

Multidisciplinary approach for the treatment in HFpEF

Pr Michel GALINIER
Service de Cardiologie
CHU Toulouse-Rangueil

Déclaration de liens d'intérêt

Au cours des quatre dernières années, j'ai eu une affiliation ou des intérêts (financiers ou de nature non pécuniaire) avec la ou les société(s) suivante(s) :

Consultant: Amgen, Air Liquide, Astra-Zeneca, Bayer, Boehringer-Ingelheim, Boston Scientific, Bristol-Myers-Squibb, Medtronic, Newcard, Novartis, Novo-Nordisk, Pfizer, Viatris, ViforPharma

Honoraria : Amgen, Air Liquide, Astra-Zeneca, Bayer, Boehringer-Ingelheim, Boston Scientific, Bristol-Myers-Squibb, Medtronic, Newcard, Novartis, Novo-Nordisk, Pfizer, Viatris, ViforPharma

Recommendations for exercise, multidisciplinary management and monitoring of patients with heart failure

Since 2005

Recommendations	Class ^a	Level ^b
It is recommended that regular aerobic exercise is encouraged in patients with HF to improve functional capacity and symptoms.	I	A
It is recommended that regular aerobic exercise is encouraged in stable patients with HFrEF to reduce the risk of HF hospitalization.	I	A
It is recommended that patients with HF are enrolled in a multidisciplinary care management programme to reduce the risk of HF hospitalization and mortality.	I	A

« During hospital admission, providing patients with information and education for self-care improves outcomes »

Ces recommandations s'appliquent à tous les types d'IC y compris IC FEp

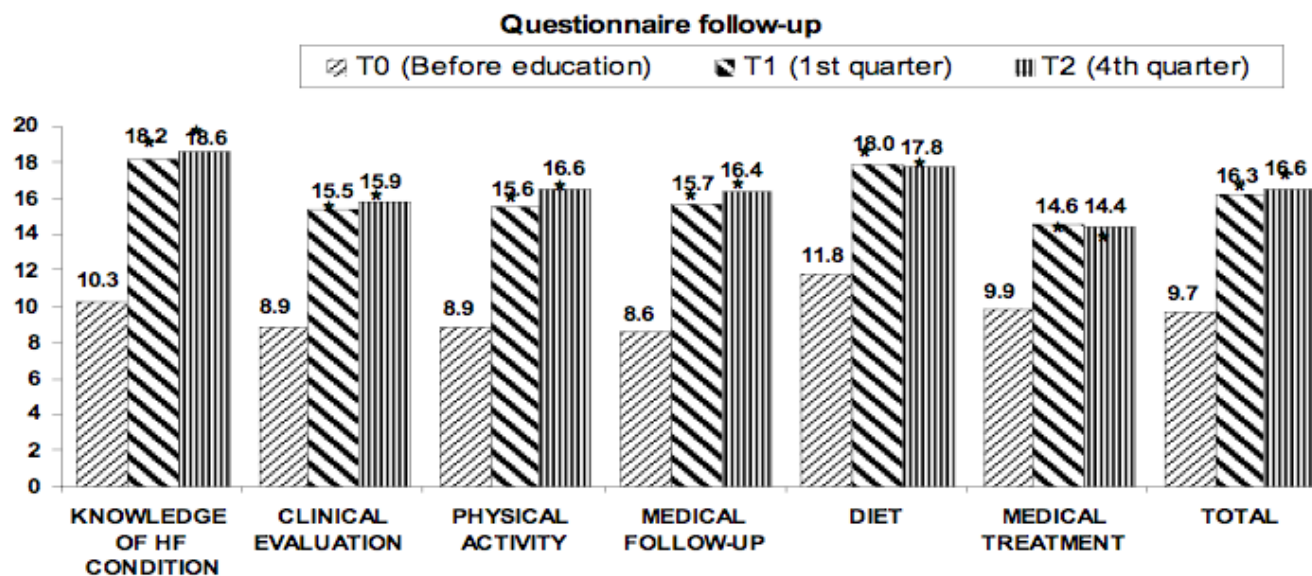
Multidisciplinary intervention programmes and transition cares

Tools	Actors	Actions
Home visit programme	Nurses Doctors	Therapeutic education Clinical follow-up
Structured telephone support	Nurse	Therapeutic education Follow-up with the active participation of the patients : symptoms, weight, BP and HR
Telemonitoring	Nurse Doctor	Follow-up with a collection of symptoms, weight, BP, HR, SaO ₂ , ECG... passively
Heart failure clinique	Nurse Doctor	Therapeutic education Clinical and biological follow-up
Primary therapeutic education	Nurse Doctors Dieteticians Physical therapists Druggists	Therapeutic education during hospitalization
Care network	Nurses Doctors	Therapeutic education Clinical follow-up

Improvement of Young and Elderly Patient’s Knowledge of Heart Failure After an Educational Session

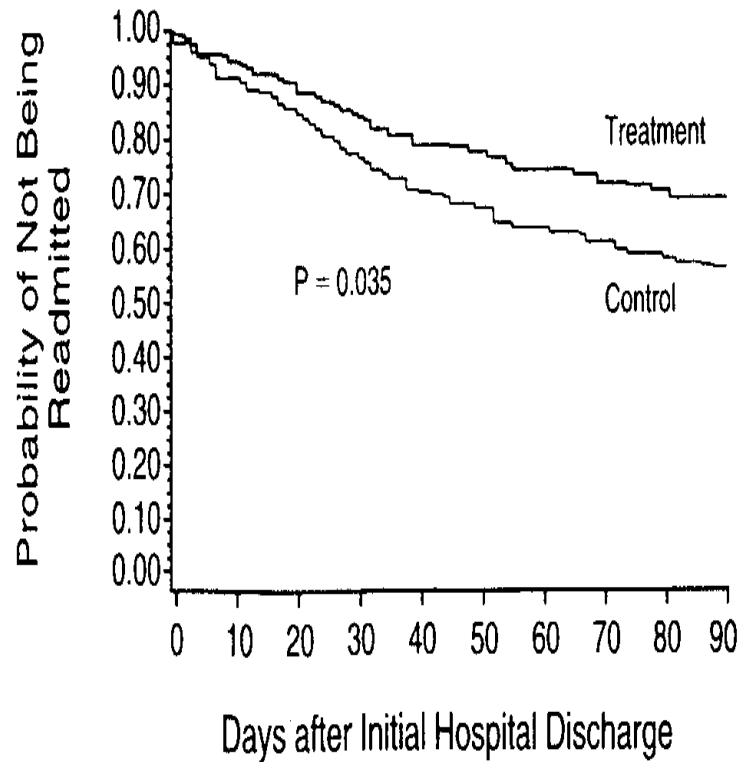
Jérôme Roncalli^{1,2}, Laurence Perez¹, Atul Pathak^{1,3}, Laure Spinazze¹, Sandrine Mazon¹, Olivier Lairez¹, Daniel Curnier², Joëlle Fourcade¹, Meyer Elbaz¹, Didier Carrié¹, Jacques Puel^{1,4}, Jean-Marie Fauvel¹ and Michel Galinier^{1,2}

¹Rangueil University Hospital, Department of Cardiology and Heart Failure Educational Centre (Centre d’ Education pour Patient Insuffisant Cardiaque (CEPIC)), Toulouse, France. ²INSERM U858-I2MR, Hôpital de Rangueil, Toulouse, France. ³Service de Pharmacologie Clinique, Faculté de Médecine Toulouse, France. ⁴Deceased.



HF= Heart Failure; * T1 vs T0; T2 vs T0 : p < 0.05

A multidisciplinary intervention to prevent the readmission of elderly patients with CHF



COMPONENT OF CARE	CONTROL GROUP	TREATMENT GROUP	DIFFERENCE
			<i>\$ per patient</i>
Intervention	Not applicable	216	+216
Care givers	828	1,164	+336
Other medical care	1,211	1,257	+46
Readmission	3,236	2,178	-1,058*
All	5,275	4,815	-460

*P=0.03 for the difference between groups.

Impact of multiprofessional structured programme with therapeutic education in elderly patients with chronic heart failure : meta-analysis

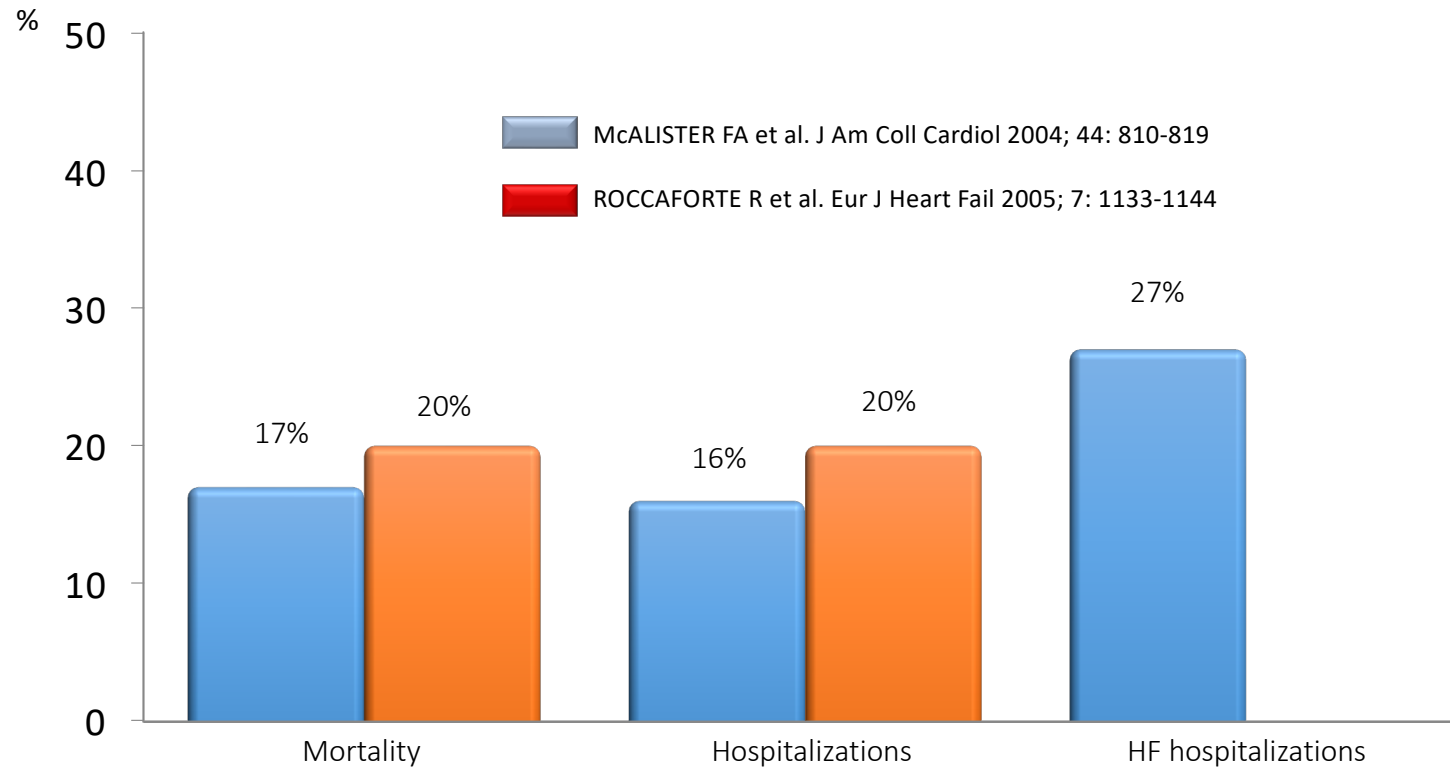
Meta-analysis of 11 randomised trials (since 1996 to 1999)

1937 patients, mean age : 74 years

- 9 involving multidisciplinary teams
- 2 with follow-up in primary care by telephone monitoring

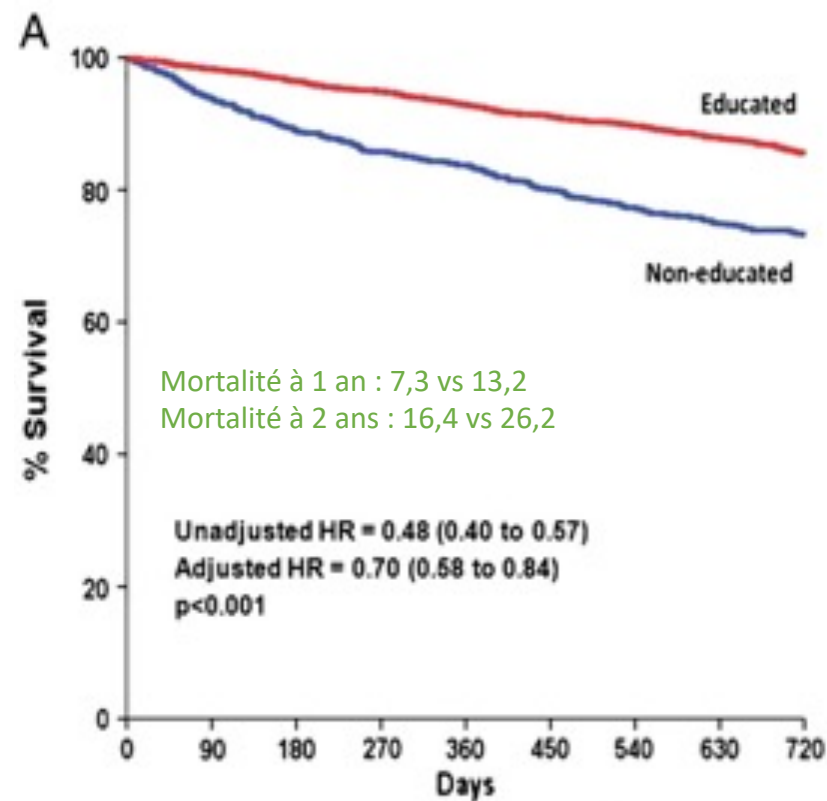
	RR	IC 95 %
Rehospitalizations (11 trials)	0,87	0,79-0,96
• 9 « multidisciplinary » trials	0,77	0,68-0,86
• 2 « home practitioner » trials	0,94	0,75-1,19
Mortality (9 trials)	1,15	0,96-1,37

Impact of multidisciplinary structural programme in patients with chronic heart failure : meta-analysis



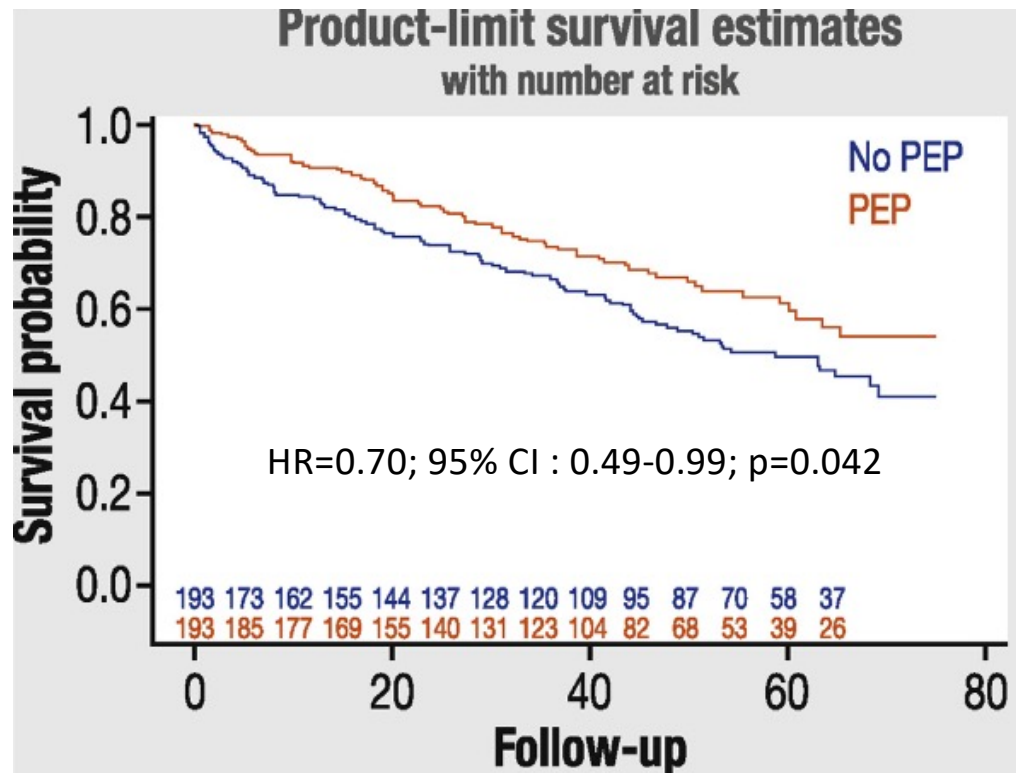
Therapeutic patient education and all-cause mortality in patients with chronic heart failure: A propensity analysis

Yves Juillière ^{a,*}, Patrick Jourdain ^b, Christine Suty-Selton ^a, Thierry Béard ^c, Véronique Berder ^d,
Brigitte Maître ^e, Jean-Noël Trochu ^f, Elodie Drouet ^g, Benoît Pace ^h, Geneviève Mulak ^h, Nicolas Danchin ⁱ
for the ODIN Cohort Participants ¹



Effectiveness of a patient education programme in heart failure with preserved ejection fraction : results from the ODIN cohort study using propensity score matching

849 patients with HFpEF : 572 participated to patient education programmes (PEP) and 277 did not



In HFpEF, a structured patient education programme is associated with lower all-cause mortality

Modalities of therapeutic patient education in HF

Table 14.2 Key topics and self-care skills to include in patient education and the professional behaviours to optimize learning and facilitate shared decision making

Education topic	Patient skills	Professional behaviours
Definition, aetiology and trajectory of HF (including prognosis).	<ul style="list-style-type: none"> Understand the cause of HF, symptoms and disease trajectory. Make realistic decisions including decisions about treatment at end-of-life. 	<ul style="list-style-type: none"> Provide oral and written information that takes account of educational grade and health literacy. Recognize HF disease barriers to communication and provide information at regular time intervals. Sensitively communicate information on prognosis at time of diagnosis, during decision making about treatment options, when there is a change in the clinical condition and whenever the patient requests.
Symptom monitoring and self-care.	<ul style="list-style-type: none"> Monitor and recognize change in signs and symptoms. Know how and when to contact a healthcare professional. In line with professional advice, know when to self-manage diuretic therapy and fluid intake. 	<ul style="list-style-type: none"> Provide individualized information to support self-management such as: <ul style="list-style-type: none"> In the case of increasing dyspnoea or oedema or a sudden unexpected weight gain of >2 kg in 3 days, patients may increase their diuretic dose and/or alert their healthcare team. Use of flexible diuretic regime. Self-care support aids such as dosette box when appropriate.
Pharmacological treatment.	<ul style="list-style-type: none"> Understand the indications, dosing and side effects of drugs. Recognize the common side effects and know when to notify a healthcare professional. Recognize the benefits of taking medication as prescribed. 	<ul style="list-style-type: none"> Provide written and oral information on dosing, effects and side effects (see web tables 7.4-7.8 – practical guidance on use of pharmacological agents).
Implanted devices and percutaneous/surgical interventions.	<ul style="list-style-type: none"> Understand the indications and aims of procedures/implanted devices. Recognize the common complications and know when to notify a healthcare professional. Recognize the importance and benefits of procedures/implanted devices. 	<ul style="list-style-type: none"> Provide written and oral information on benefits and side effects. Provide written and oral information on regular control of device functioning, along with documentation of regular check-up.
Immunization	<ul style="list-style-type: none"> Receive immunization against influenza and pneumococcal disease. 	<ul style="list-style-type: none"> Advise on local guidance and immunization practice.
Diet and alcohol	<ul style="list-style-type: none"> Avoid excessive fluid intake. Recognize need for altered fluid intake such as: <ul style="list-style-type: none"> Increase intake during periods of high heat and humidity, nausea/vomiting Fluid restriction of 1.5–2 L/day may be considered in patients with severe HF to relieve symptoms and congestion. Monitor body weight and prevent malnutrition. Eat healthily, avoid excessive salt intake (>6 g/day) and maintain a healthy body weight. Abstain from or avoid excessive alcohol intake, especially for alcohol induced cardiomyopathy. 	<ul style="list-style-type: none"> Individualize information on fluid intake to take into account body weight and periods of high heat and humidity. Adjust advice during periods of acute decompensation and consider altering these restrictions towards end-of-life. Tailor alcohol advice to aetiology of HF; e.g. abstinence in alcoholic cardiomyopathy. Normal alcohol guidelines apply (2 units per day in men or 1 unit per day in women). 1 unit is 10 mL of pure alcohol (e.g. 1 glass of wine, 1/2 pint of beer, 1 measure of spirit). For management of obesity (see Section 11.15).

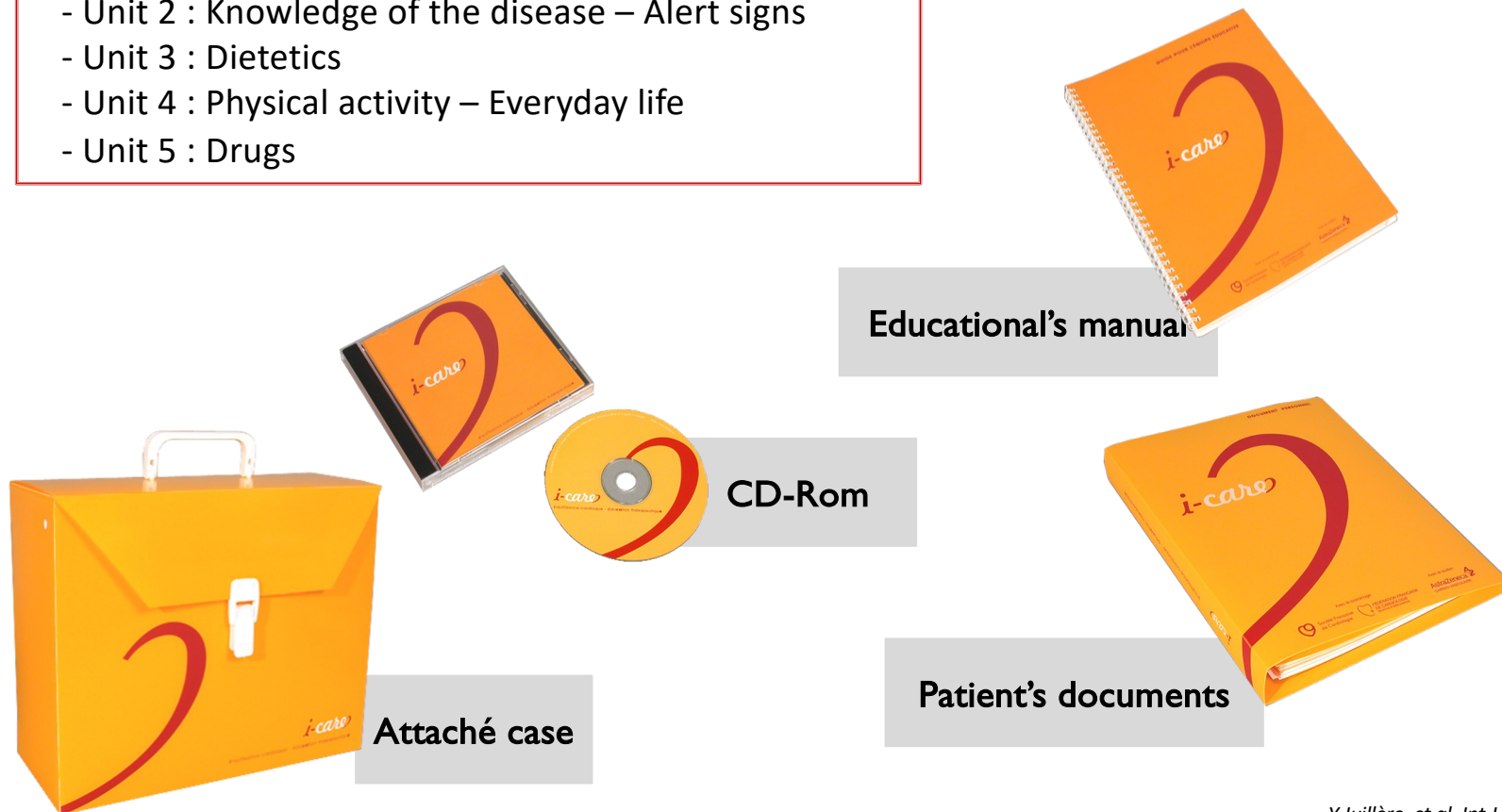
Education topic	Patient skills	Professional behaviours
Smoking and recreational substance use.	<ul style="list-style-type: none"> Stop smoking and taking recreational substances. 	<ul style="list-style-type: none"> Refer for specialist advice for smoking cessation and drug withdrawal and replacement therapy. Consider referral for cognitive behavioural theory and psychological support if patient wishes support to stop smoking.
Exercise	<ul style="list-style-type: none"> Undertake regular exercise sufficient to provoke mild or moderate breathlessness. 	<ul style="list-style-type: none"> Advice on exercise that recognizes physical and functional limitations, such as frailty, comorbidities. Referral to exercise programme when appropriate.
Travel and leisure	<ul style="list-style-type: none"> Prepare travel and leisure activities according to physical capacity. Monitor and adapt fluid intake according to humidity (flights and humid climates). Be aware of adverse reactions to sun exposure with certain medication (such as amiodarone). Consider effect of high altitude on oxygenation. Take medicine in cabin luggage in the plane, have a list with you of treatments and the dosage with the generic name. 	<ul style="list-style-type: none"> Refer to local country specific driving regulations regarding ICD. Provide advice regarding flight security devices in presence of ICD.
Sleep and breathing (see co-morbidities Section 11.16).	<ul style="list-style-type: none"> Recognize problems with sleeping, their relationship with HF and how to optimize sleep. 	<ul style="list-style-type: none"> Provide advice such as timing of diuretics, environment for sleep, device support. In presence of sleep-disordered breathing provide advice on weight reduction/control.
Sexual activity (see co-morbidities Section 11.7).	<ul style="list-style-type: none"> Be reassured about engaging in sex, provided sexual activity does not provoke undue symptoms. Recognize problems with sexual activity, their relationship with HF and applied treatment and how to treat erectile dysfunction. 	<ul style="list-style-type: none"> Provide advice on eliminating factors predisposing to erectile dysfunction and available pharmacological treatment of erectile dysfunction. Refer to specialist for sexual counselling when necessary.
Psychosocial aspects	<ul style="list-style-type: none"> Understand that depressive symptoms and cognitive dysfunction are found more frequently in people with HF, and that they may affect adherence. Recognize psychological problems which may occur in the course of disease, in relation to changed lifestyle, pharmacotherapy, implanted devices and other procedures (including mechanical support and heart transplantation). 	<ul style="list-style-type: none"> Regularly communicate information on disease, treatment options and self-management. Involve family and carers in HF management and self-care. Refer to specialist for psychological support when necessary.

HF = heart failure; ICD = implantable cardioverter defibrillator.

Creation of standardized tools for therapeutic education specifically dedicated for chronic heart failure patients : the French I-CARE project

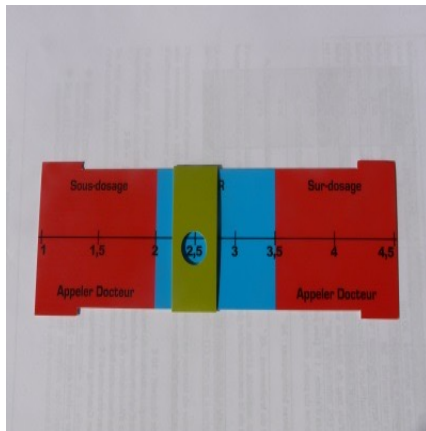
I-CARE Programme

- Unit 1 : Educative diagnosis
- Unit 2 : Knowledge of the disease – Alert signs
- Unit 3 : Dietetics
- Unit 4 : Physical activity – Everyday life
- Unit 5 : Drugs



Education thérapeutique

Des outils au service des patients et des soignants



SurviCARD® v.2012
Outil de surveillance de l'Insuffisance cardiaque

Outil élaboré par l'Unité de Réentraînement et d'Education des Patients Insuffisants Cardiaques de la Clinique du Château de Vernhes - Bondigoux

ESSOUFFLEMENT 	1 Je ne suis pas essoufflé(e) Je dors comme d'habitude	2 Je suis essoufflé(e) pour 2 Etages. (marche en côte, port de panier, poussé de caddy) Je dors comme d'habitude	3 Je suis essoufflé(e) pour 1 Etage, pour des petits efforts de la vie quotidienne (se lever, s'habiller, marcher à plat) Je dors avec 1 oreiller supplémentaire	4 Je suis essoufflé(e) au repos Je dors avec 2 oreillers supplémentaires ou en position demi-assise Je tousse la nuit
PRISE DE POIDS OEDEMES 	1 Mon poids est stable Je n'ai pas d'œdème au niveau des jambes	2 J'ai pris du poids : moins de 1 Kg. Et/ou J'ai les chevilles enflées	3 J'ai pris du poids : entre 1 et 3 Kg et/ou J'ai les jambes enflées jusqu'à hauteur de chaussette	4 J'ai pris du poids : plus de 3 Kg et/ou J'ai les jambes enflées jusqu'aux genoux
FATIGUE à l'EFFORT 	1 Je ne suis pas fatigué(e), et Je marche + de 500 mètres en 6 minutes	2 Je suis un peu fatigué(e), et Je marche 300 à 500 mètres en 6 minutes	3 Je suis fatigué(e), et Je marche 200 à 300 mètres en 6 minutes	4 Je suis très fatigué(e), et Je marche moins de 200 mètres en 6 minutes
PALPITATIONS 	1 Je n'ai pas de palpitations Mon pouls est régulier et inférieur à 85 BPM	2 Mon pouls est entre 80 et 100 BPM. Mon pouls est régulier	3 Mon pouls est entre 80 et 100 BPM. Mon pouls est irrégulier	4 Mon pouls est supérieur à 100 BPM. Mon pouls est irrégulier
Score =	de 4 à 7	de 8 à 10		Au-delà de 10
Votre attitude	Votre état est stable	Se Peser tous les jours + Appeler son médecin pour adapter les diurétiques		Appeler votre Médecin rapidement



Only 16 % of patients (260) were included in an educational programme after an hospitalization for acute HF in APHP in 2014/2015



Recommandations ESC 2021 : éducation thérapeutique

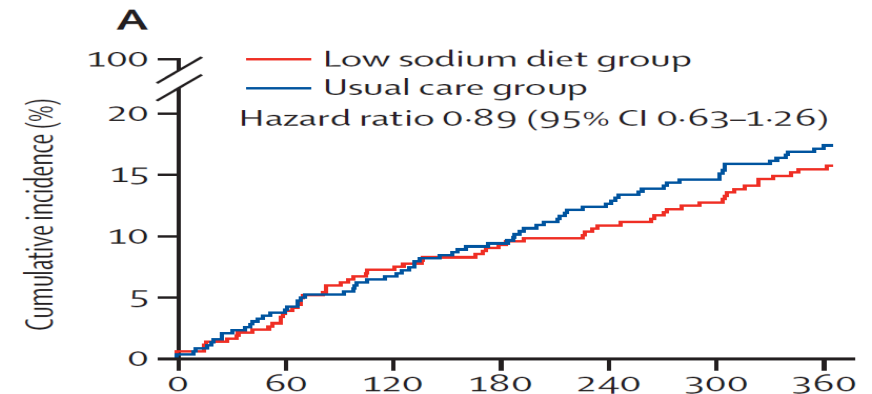
Education topic	Goal for the patient and caregiver	Professional behaviour and educational tools
		Consider and carefully discuss the benefits and deleterious effects of sleep medication.
Fluids	<p>To avoid large volumes of fluid intake. A fluid restriction of 1.5–2 L/day may be considered in patients with severe HF/hyponatraemia to relieve symptoms and congestion.</p> <p>To avoid dehydration: where fluids are restricted, increase intake during periods of high heat/humidity and/or nausea/vomiting.</p>	<p>Provide information and discuss the advantages and disadvantages of fluid restriction.</p> <p>Advise to adapt fluid intake to weight, and in times of high heat and humidity, nausea/vomiting.</p> <p>Adjust advice during periods of acute decompensation and consider altering this advice towards end-of-life.</p>
Healthy diet	<p>To be able to prevent malnutrition and know how to eat healthily, avoiding excessive salt intake (>5 g/day) and maintaining a healthy body weight.</p>	<p>Discuss current food intake, role of salt, role of micronutrients.</p> <p>Discuss the need for supplementing in case of nutrient deficiencies but there is no clear role for routine micronutrient supplementation.³²¹</p> <p>Discuss maintaining a healthy body weight.</p>
Alcohol	<p>To be able to abstain from or avoid excessive alcohol intake, especially for alcohol-induced CMP.</p> <p>To restrict alcohol according to CV prevention guidelines.</p>	<p>Tailor alcohol advice to aetiology of HF; e.g. abstinence in alcoholic CMP.</p> <p>Inform and discuss alcohol intake according to CV prevention guidelines (2 units per day in men or 1 unit per day in women)^a.</p>

Aucun niveau de recommandation pour les apports en sel
 Arrêt des recommandations de régime sans sel strict
Apport alimentaire en sel ≤ 5 g/j

Essai SODIUM-HF : tester l'effet d'un régime sans sel strict (< 1500 mg Na⁺/j) versus contrôle sodé usuel

- Essai multicentrique, randomisé, réalisé en ouvert
- 806 insuffisants cardiaques ambulatoires, d'âge moyen 67 ans, consommant en moyenne 2200 mg Na⁺/j (5,5 g de sel); suivi moyen 12 mois
- Critère primaire : décès, hospitalisation ou visite aux urgences pour cause cxvx

Apport en sel médian	Avant	Après
Régime sans sel strict	2286 mg/j	1658 mg/j
Contrôle sodé usuel	2119 mg/j	2073 mg/j



- Différence d'apport sodé testée entre les 2 groupes limitée : 415 mg Na⁺ = 1 g de sel
- Aucune différence pour critères primaires mais amélioration modérée qualité de vie et symptômes (NYHA) dans le groupe régime sans sel strict
- Mais groupe contrôle suit régime relativement peu sodé, consommation sodée initiale non excessive

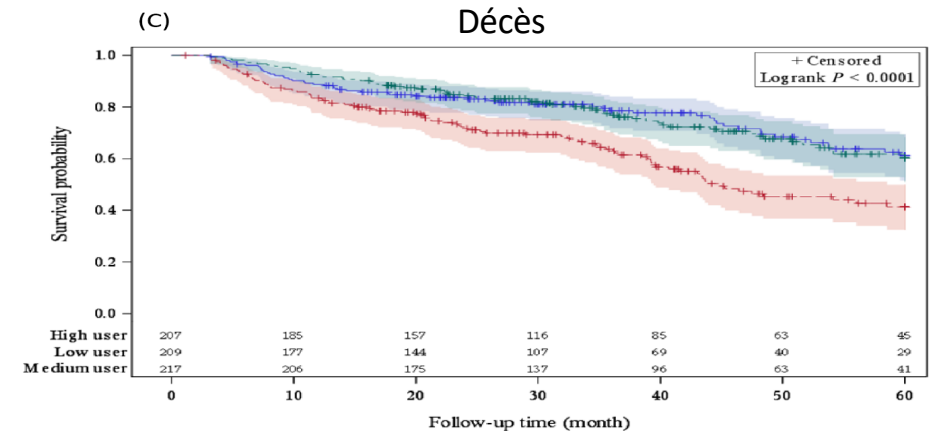
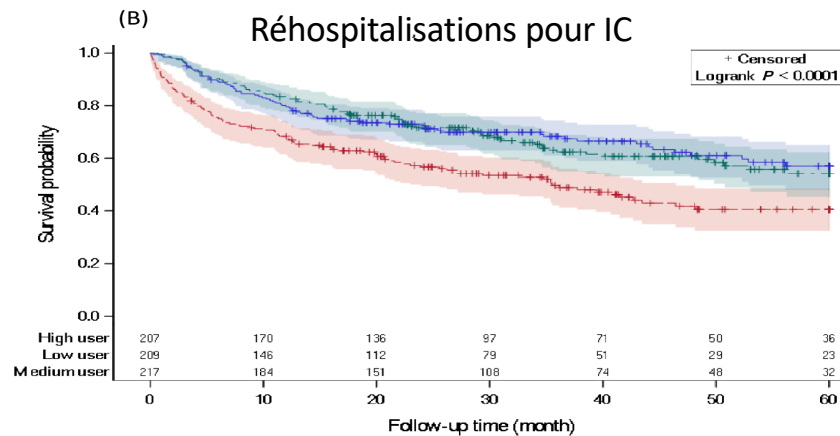
Régime sans sel strict non nécessaire

Suivi Clinique A Domicile (SCAD) en Basse Normandie

Etude rétrospective, observationnelle de 659 pts récemment hospitalisés pour ICA, d'âge moyen 67 ans, 72 % d'hommes, 56 % en classe II, 53 % avec FE < 40 %, avec éducation thérapeutique et surveillance 3 fois/sem grâce à une tablette tactile du poids, FC, PA, symptômes, suivis grâce à SNDS

	Année précédent enrolement	Année suivant enrolement
Taux de réhospitalisation pour mie cxvx	79,4 %	41,1 %
Taux d'hospitalisation pour IC	52,8 %	18,8 %

Réhospitalisations pour IC et décès en fonction de l'adhérence au SCAD



Mauvaise adhérence au SCAD associée à un risque accru d'évènements

ETAPES : Telemonitoring of chronic heart failure patients in France

La prestation de télésurveillance comprend **obligatoirement**, sur prescription médicale, l'association d'une télésurveillance médicale, de la fourniture d'une solution technique et d'une **prestation d'accompagnement thérapeutique**

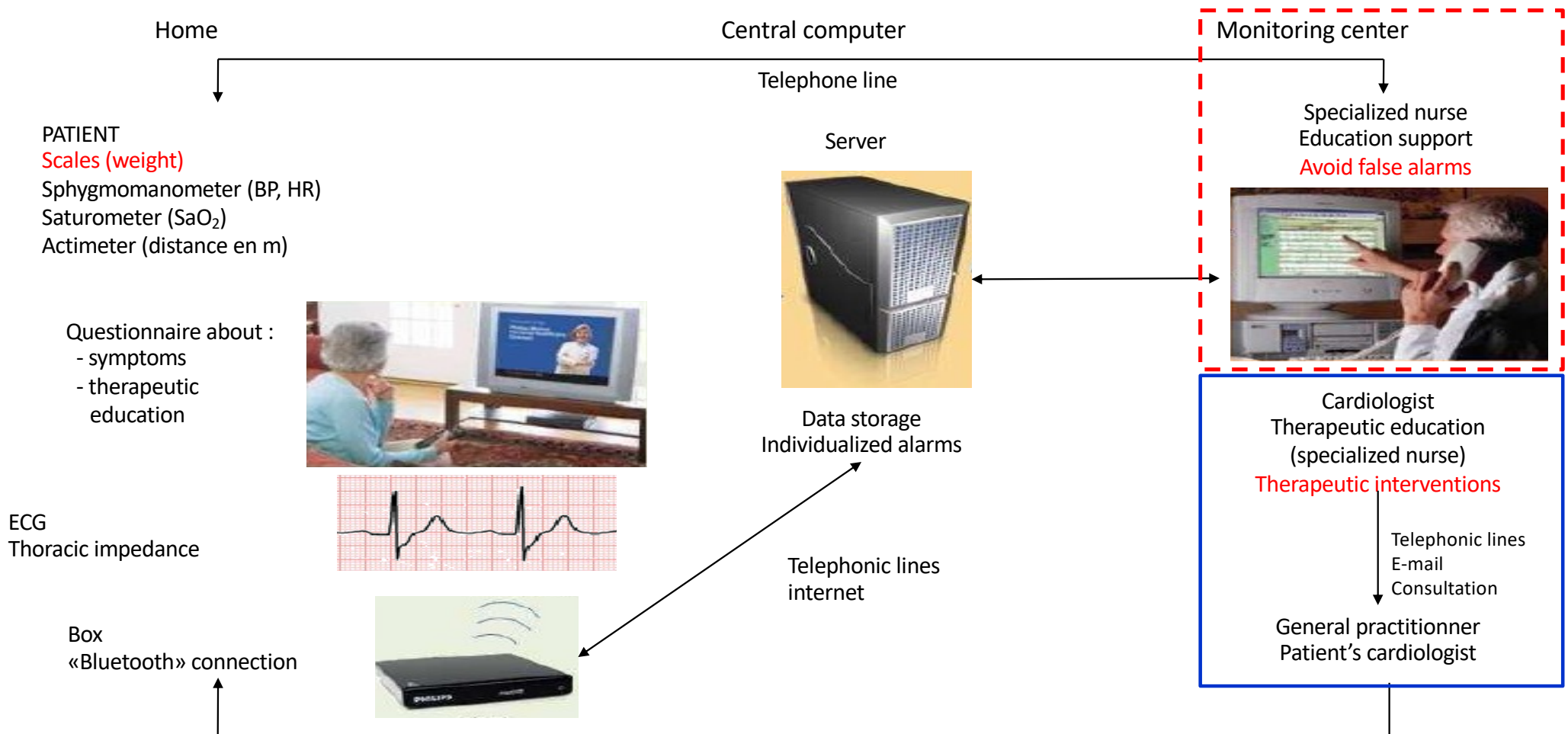
Cet accompagnement tout au long du projet de télésurveillance est indispensable pour permettre au patient de s'impliquer dans sa surveillance et d'adhérer ainsi à son plan de soin.

Chaque séance d'accompagnement thérapeutique peut se réaliser sous forme **présentielle ou à distance**, quel que soit le moyen utilisé (téléphone, eLearning, enseignement assisté à distance). **Un nombre minimal de 3 séances dans les 6 mois suivant l'inclusion du patient dans le projet de télésurveillance doivent être réalisées.**

Solution technique et organisationnelle minimale à mettre en œuvre

- **Un système de recueil et de mesure quotidienne du poids**
- **Un algorithme**, par définition validé par le médecin effectuant la télésurveillance, permettant de générer des alertes en cas de décompensation cardiaque débutante nécessitant possiblement un ajustement de traitement.
 - Soit totalement automatisé, c'est-à-dire n'impliquant aucun filtre humain en charge de la vérification de la cohérence de l'alerte. Dans ce cas, le médecin effectuant la télésurveillance reçoit l'ensemble des alertes sans prétraitement préalable ;
 - Soit être contrôlé par un IDE quel que soit son mode d'exercice, chargé de contacter le patient afin de s'assurer de la cohérence de l'alerte.

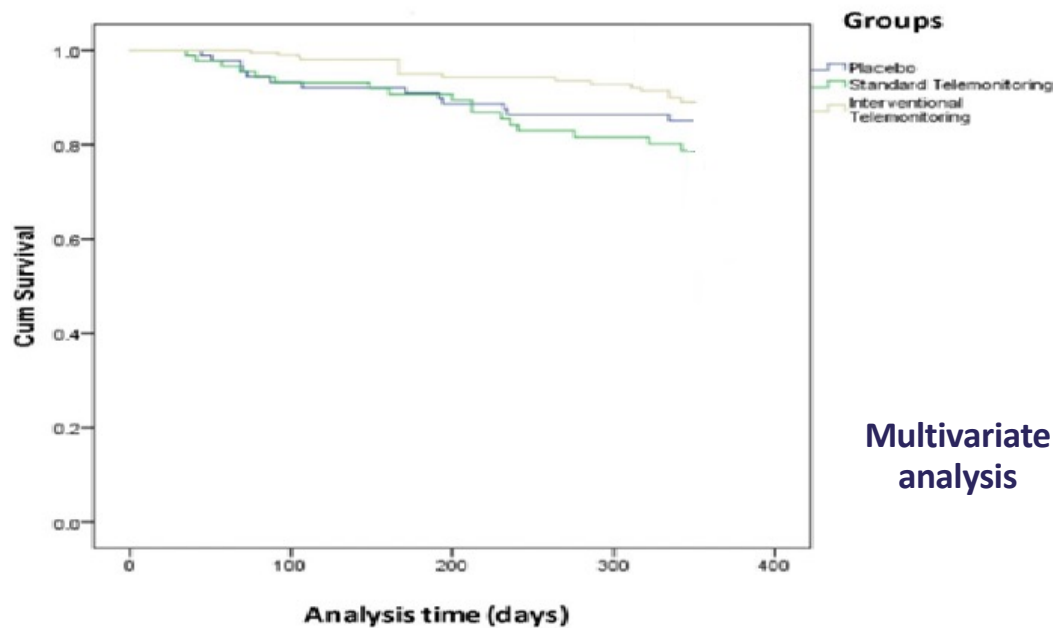
Télesurveillance par matériel externe



ETAPES experience in Toulouse : effects of cardiology telemonitoring on unplanned hospitalizations and all-cause mortality in patients with CHF

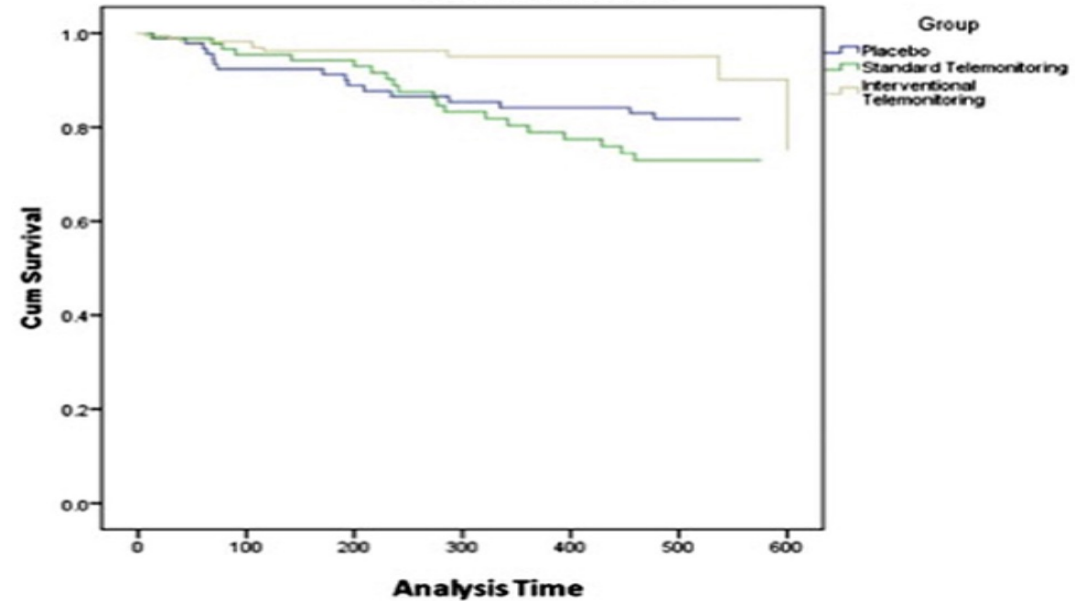
Comparaison des 220 premiers patients d'ETAPES aux groupes contrôle (95 pts) et télésurveillance standard (99 pts) de l'essai OSICAT inclus au CHU de Toulouse

Unplanned Hospitalization



RR=0,30; IC 95%=0,16-0,55; p<0,01

Survival Functions

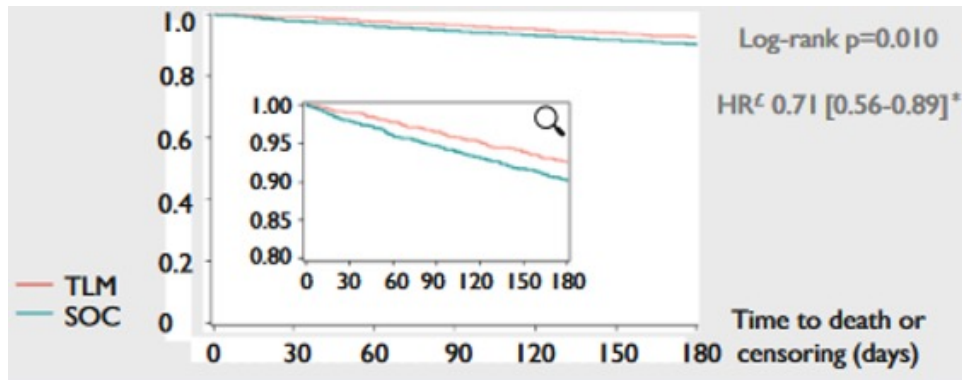


RR=0,25; IC 95%=0,10-0,63; p=0,003

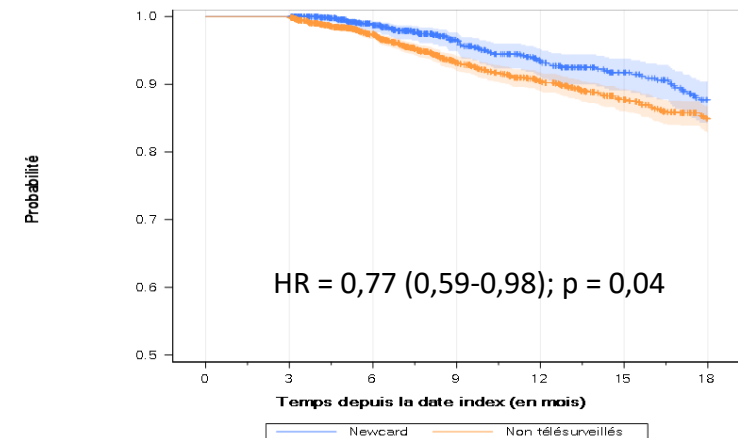
Le suivi cardiologique fait la différence !

ETAPES experiences : télémonitoring of heart failure vs standard of care in real world setting : results of 3 nationwide matched cohort studies (SNDS database)

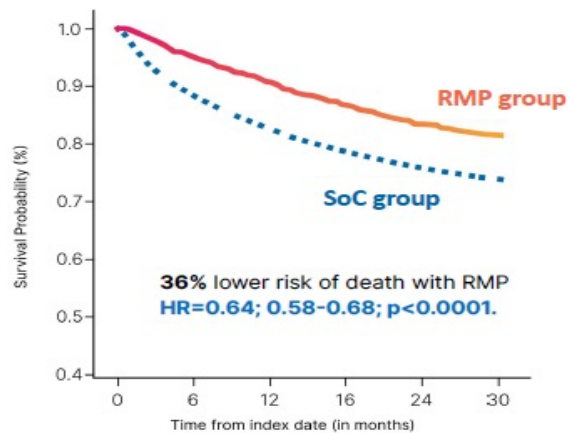
Air Liquide - Mortality at 6 months¹



NewCard : New TS3 - Mortality at 18 months



Satelia : Telesat-HF - Mortality



Résultats similaires de 3 études en vie réelle
Baisse mortalité totale
Augmentation des hospitalisations en cardiologie
Diminution des passages par les urgences

1. Roubille F, et al. *Eur J Heart Fail* 2024. <https://doi.org/10.1002/ejhf.3191>
2. D'après la présentation du Dr N Girerd, *Heart Failure Congress* 2024

Méta-analyse 2023 des études de télésurveillance non invasives dans l'insuffisance cardiaque

65 études, 23 610 patients, âge moyen 68 ans, 68 % d'hommes, 47 % NYHA III/IV

	RR	IC 95 %
Mortalité totale	0,85	0,77-0,94
1 ^{ère} hospitalisation pour IC	0,78	0,70-0,86
Total des hospitalisations pour IC	0,82	0,70-0,96

ESC 2021 : Place de la télésurveillance dans l'insuffisance cardiaque chronique

Recommendations	Class ^a	Level ^b
Non-invasive HTM may be considered for patients with HF in order to reduce the risk of recurrent CV and HF hospitalizations and CV death. ³⁷⁴	IIb	B
Monitoring of pulmonary artery pressure using a wireless haemodynamic monitoring system may be considered in symptomatic patients with HFrEF (LVEF \leq 35%) in order to improve clinical outcomes. ³⁷²	IIb	B

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Synthèse



- Après une éducation thérapeutique présentielle portant sur les objectifs de sécurité en cours d'hospitalisation, un accompagnement thérapeutique par téléphone, intégré à la télésurveillance, est suffisant, adapté à des micro-projets individualisés
- Une simple télésurveillance du poids et des symptômes permet un dépistage performant des signes précoces de décompensation cardiaque avec une orientation efficace des patients, évitant le recours aux services d'urgence de porte
- La télésurveillance par une équipe pluriprofessionnelle de Cardiologie améliore le pronostic, diminuant le risque de décès
- Pas de bénéfice pour les patients non-observants
- La télésurveillance est plus efficace chez les patients sévères en post-hospitalisation pour décompensation
- Education thérapeutique et télésurveillance doivent être proposées à tous les patients y compris avec ICFEp