Supplementary Tables

Table S1. Type of intervention in studies included in the meta-analysis

Author (Year)	Comparison	Intervention	Data checking and treatments
Tele-transmission vs. Usual Care			
Lyngå (2012)[43]	Tele-transmission (BW)	A wireless signal from electronic scale was transmitted via the telephone network to an internet database center	If patients were perceiving any of the symptoms relating to HF in combination with weight gain, they were asked to take an additional dose of their diuretic for two consecutive days. If no improvement with increased diuretic doses was seen, patients were offered an extra visit to the HF clinic.
	Without monitoring the BW	Inform the care center by phone in case of a weight gain of >2 kg in 3 days.	
Pekmezaris (2012)[46]	Tele-transmission (BP, stethoscope)	Follow the AHA/HFSA guideline and receive live nursing visits plus remote patient monitoring (through two-way video monitoring).	Information is not available.
	Usual care	Follow the AHA/HFSA guideline and visited by home care nurse.	
Wade (2011)[52]	Tele-transmission (BW, BP)	A wired blood pressure monitor and a wireless weight scale transmitted data to CM, together with Health Guide System (HGS) telemonitoring sessions.	The home monitoring data flow between the participants and case managers catalyzed frequent nurse case management interactions between the participant, his or her case manager, and the

	Usual care	Nurse case management. Common issues covered included health education, safety and emergency measures, medication regimen, and care coordination needs.	participant's physician. Case managers were instructed to check the Web-based clinical user interface for alerts on each member's condition and to respond with care coordination assistance as needed.
Koehler (2011)[38]	Tele-transmission (BW, BP)	In remote telemedical management, ECG, blood pressure, and body weight measurements are connected via Bluetooth at the patient's home, and transmitted to telemedical center, which will transfer the data to physicians.	The patient was contacted by the telemedical center physician in accordance with the standard operating procedures in place or when requested by the patient to verify measurements, to give consultation, or to institute treatment. The telemedical center contacted the patient's local physician at least every 3 months. The general responsibility for the patient's care remained with the local physician.
	Usual care	Treat patients in accordance with the current guidelines for the management of HF.	
Weintraub (2010)[54]	Tele-transmission (BW, BP, HR)	SPAN-CHF program plus a proprietary automated home monitoring system (transmission of body weight, blood pressure, and heart rate via a standard telephone line to a central server).	Patients were expected to interact with the Health Buddy automatic home monitoring (AHM) daily. Nurse managers accessed and reviewed AHM data on a daily basis for all actively enrolled patients from Monday to Friday. If the patient's data showed abnormality, the HF nurse would call the patient to discuss the deviation and to initiate an intervention if necessary.
	Usual care	Specialized Primary and Networked Care in Heart Failure (SPAN-CHF) program.	

Mortara (2009)[45]	Tele-transmission (vital signs, stethoscope)	The home telemonitoring system transmitted weekly records of the following data to the coordinating centre via an automated interactive voice response system: (i) weight; (ii) heart rate; (iii) blood pressure, ECG and other clinical data.	Any suspect data elicited a request for checking by the monitoring nurse or attending physician. No specific rules were given in the protocol for medical interventions when one of the specific parameters exceeded the pre-specified personalized normal range and the range of variation. Investigators (nurses or physicians) could choose the best action to re-establish the haemodynamic balance following modern guidelines.
	Usual care	Discharged as normal from hospital.	
Scherr (2009)[48]	Tele-transmission (BW, BP, HR)	Pharmacological treatment plus Mobile Telemonitoring in heart failure patients (MOBITEL) for telemedical surveillance of weight, heart rate and blood pressure. study physicians could contact patients using the mobile phone.	The database was checked at regular intervals for arrival of new alerts, notifications, or reminders generated by the data processing service. Subsequently, a personalized message was composed and sent to the responsible physician by text messaging, email, or both.
	Usual care	Pharmacological treatment	
Giordano (2009)[33]	Tele-transmission (ECG)	Home-based telemanagement programme referring to medical/nursing interventions made over the telephone. Telemanagement included telemonitoring and teleassistance.	In both telemonitoring and teleassistance at the end of the call phone, the nurse took one of these actions: (1) in presence of stable conditions, fixed a new scheduled appointment, (2) determine drug modification pre-planned with the cardiologist or with general practitioner (GP), (3) asked for further investigations or scheduled cardiological consultation, (4) contacted the GP and or the
	Usual care	A structured follow-up with the cardiologist at 12 months in the hospital outpatient department.	

			cardiologist of the patients in presence of ECG trace modifications or of signs or symptoms of hemodynamic instability.
Dar (2009)[25]	Tele-transmission (BW, BP, HR, S/S)	Usual care plus Home telemonitoring. HT uses the equipment to record their blood pressure, heart rate, and oxygen saturation. Patients self-report the symptoms indicative of heart failure decompensation.	The transmitted data were reviewed on a daily basis by a heart failure nurse. Any variation of these vital signs from predefined parameters triggered an alert suggesting clinical deterioration and resulted in a telephone call for further patient assessment. This then led to one of four possible responses: life-style advice, advice regarding medication, recommendation to contact primary care, or early review in secondary care.
	Usual care	The clinic review provided life-style advice and optimization of heart failure medication.	
Kashem (2008)[36]	Tele-transmission (BW, BP, HR)	Using an Internet-based telemedicine system, Blood pressure, pulse, steps/day, and weight together with symptoms were entered. HF nurse was responsible for communicating with the patients through the Web site.	The most recent laboratory data and medication were entered by the practice staff, and the patient was instructed to review medications and laboratory values and transmit any questions to the practice. An advanced HF nurse was dedicated to reviewing HF patient information. She was responsible for communicating with the patients through the Web site. The information sent to the patient was intended to adjust the patient's general health status to maintain a stable HF state.
	Usual care	Guideline-based standard care.	

Antonicelli (2008)[15]	Tele-transmission (ECG, BP, HR, BW)	In home telemonitoring-based care program, patients were contacted by telephone at least once a week by the CHF team, to collect information on symptoms and adherence to prescribed treatment as well as BP, HR, BW.	Based on the evaluation of all these parameters, the therapeutic regimen was regularly re-assessed and altered when necessary.Clinic visits were performed whenever needed. Decision for hospital re-admission during follow-up in both groups was taken after consulting a CHF team member and according to predefined criteria based on a set of clinical signs and symptoms related to worsening of cardiac insufficiency or to its complications.
	Usual care	Standard care based on routinely scheduled clinic visits, performed by a team specialized in CHF patient management	
Balk (2008)[16]	Tele-transmission (BW, BP)	Home telemonitoring, device for daily measurement of BP, BW was connected to the patients' telephone line and thereby automatically to a central web server.	For the patients equipped with the measurement devices, ranges were set for blood pressure as well as weight. Medical staff was available during office hours for telephone contacts and analysis of the daily measurements of the telemonitored patients. Changes in treatment were only made in consultation with the hospitalbased cardiologist or HF-nurse.
	Usual care	Guideline-based standard care in addition to their scheduled visits to the cardiologist to enhanced patient education and compliance of medication.	
Soran (2008)[50]	Tele-transmission (BW)	A computer-based home HF monitoring system to monitor and to detect early signs and symptoms of heart failure using a system includes an electronic scale and an individualized symptom response system (DayLink monitor) linked via a standard phone line to a computerized database.	The HF monitoring system nurses reviewed the transmitted data daily and contacted the patient to verify any changes observed in heart failure symptoms or weight. Changes in weight beyond a prespecified amount or changes in symptoms were reported to the attending primary care physician. Physicians were then able to adjust

	Standard care	Provided by primary physician to enhance patient education and compliance of medication.	medications, schedule an office visit, or initiate other therapeutic changes, or hospitalization.
Woodend (2008)[55]	Tele-transmission (BW, BP, ECG)	Tele-home monitoring program consisted of video conference with nurse, and data for weigh scales, blood pressure and electrocardiogram machines were transmitted by telephone lines.	Video conferences were held at least weekly with each patient and included an assessment of the patient's progress and self-care education by the telehome-care nurse. All patients were given a 24-7 telephone number to access an advanced practice nurse with questions related to their care.
	Usual care	The usual care provided to patients with angina or HF discharged from the hospital.	
Dansky (2008)[24]	Tele-transmission (BW, BP, HR, digital stethoscope)	Tele-homecare systems operate over telephone lines via a standard modem, which allows a patient to take his or her own measurements (e.g., blood pressure, pulse, weight) through peripheral devices and transmit the readings to center.	The nurse used the audio and video to interact with the patient to discuss symptoms, diet, medications, and physical activity. If the nurse who checks the transmitted data observes abnormal values, he or she may call the patient or the home care nurse for further information or intervention.
	Usual care	Receive a packet of information on HF, providing basic facts on the disease, guidelines on self-management, and specific instructions.	
Cleland (2005)[23]	Tele-transmission (BW, BP, ECG)	UC plus home telemonitoring system which consisted of low-profile, electronic, weighing scales, an automated sphygmomanometer, and a single-lead electrocardiogram	Values greater than or less than preset limits were notified automatically to the study nurses, who then reviewed the information and took action either directly for any short-term advice or

		connected to the patient's conventional telephone line and then to web server.	through the primary care physician if long-term changes in therapy were required. Guidelines for the management of a number of common scenarios, depending on the stability of the patients' symptoms and current treatment, were developed by the steering group.
	Usual care	The patient management plan was sent to the patient's primary care physician.	
Capomolla (2004)[21]	Tele-transmission (BW, BP, HR, S/S)	Telemonitoring service sent the information concerning their vital signs and symptoms (weight, systolic blood pressure, heart rate, dyspnoea, asthenia, oedema, therapy changes, blood urea nitrogen, creatinine, sodium, potassium, bilirubine) to the medical staff using the touch-pad of their home or mobile phone.	The examinations of the data informed the following care process according to clinical scenery: the patient could be contacted to perform counselling or triage, for integration or changes in the therapy, to require further examinations, to manage unexpected accesses. The interventions by nurses and/or by physicians were graduated according to scenery developed from the analysis of the received data.
	Usual care	The patient returned to the community and was followed-up by a primary care physician with the support of a cardiologist.	
Goldberg (2003)[34]	Tele-transmission (BW)	AlereNe monitoring system linked via a standard phone line to a computerized database monitored by trained cardiac nurses. Patients should self-report BW and heart failure related symptoms.	The AlereNet nurses reviewed the patient's weights and responses on a daily basis and contacted the patient as necessary to verify any changes observed in symptoms or weight, per an individualized intervention protocol. Increases in

	Usual care	Participation in a dedicated heart failure program with additional nursing resources is encouraged.	weight beyond a prespecified amount and/or changes in the patient's symptoms were promptly reported to the physician by these nurses.
Benatar (2003)[17]	Tele-transmission (BW, BP, HR, SatO2)	Nurse telemanagement used home monitor to assess BP, HR, BW and arterial oxygen saturation. The data were transmitted via telephone line to central on-line server.	Information is not available.
	Usual care	Home nurse visit regarding symptoms, medication.	
de Lusignan (2001)[26]	Tele-transmission (BW, BP, HR)	This group had pulse and blood pressure devices, video consultation equipment and weighing scales installed into their homes. The data was transferred by radio to a box under their telephone and from there to a telemonitoring server.	The study nurses reviewed the data collected, every working day, to see whether there were changes suggestive of deterioration in health. The data collected could be viewed by cardiologist at the Hospital, or by a consultant clinical physiologist.
	Usual care	This group received standard general practice treatment. In addition they had their pulse, BP and weight measured quarterly.	
Jerant (2001)[35]	Tele-transmission (digital stethoscope)	The video-based telecare group received scheduled home telecare visits with 2-way video-conference over standard analog telephone lines and allowed real-time video conferences to occur with the study nurse at a central monitoring computer at the medical center.	Following each encounter, the nurse reviewed her assessment with the principal investigator, and a summary letter containing any recommendations for improving subjects'CHF care was sent to the appropriate primary care provider. If the patient was unstable, recommendations were initially conveyed to the primary care provider by

	Usual care	Patients received only the care directed by their primary care provider in the period between in-person visits.	telephone. An algorithms drawn from national consensus recommendations was developed, including the emerging role of potassium-sparing diuretics in CHF therapy.

II. Telephone-supported care vs. Usual Care

Krum (2013)[39]	Telephone	Telephone support intervention This telemedicine system was required to be dialed into by the patient on an at least a monthly basis at which time questions were asked with regard to heart failure clinical status, medical management of their condition, and social questions relevant to their heart failure status.	Alerts were set up within the TeleWatch system, alerting the nurse via the Patient Watch Screen to follow up patients who reported prespecified signs or symptoms warranting intervention. If the patient was unable to access their general practitioner, the heart failure nurses could implement a study-specific diuretic algorithm if needed. The patients were advised to see their general practitioner or to attend the emergency department as soon as possible.
	Usual care	Standard general practice management of heart failure. Study personnel provided general practitioners with the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Heart Failure Management Guidelines (2001).	

Boyne (2012)[20]	Telephone	The patients in the intervention arm received a device, with a liquid crystal display and four keys, connected to a landline phone. Heart rate and blood pressure for both groups were collected during regular face to face contacts instead of automatic transfer.	Positive answers for symptoms triggered immediate responses by the heart failure nurse. The process was led by a heart failure nurse and a nurse assistant. Nurse-led usual care was given according to the latest European Society of Cardiology (ESC) guidelines, including oral and written educational information, and psychosocial support as needed.
	Usual care	Nurse-led usual care was given according to the latest European Society of Cardiology guidelines.	
Domingues (2011)[29]	Telephone	Telephone calls started seven days after the discharge from the hospital, aiming at clarifying and reinforcing instructions received during hospitalization and monitoring signs and symptoms of decompensation.	The nurse did not interfere with or change the patients' pharmacological treatment, but recommended seeing the doctor or going to the emergency care unit when there were signs of HF decompensation.
	Usual care	Patients received the usual care after discharge that consisted of the patient being followed at the return appointment to the outpatient clinic without any phone calls within the three-month period.	

Ferrante (2010)[31]	Telephone	Patients received an explanatory booklet and were followed up with a telephone intervention by specialized nurses to improve diet and treatment compliance, to promote exercise, to regularly monitor symptoms, weight, and edema, and to early visits if signs of clinical deterioration were detected.	Nurses could adjust diuretic dose and suggest unscheduled visits to the attending cardiologist. Nurses were not allowed to up-titrate medication. They were only allowed to adjust short-term changes in diuretics, under supervision by the attending cardiologist.
	Usual care	NO phone call was made.	
Chaudhry (2010)[22]	Telephone	The telemonitoring group was instructed to make daily, toll-free calls to the system. During each call, patients heard a series of questions about general health and heart-failure symptoms, and they entered responses using the telephone keypad.	Information from the telemonitoring system was downloaded daily to a secure Internet site and was reviewed every weekday (except on holidays) by site coordinators. All questions had predetermined responses that triggered "variances" to flag clinicians' attention. The protocol required the sites to contact any patient whose response generated variances. patients were told to contact their clinicians directly with any urgent concerns.
	Usual care	Patients received educational materials developed by the Heart Failure Society of America, and if needed, a scale.	

Mortara (2009)[45]	Telephone	The first group (strategy 1) received monthly supportive telephone contacts from a study nurse to check on their clinical status. The second group (strategy 2) received the same telephone support, but also transmitted their vital signs and other data (discussed subsequently), including details of changes in weight, blood pressure, and symptoms, weekly by telephone.	Any suspect data elicited a request for checking by the monitoring nurse or attending physician. No specific rules were given in the protocol for medical interventions when one of the specific parameters exceeded the pre-specified personalized normal range and the range of variation. Investigators (nurses or physicians) could choose the best action to re-establish the haemodynamic balance following modern guidelines.
	Usual care	Usual outpatient care.	
Wakefield (2008)[53]	Telephone	Patients were given a symptom review checklist to help them self-report and self-monitoring, and were contacted by telephone at home.	When patients reported symptoms, such as weight gain, the nurses reviewed patients' reported data, reinforced the plan of care, and made referrals (e.g. to a dietician) or contacted the patient's physician for care plan adjustments.
	Videophone	Patients were given a symptom review checklist to help them self-report and self-monitoring, and were contacted by videophone at home.	
	Usual care	Contacted their primary care nurse case manager by telephone if needed.	
Ramachandran (2007)[47]	Telephone	A telephone helpline was set up for patients. Research trainees made weekly telephone calls to these patients and asked them about their functional status.	A telephone helpline was set up for the participants. This was managed by social workers round the clock. Patients were free to call this helpline at any time to either tackle sudden

	Usual care	Patients received the usual care and drug treatment protocols in the heart failure clinic.	worsening of symptoms or to clear any doubts or queries they may have. These calls were routed to the research trainees who advised appropriate management in consultation with the heart failure specialists.
Sisk (2006)[49]	Telephone	Nurses counseled patients on diet, medication adherence, and self-management of symptoms through an initial visit and regularly scheduled follow-up telephone calls.	The nurse also served as a bridge between the patient and the clinicianNurses contacted patients' clinicians to discuss specific medications and arranged any prescription changes and examinations ordered. Nurse also recommended changes in medications, doses and subsequent examinations indicated by the protocol.
	Usual care	Patients received federal consumer guidelines for managing systolic dysfunction.	
DeWalt (2006)[28]	Telephone	Patients participated in an educational program, and The program coordinator then made scheduled follow-up phone calls designed to reinforce the educational session and provide motivation for the patients.	The program coordinator had the patient describe their self-management practices and offered feedback to improve them. Patients experiencing worsening symptoms were scheduled acute visits with their physician. The study did not provide specialized nursing assessment, care or medication advice beyond diuretic dosing. If the patient's doctor determined that the good weight had changed, the program coordinator would revise the care plan with the patient.
	Usual care	Patients received a general heart failure education pamphlet and continued with usual care from their primary physician.	

Cleland (2005)[23]	Telephone	UC plus nurse telephone support. Patients were contacted by telephone each month by a heart failure specialist nurse to assess their symptoms and current medication.	Values greater than or less than preset limits/ranges were notified automatically to the study nurses, who then reviewed the information and took action either directly for any short-term advice or through the primary care physician if long-term changes in therapy were required. Guidelines for the management of a number of common scenarios, depending on the stability of the patients' symptoms and current treatment, were developed by the steering group.
	Usual care	The patient management plan was sent to the patient's primary care physician, who was asked to implement it.	
Dunagan (2005)[30]	Telephone	The intervention included regularly scheduled telephonic monitoring by specially trained nurses in HF. Calls were used to promote self-management skills, appropriate diet, and adherence to guideline-based therapy prescribed by primary physicians. Patients in both groups received an educational packet describing the causes of HF HF, the basic principles of treatment, their role in routine care and monitoring of their condition, and appropriate strategies for managing a HF exacerbation.	Patients were encouraged to contact program nurses any time they experienced an increase in symptoms or had questions about their disease or treatment. During telephone contacts, nurses screened patients for HF exacerbations and administered a standardized screening instrument developed to detect such changes. If there was evidence of an exacerbation, program nurses recommended that the patient take supplemental diuretics or contacted the patient's physician for instructions.
	Usual care		

Tsuyuki (2004)[51]	Telephone	Community follow-up of the patient support program patients consisted of telephone contact by the local research coordinator to reinforce education and adherence relating to HF and other self-care activities,	Information on ACE inhibitor use and clinical events (physician visits, emergency room (ER) visits, and hospital readmissions) were collected during the telephone follow-up. The local research coordinator could also recommend the patient consult his or her physician for ACE inhibitor dosage titration or if a medical problem arose that required further attention.
	Usual care	Patients randomized to usual care received a general heart disease pamphlet before discharge, but no formal counseling beyond that of what was routine at the hospital.	
DeBusk (2004)[27]	Telephone	Patients in the intervention group received a physician-directed, nurse-managed, telephone-mediated home-based program for heart failure, including initial educational session, including a videotape; baseline telephone counseling session; nurse-initiated follow-up telephone contacts; pharmacologic management; and nurse-initiated communication with physicians.	Information is not available.
	Usual care	All patients continued to receive usual care, including instruction on diet, drug adherence, physical activity, and response to changing symptoms.	

Laramee (2003)[42]	Telephone	A comprehensive patient and family educational program was followed by enhanced telephone follow-up to survey the HF symptoms, medications, self-care activities and others.	Patients were instructed to contact their physician anytime a change in symptoms occurred. If symptoms or signs of HF were detected during a routine telephone call, appropriate triage ocured and additional telephone calls were prompted.
	Usual care	Usual HF care.	
Kasper (2002)[37]	Telephone	The telephone nurse coordinator made follow-up calls to patients. The telephone nurse coordinator followed a set script and pursued problems as clinically indicated, but did not adjust medications over the telephone.	The telephone nurse coordinator followed a set script and pursued problems as clinically indicated, but did not adjust medications over the telephone. The CHF nurses were assigned to assist the intervention group and helped to implement the therapeutic plan designed by the CHF cardiologists. The CHF cardiologists designed and documented a treatment plan for all study patients.
	Usual care	The baseline therapeutic plan designed by the CHF cardiologist was documented in the patient's chart, without further intervention.	
Krumholz (2002)[40]	Telephone	A home-visited educational phase was followed by a telemonitoring phase. In this phase, the nurse contacted the patient by phone to reinforce care domains but did not modify current regimens or provide recommendations about treatment.	The nurse could recommend that the patient consult his or her physician when the patient's status deteriorated abruptly or the patient experienced a significant problem with medical therapy requiring prompt attention.
	Usual care	Patients received all usual care treatments and services ordered by their physicians.	

McDonald (2002)[44]	Telephone (multidisciplinary care)	Telephone contact was made by the trained HF nurse specialist with the patient at 3 days after discharge and weekly thereafter until 12 weeks. The nurse providing continuity of care. During the phone call clinical status was ascertained and any problems were discussed. Key education issues were also discussed as deemed necessary by the nurse.	The nurse making the phone call was the same nurse who attended the patient during the in-hospital intervention, thus providing continuity of care. Patients were asked to contact the HF clinic should they notice any clinical deterioration. This resulted in full clinical review. The patient was also asked to attend the HF clinic for assessment of urea and electrolytes. Failure of this approach to bring body weight back to baseline resulted in full clinical review with options to use intravenous frusemide at the clinic to regain outpatient clinical stability.
	Usual care	A routine medical therapy. Consultation was provided as requested by the attending cardiologist. They were not seen by the specialist nurses after hospital discharge.	
Blue (2001)[18]	Telephone	Nurse intervention consisted of a number of planned home visits of decreasing frequency, supplemented by telephone contact to educate the patient about heart failure and its treatment, monitor electrolyte concentrations, teach self monitoring and management.	The nurses were given training in these roles before the start of the study. They used written protocols on the use of angiotensin converting enzyme inhibitors, diuretics, and digoxin in chronic heart failure and liaised with members of the department of cardiology as required.
	Usual care	Patients in the usual care group were managed as usual by the admitting physician and, subsequently, general practitioner. They were not seen by the specialist nurses after hospital discharge.	

Jerant (2001)[35]	Telephone	Patients assigned to telephone care received scheduled phone calls from the study nurse in the intervening period. 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. Education is provided regarding each item.	Following each encounter, the nurse reviewed her assessment with the principal investigator, and a summary letter containing any recommendations for improving subjects'CHF care was sent to the appropriate primary care provider. If the patient was unstable, recommendations were initially conveyed to the primary care provider by telephone. An algorithms drawn from national consensus recommendations was developed, including the emerging role of potassium-sparing diuretics in CHF therapy.
	Usual care	In this group, the care directed by their primary care providers in the period between in-person visits. Patients did not have access to the study nurse beyond the initial and terminal in-person visits.	
Gattis (1999)[32]	Telephone	Patients received evaluation fro pharmacists, education followed by telemonitoring.	For patients in the intervention group, the clinical pharmacist discussed the patients case and verabally provided therapeutic recommendations regarding optimization of therapy with attending physician based on the information collected from interview, medical record and current medication.
	Usual care	No recommendation regarding drug therapy and no patient education was provided.	

Abbreviations: BP, blood pressure; BW, body weight; CHF, chronic heart failure; ECG, electrocardiogram; GP, general practitioner..

Table S2. Outcome measures of studies included in the meta-analysis

Author (Year)	Comparison	N	All-Cause			Heart Failure-Related		
			Admission, n (%)[a]	Hospital stay (days) [†]	Mortality, n (%)[a]	Admission, n (%)[a]	Hospital stay (days)[†]	Mortality, n (%)[a]
I. Tele-transmission vs. Usual Care								
Lyngå (2012)[43]	Tele-transmission (BW)	166	79 (47.6)	n/a,	5 (3.0)	70 (42.2)	n/a,	n/a,
	Usual care	153	84 (54.9)	n/a,	8 (5.2)	70 (45.8)	n/a,	n/a,
Pekmezaris (2012)[46]	Tele-transmission (BP, stethoscope)	83	42 (51)	4.9 (8.2)	n/a,	n/a	n/a,	n/a,
	Usual care	85	41 (48)	4.8 (10.2)	n/a,	n/a,	n/a,	n/a,
Wade (2011)[52]	Tele-transmission (BW, BP)	164	57 (34.8)	n/a,	6 (3.7)	n/a,	n/a,	n/a,
	Usual care	152	49 (32.2)	n/a,	6 (3.9)	n/a,	n/a,	n/a,
Koehler (2011)[38]	Tele-transmission (BW, BP)	354	192 (54.2)	16.7 (32.3)	54 (15.3)	141 (39.8)	5.3 (18.1)	40 (11.3)
	Usual care	356	179 (50.3)	13.7 (22.7)	55 (15.4)	132 (37.1)	4.9 (13.2)	46 (12.9)
Weintraub (2010)[54]	Tele-transmission (BW, BP, HR)	95	29 (30.5)	245 (8.45)	1 (1.1)	10 (10.5)	95 (9.5)	n/a,
	Usual care	93	31 (33.3)	260 (8.39)	4 (4.3)	19 (20.4)	150 (7.89)	n/a,
Mortara (2009)[45]	Tele-transmission (vital signs, stethoscope)	101	35 (35)	n/a,	n/a	18 (18)	n/a,	n/a,

	Tele-transmission (vital signs)	94	34 (36)	n/a,	n/a	17 (18)	n/a,	n/a
Scherr (2009)[48]	Tele-transmission (BW, BP, HR)	66	n/a,	n/a,	n/a,	11 (16.7)	n/a,	0
	Usual care	54	n/a,	n/a,	n/a,	17 (31.5)	n/a,	1 (1.9)
Giordano (2009)[33]	Tele-transmission (ECG)	230	67 (29.1)	n/a,	21 (9)	n/a,	n/a,	18 (8)
	Usual care	230	96 (41.7)	n/a,	32 (14)	n/a,	n/a,	29 (13)
Dar (2009)[25]	Tele-transmission (BW, BP, HR, S/S)	91	33 (36)	17 (6, 25)*	n/a,	17 (19)	17 (8, 25)*	n/a,
	Usual care	91	23 (25)	13 (8, 34)*	n/a,	10 (11)	9 (7, 33)*	n/a,
Kashem (2008)[36]	Tele-transmission (BW, BP, HR)	24	n/a,	3.5	1 (4.2)	2 (8.3)	0.67	n/a,
	Usual care	24	n/a,	9.42	1 (4.2)	10 (41.7)	4.5	n/a,
Antonicelli (2008)[15]	Tele-transmission (ECG)	28	9 (32.1)	n/a,	3 (10.7)	n/a,	n/a,	n/a,
	Usual care	29	26 (89.7)	n/a,	5 (17.2)	n/a,	n/a,	n/a,
Balk (2008)[16]	Tele-transmission (BW, BP)	101	n/a,	n/a,	9 (8.9)	n/a,	n/a,	n/a,
	Usual care	113	n/a,	n/a,	8 (7.1)	n/a,	n/a,	n/a,
Soran (2008)[b 50]	Tele-transmission (BW)	160	75 (46.8)	n/a,	11/155 (7%)	29/155 (18.8%)	10.0 (7.3) n=29	6/155 (3.9%)
	Usual care	155	66 (42.5)	n/a,	17/152 (11.2%)	36/152 (23.7%)	9.3 (12.2) n=36	11/152 (7.3%)

Woodend (2008)[55]	Tele-transmission (BW, BP, ECG)	62	60 (96)	7.13	n/a,	n/a,	n/a,	n/a,
	Usual care	59	54 (92)	6.71	n/a,	n/a,	n/a,	n/a,
Dansky (2008)[24]	Tele-transmission (BW, BP, HR, digital stethoscope)	45	16 (35.6)	n/a,	n/a,	n/a,	n/a,	n/a,
	Usual care	112	45 (40.5)	n/a,	n/a,	n/a,	n/a,	n/a,
Cleland (2005)[23]	Tele-transmission (BW, BP, ECG)	168	80 (47)	9 (4, 15)*	28 (17)	40 (25%)	11 (6, 19)*	n/a,
	Usual care	85	46 (54)	7 (4, 12)*	20 (24)	24 (28%)	11 (6, 20)*	n/a,
Capomolla (2004)[21]	Tele-transmission (BW, BP, HR, S/S)	67	n/a,	n/a,	5 (7.5)	n/a,	n/a,	2 (3.0)
	Usual care	66	n/a,	n/a,	7 (10.6)	n/a,	n/a,	6 (9.1)
Goldberg (2003)[34]	Tele-transmission (BW)	138	n/a,	n/a,	11 (8.0)	n/a,	n/a,	4 (2.9)
	Usual care	142	n/a,	n/a,	26 (18.4)	n/a,	n/a,	8 (5.6)
Benatar (2003)[17]	Tele-transmission (BW, BP, HR, SatO2)	108	n/a,	n/a,	n/a,	75 (69.4)	n/a,	n/a,
	Usual care	108	n/a,	n/a,	n/a,	103 (95.4)	n/a,	n/a,
de Lusignan (2001)[26]	Tele-transmission (BW, BP, HR)	10	n/a,	n/a,	2 (20)	n/a,	n/a,	0
	Usual care	10	n/a,	n/a,	3 (30)	n/a,	n/a,	0

Jerant (2001)[35]	Tele-transmission (digital stethoscope)	13	n/a,	2.7 (6.2)	0	1 (7.7)	0.7 (2.5)	0
	Usual care	12	n/a,	7.9 (17.2)	0	4 (33.3)	3.0 (7.2)	0
II. Telephone-supported care vs. Usual Care								
Krum (2013)[39]	Telephone	188	74/161 (46)	n/a,	17/170 (10%)	n/a,	n/a,	n/a,
	Usual care	217	114/204 (55.9)	n/a,	16/209 (7.7%)	n/a,	n/a,	n/a,
Boyne (2012)[20]	Telephone	197	92 (46.7)	n/a,	18 (9.1)	n/a,	n/a,	n/a,
	Usual care	185	78 (42.2)	n/a,	12 (6.5)	n/a,	n/a,	n/a,
Domingues (2011)[29]	Telephone	48	20 (42)	n/a,	6 (13)	n/a,	n/a,	n/a,
	Usual care	63	23 (37)	n/a,	13 (21)	n/a,	n/a,	n/a,
Ferrante (2010)[31]	Telephone	760	NR	189 (24.9)	174 (22.9)	n/a,	n/a,	n/a,
	Usual care	758	NR	197 (25.9)	220 (29.0)	n/a,	n/a,	n/a,
Chaudhry (2010)[22]	Telephone	826	407 (49.3)	7.2 (14.6)	92 (11.1)	227 (27.5)	n/a,	n/a,
	Usual care	827	392 (47.4)	7.0 (14.9)	94 (11.4)	223 (27.0)	n/a,	n/a,
Mortara (2009)[45]	Telephone	106	37 (35)	n/a,	n/a,	18 (17)	n/a,	n/a,
	Usual care	160	48 (30)	n/a,	n/a,	28 (18)	n/a,	n/a,
Wakefield (2008)[53]	Telephone	47	n/a,	n/a,	10 (21.3)	20 (42.6)	n/a,	n/a,
	Video-telephone	52	n/a,	n/a,	15 (28.9)	21 (40.4)	n/a,	n/a,
	Usual care	49	n/a,	n/a,	11 (22.4)	29 (59.2)	n/a,	n/a,
Ramachandran (2007)[47]	Telephone	25	n/a,	n/a,	n/a,	6 (24)	n/a,	n/a,
	Usual care	25	n/a,	n/a,	n/a,	4 (16)	n/a,	n/a,
Sisk (2006)[49]	Telephone	203	62 (30.5)	n/a,	22 (10.8)	18 (8.9)	n/a,	n/a,

	Usual care	203	74 (36.5)	n/a	22 (10.8)	29 (14.3)	n/a,	n/a,
DeWalt (2006)[28]	Telephone	59	n/a,	n/a,	3/62 (4.8)	n/a,	n/a,	n/a,
	Usual care	64	n/a,	n/a,	4/65 (6.2)	n/a,	n/a,	n/a,
Cleland (2005)[23]	Telephone	173	85 (49)	12 (5, 21)*	27 (16)	34 (20)	15 (7, 29)*	n/a,
	Usual care	85	46 (54)	7 (4, 12)*	20 (24)	24 (28)	11 (6, 20)*	n/a,
Dunagan (2005)[30]	Telephone	76	50 (66)	n/a,	13 (17)	27 (36)	NR	n/a,
	Usual care	75	55 (73)	n/a,	11 (15)	37 (49)	NR	n/a,
Tsuyuki (2004)[51]	Telephone	140	59 (42.1)	n/a,	n/a,	37 (26.4)	6.4 (6.0)	n/a,
	Usual care	136	51 (37.5)	n/a,	n/a,	38 (27.9)	11.6 (10.3)	n/a,
DeBusk (2004)[27]	Telephone	228	116 (50.9)	n/a,	21 (9)	38 (33)	n/a,	n/a,
	Usual care	234	117 (50)	n/a,	29 (12)	43 (37)	n/a,	n/a,
Laramee (2003)[42]	Telephone	141	49/131 (37)	6.9 (6.5)	13 (9.2)	18/131 (14)	n/a,	n/a,
	Usual care	146	46/125 (37)	9.5 (9.8)	15 (10.3)	21/125 (17)	n/a,	n/a
Kasper (2002)[37]	Telephone	102	n/a,	n/a,	7 (6.9)	26 (25.5)	n/a,	n/a,
	Usual care	98	n/a,	n/a,	13 (13.4)	35 (35.7)	n/a,	n/a,
Krumholz (2002)[40]	Telephone	44	n/a,	10.2 (16.8)	9 (20.4)	18 (40.9)	4.1 (6.4)	n/a,
	Usual care	44	n/a,	15.2 (17.5)	13 (29.5)	30 (68.2)	7.6 (12.1)	n/a,
McDonald (2002)[44]	Telephone	51	n/a,	n/a,	n/a,	1 (2.0)	n/a,	3 (5.9)
	Usual care	47	n/a,	n/a,	n/a,	11 (23.4)	n/a,	3 (6.4)

Blue (2001)[18]	Telephone	84	47 (56)	10.3 (19.0)	25 (30)	12 (14)	3.43 (12.2)	n/a,
	Usual care	81	49 (60)	16.7 (24.1)	25 (31)	26 (32)	7.46 (16.6)	n/a,
Jerant (2001)[35]	Telephone	12	n/a,	2.2 (3.3)	2 (16.7)	1 (8.3)	0.7 (2.3)	0
	Usual care	12	n/a,	7.9 (17.2)	0	4 (33.3)	3.0 (7.2)	0
Gattis (1999)[32]	Telephone	90	17 (18.9)	n/a,	3 (3.3)	1 (1.1)	n/a,	1 (1.1)
	Usual care	91	30 (33.0)	n/a,	5 (5.5)	11 (12.1)	n/a,	1 (1.1)

Data expressed as [†] mean ± standard deviation; [*] median (IQR); [a] number of patients (%).

[b] Mortality in study reported by Soran et al. (2008) were cardiovascular disease-related mortality.

Abbreviations: BP, blood pressure; BW, body weight; ECG, electrocardiogram; HR, heart rate; ICD/CRT, implantable cardiac defibrillator/cardiac resynchronization therapy; IQR, interquartile range; LVEF, left ventricular ejection fraction; n/a, not available; NYHA, New York Heart Association Grade.