and other miscellaneous cardiovascular agents compared with the CG. **Satisfaction** Significantly more treatment than CG members reported that a nurse, disease manager, or social worker helped them to arrange care (34.6 *v.* 21.2%, *P* < 0.001). **Health service use** Over the first 18 months, treatment-control differences in the proportion of patients with a hospital

	Compared with: Instructional patients agreed only to receive a quarterly health magazine or an occasional telephone call from program staff.	admission and the average annualised number of admissions per year were small (NS). The proportion of patients with an ER visit was ~1 percentage point smaller for the treatment group than for the CG (26.6 *v.* 27.7%; *P* = 0.009). Though this difference is statistically significant, it suggests that the program's effect was very small. Treatment-control differences in either the proportion of patients with an ER visit or the average annualised number of ER visits per year were small and not statistically significant. Thus, impacts on ER use are at best very small. **Economic outcomes** Medicare expenditures over the first 18 months for the treatment group were $25 lower than CG costs (NS). However, for beneficiaries with CHF who resided in high-cost South Florida counties, the program reduced Medicare expenditures by 9.6%

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