Supplementary Online Content

Arsenault-Lapierre G, Henein M, Gaid D, Le Berre M, Gore G, Vedel I. Hospital-at-home interventions vs in-hospital stay for patients with chronic disease who present to the emergency department: a systematic review and meta-analysis. *JAMA Netw Open*. 2021;4(6):e2111568. doi:10.1001/jamanetworkopen.2021.11568

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This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix 1. Methods Details

Exclusion criteria

Studies with obstetric, mental health, and rehabilitation populations were excluded. Long-term

care, post-surgery, services provided in outpatient settings (not within patients' homes), post-

discharge interventions, end-of-life care at home, and self-care by the patient in their home, such

as self-administration of an intravenous infusion, were excluded.

Detailed electronic search strategy

We performed a 3-concept search using combinations of subject headings and text words for the

concepts of "Hospital-at-Home", "ED", and "randomized controlled trials", from inception to

March 4, 2019, with no language restriction.

Original Searches

1. Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily <1946 to Present>

Search strategy:

2 Home Care Services, Hospital-Based/ (1834)

3 (home* versus hospital* or home care versus hospital* or home* vs hospital* or home care vs hospital* or hospital* versus home* or hospital* vs home* or "home* or hospital*" or "home care or hospital*" or "hospital*" or "home*").tw,kf. (612)

4 Home hospitali#ation*.tw,kf. (182)

5 ((hospital* or conventional care or conventional management or conventional therap* or conventional treatment* or usual care) adj2 alternative*).tw,kf. (1255)

6 (admission* adj2 avoid*).tw,kf. (616)

7 ((Home-based or "at home" or home care or homecare or home treatment* or home therap* or ((early or earlier or home*) adj2 discharge*) or ((outpatient or out patient) adj (setting* or care))) adj15 (hospital-based or hospital care or in hospital or ((inpatient or in patient) adj (care or setting*)) or general ward\$1 or hospitaliz* or hospitalis* or usual care or conventional care or conventional management or conventional hospital* or conventional therap* or conventional treatment*)).tw,kf. (6713)

8 or/2-7 (10499)

9 exp emergency health services, hospital/ or ambulatory care/ or exp community health services/ (324355)

10 (emergenc* or acute or urgent care or community or outpatient* or out patient* or ambulatory or clinic or clinics or er or ed or ers or eds or "at hospital" or home care or homecare).mp. (2594752)

11 9 or 10 (2726732)

^{1 (}hospital* adj2 at home).tw,kf. (1132)

- 12 8 and 11 (8066)
- 13 1 or 12 (8689)

14 ((randomized controlled trial or controlled clinical trial).pt. or randomized.ab. or randomised.ab. or placebo.ab. or drug therapy.fs. or randomly.ab. or trial.ab. or groups.ab.) not (exp animals/ not humans.sh.) (3805620)

14 13 and 14 (2787)

2. Database: Embase Classic+Embase <1947 to 2019 March 01>

Search strategy:

1 (hospital* adj2 at home).tw,kf. (1751)

2 (home* versus hospital* or home care versus hospital* or home* vs hospital* or home care vs hospital* or hospital* versus home* or hospital* vs home* or "home* or hospital*" or "home care or hospital*" or "home*").tw,kf. (870)

3 Home hospitali#ation*.tw,kf. (263)

4 ((hospital* or conventional care or conventional management or conventional therap* or conventional treatment* or usual care) adj2 alternative*).tw,kf. (1691)

5 (admission* adj2 avoid*).tw,kf. (1121)

6 ((Home-based or "at home" or home care or homecare or home treatment* or home therap* or ((early or earlier or home*) adj2 discharge*) or ((outpatient or out patient) adj (setting* or care))) adj15 (hospital-based or hospital care or in hospital or ((inpatient or in patient) adj (care or setting*)) or general ward\$1 or hospitaliz* or hospitalis* or usual care or conventional care or conventional management or conventional hospital* or conventional therap* or conventional treatment*)).tw,kf. (10763)

7 or/2-6 (14199)

8 emergency ward/ or exp emergency treatment/ or exp ambulatory care/ or exp community care/ (521155)

9 (emergenc* or acute or urgent care or community or outpatient* or out patient* or ambulatory or clinic or clinics or er or ed or ers or eds or "at hospital" or home care or homecare).mp. (3760226)

10 8 or 9 (3924702)

- 11 7 and 10 (10218)
- 12 1 or 11 (11311)

13 crossover-procedure/ or double-blind procedure/ or randomized controlled trial/ or singleblind procedure/ or (random* or factorial* or crossover* or cross over* or placebo* or (doubl* adj blind*) or (singl* adj blind*) or assign* or allocat* or volunteer*).tw. (2140996)

14 12 and 13 (1918)

3. Database: PsycINFO <1806 to February Week 4 2019> Search Strategy:

1 (hospital* adj2 at home).mp. (172)

2 (home* versus hospital* or home care versus hospital* or home* vs hospital* or home care vs hospital* or hospital* versus home* or hospital* vs home* or "home* or hospital*" or "home care or hospital*" or "home*").mp. (164)

3 Home hospitali#ation*.mp. (19)

4 ((hospital* or conventional care or conventional management or conventional therap* or conventional treatment* or usual care) adj2 alternative*).mp. (368)

5 (admission* adj2 avoid*).mp. (76)

6 ((Home-based or "at home" or home care or homecare or home treatment* or home therap* or ((early or earlier or home*) adj2 discharge*) or ((outpatient or out patient) adj (setting* or care))) adj15 (hospital-based or hospital care or in hospital or ((inpatient or in patient) adj (care or setting*)) or general ward\$1 or hospitaliz* or hospitalis* or usual care or conventional care or conventional management or conventional hospital* or conventional therap* or conventional treatment*)).mp. (1553)

7 or/2-6 (2076)

8 exp emergency services/ or exp outpatient treatment/ or exp community services/ (44649)

9 (emergenc* or acute or urgent care or community or outpatient* or out patient* or ambulatory or clinic or clinics or er or ed or ers or eds or "at hospital" or home care or homecare).mp. (512502)

10 8 or 9 (516675)

- 11 7 and 10 (1554)
- 12 1 or 11 (1666)
- 13 (control* or random* or placebo* or double blind*).mp. or exp treatment/ (1365282)
- 14 12 and 13 (1079)

4. CINAHL

Search strategy:

#	Query	Limiters/Expanders	Last Run Via	Results
S19	S17 AND S18	Search modes -	Interface –	3,048
		Boolean/Phrase	EBSCOhost	
			Research Databases	
			Search Screen -	
			Advanced	
			Search	
			Database - CINAHL	
			Plus with	
			Full Text	
S18	(MH "randomized	Search modes -	Interface –	542,221
	controlled trials" OR	Boolean/Phrase	EBSCOhost Research	
	MH		Databases	
	"double-blind studies"		Search Screen -	
	OR		Advanced	
	MH "single-blind		Search	
	studies"		Database - CINAHL	
			Plus with	

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017	OR MH "random assignment" OR MH "pretest-posttest design" OR MH "cluster sample" OR TI (randomised OR randomized) OR AB (random*) OR TI (trial) OR (MH "sample size" AND AB (assigned OR allocated OR control)) OR MH "placebos" OR PT "randomized controlled trial" OR AB (control W5 group) OR MH "crossover design" OR MH "crossover design" OR MH "comparative studies" OR AB (cluster W3 RCT)) NOT ((MH "animals+" OR MH "animal studies" OR TI (animal model*)) NOT			
S17	S1 OR S16	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	14,985
S16	S7 AND S15	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced	14,614

			Search Database - CINAHL Plus with Full Text	
\$15	S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	1,242,679
S14	(MH "Outpatients")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	42,637
S13	(MH "Outpatient Service")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	7,471
S12	(emergenc* or acute or "urgent care" or community or outpatient* or "out patient*" or ambulatory or clinic or clinics or er or ed or ers or eds or "at hospital" or "home care" or homecare)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	991,121
S11	(MH "Emergency Medical Services+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	88,008
S10	(MH "Community Health Services+")	Search modes - Boolean/Phrase	Interface - EBSCOhost	377,143

			Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	
S9	(MH "Ambulatory Care")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	10,610
S8	(MH "Emergency Service")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	45,423
S7	S2 OR S3 OR S4 OR S5 OR S6	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	15,628
S6	(("Home-based" or "at home" or "home care" or homecare or "home treatment*" or "home therap*" or ((early or earlier or home*) N2 discharge*) or ((outpatient or "out patient") N1 (setting* or care))) N15 ("hospital-based" or "hospital care" or "in hospital" or ((inpatient or "in patient") N1 (care or setting*)) or "general ward*" or hospitaliz* or hospitalis* or "usual care" or "conventional care" or "conventional	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	14,347

S5	management" or "conventional hospital*" or "conventional therap*" or "conventional treatment*")) (admission* N2 avoid*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen -	443
			Advanced Search Database - CINAHL Plus with Full Text	
S4	((hospital* or "conventional care" or "conventional management" or "conventional therap*" or "conventional treatment*" or "usual care") N2 alternative*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	633
S3	(home hospitalisation* OR home hospitalization*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	54
S2	(home* versus hospital* or home care versus hospital* or home* vs hospital* or home care vs hospital* or hospital* versus home* or hospital* vs home* or "home* or hospital*" or "home care or hospital*" or "hospital* or home*")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	3,011
S1	(hospital* N2 "at home")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen -	5,115

Advance	1 Search
Database	- Plus with
Full Text	i ius with

Date Run: 04/03/2019 17:46:04 Search strategy:

ID Search Hits

#1 (hospital* NEAR/2 "at home"):ti,ab,kw 1267

#2 (home* next versus next hospital* or home next care next versus next hospital* or home* next vs next hospital* or home next care next vs next hospital* or hospital* next versus next home* or hospital* next vs next home* or "home or" next hospital* or "home care or" next hospital* or hospital* next "or home"):ti,ab,kw 216

#3 (home next hospitalisation* OR home next hospitalization*):ti,ab,kw 32

#4 ((hospital* or conventional next care or conventional next management or conventional next therap* or conventional next treatment* or usual next care) NEAR/2 alternative*):ti,ab,kw 153

#5 (admission* NEAR/2 avoid*):ti,ab,kw 55

#6 ((Home next based or at next home or home next care or homecare or home next treatment* or home next therap* or ((early or earlier or home*) NEAR/2 discharge*) or ((outpatient or out next patient) NEAR/1 (setting* or care))) NEAR/15 (hospital next based or hospital next care or in next hospital or ((inpatient or in next patient) NEAR/1 (care or setting*)) or general next ward* or hospitaliz* or hospitalis* or usual next care or conventional next therap* or conventional next therap* or conventional next treatment*)):ti,ab,kw 2812

#7 #2 OR #3 OR #4 OR #5 OR #6 3046

#8 (emergenc* or acute or urgent next care or community or outpatient* or out next patient* or ambulatory or clinic or clinics or er or ed or ers or eds or "at hospital" or home next care or homecare):ti,ab,kw 271889

#9 #7 AND #8 2646

#10 #1 OR #9 in Cochrane Reviews, Cochrane Protocols, Trials 3205

6. Database: AMED (Allied and Complementary Medicine) <1985 to March 2019> Search Strategy:

1 (hospital* adj2 at home).mp. (441)

2 (home* versus hospital* or home care versus hospital* or home* vs hospital* or home care vs hospital* or hospital* versus home* or hospital* vs home* or "home* or hospital*" or "home care or hospital*" or "hospital*" or "home*").mp. (317)

3 Home hospitali#ation*.mp. (9)

4 ((hospital* or conventional care or conventional management or conventional therap* or conventional treatment* or usual care) adj2 alternative*).mp. (70)

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5 (admission* adj2 avoid*).mp. (12)

6 ((Home-based or "at home" or home care or homecare or home treatment* or home therap* or ((early or earlier or home*) adj2 discharge*) or ((outpatient or out patient) adj (setting* or care))) adj15 (hospital-based or hospital care or in hospital or ((inpatient or in patient) adj (care or setting*)) or general ward\$1 or hospitaliz* or hospitalis* or usual care or conventional care or conventional management or conventional hospital* or conventional therap* or conventional treatment*)).mp. (2193)

7 or/2-6 (2314)

8 (emergenc* or acute or urgent care or community or outpatient* or out patient* or ambulatory or clinic or clinics or er or ed or ers or eds or "at hospital" or home care or homecare).mp. (91081)

- 9 7 and 8 (2286)
- 10 1 or 9 (2301)
- 11 (control* or random* or placebo* or double blind*).mp. or trial.ti. (45157)
- 12 10 and 11 (524)

7. HTA

http://www.crd.york.ac.uk/PanHTA/ResultsPage.asp

Canadian and International HTA

March 4, 2019

Search strategy:

"hospital at home" OR "hospitalization at home" OR "hospitalisation at home" OR "home hospitalization" OR "home hospitalizations" OR "home hospitalisation" OR "home hospitalisations"

8 results

8. International Clinical Trials Registry Platform (ICTRP) - WHO

http://apps.who.int/trialsearch/default.aspx

March 4, 2019 Search strategy: hospital at home OR home hospitalization OR home hospitalisation OR home hospital 92 results (98 trials)

9. ClinicalTrials.gov

https://clinicaltrials.gov/

March 4, 2019 Search strategy: "hospital at home" OR "home hospitalization" OR "home hospitalisation" OR "home hospital" OR (home AND hospital) 115 results

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Outcome definitions

Mortality: Mortality was defined as the total number of deaths recorded at the available time points for each study.

Readmission: Readmission was defined as the number of patients who were admitted (HaH) or readmitted (in-hospital group) to the hospital at the available time points of each study. All-cause readmissions were considered, except for one study that reported readmissions due only to the disease of the population (Chronic Heart Failure, CHF)(Mendoza et al. 2009).

Length of treatment: Length of treatment was defined as the number of days in HaH care for the experimental group and the number of in-hospital days at the index admission for the control group.

Long-term care admission: Admission to long-term care was defined as the number of patients admitted to long-term care or institutionalized at the available time points.

Anxiety and depression: Anxiety and depression was defined as the change in depression and/or anxiety scores from baseline to the available time points.

Quality-of-life: Quality-of-life was defined as the change in quality-of-life scores from baseline to the available time points.

Patients' satisfaction: Patients' satisfaction was defined as the overall patient satisfaction scores or proportion of patients satisfied with their care at the available time points.

Caregivers' stress: Caregivers' stress was defined as the overall score on scale of caregiver.

Morbidity due to hospitalization: Morbidity due to hospitalization was defined as the number of adverse events, which included urinary tract infections (including catheter associated), falls, and standard hospital-acquired conditions at the available time points.

Cognitive status: Cognitive status was defined as the change in a cognitive status score at the available time points.

Nutrition status: Nutrition status was defined as the change in a nutrition score at the available time points.

Functional status: Functional status was defined as the change in a functional status score at the available time points.

Neurological deficit: Neurological status was defined as the change in a neurological status score at the available time points.

Efforts to obtain more information and data

To clarify methods, interventions and outcome definitions from studies and include as many studies as possible (and reduce heterogeneity), as well as to clarify or obtain more data, we contacted authors by email or system-based communication, up to three times, following methods described in Godard-Sebillotte et al. (2018). If we did not obtain this information, the data was considered incomplete and not included in our analyses.

We contacted the authors of five studies for additional information or data. We received clarifications and unpublished data on length of treatment in the HaH group for one study (Echevarria et al. 2018).

eAppendix 2. Data Transformation

Outcome	Study	Data origin and/or transformation done
		before meta-analysis
Readmission	Mendoza et al. (2009)	Number of observations was considered at
	Ricauda et al. (2008)	baseline in order to account for readmissions
	Echevarria et al. (2018)	from the beginning of the study until follow-
	Tibaldi et al. (2009)	up.
	Davies et al. (2000)	
	Hernandez et al. (2002)	

eTable 1. Justification for Narrative Synthesis

Outcome	Justification
Anxiety and	Two studies report using Geriatric Depression Scale: one reports
depression	mean, other reports median
Caregivers' stress	Two studies report on Relative Stress Scale: one reports the change in
	score and standard deviation, other reports final scores and standard
	deviation
Functional status	Two studies use the Activities of Daily Living: one uses median, the
	other uses mean
Quality-of-life	Two studies report on St. George's Respiratory Questionnaire: one
	has no standard deviation or confidence interval
Morbidity due to	Four studies reported different morbidities and adverse events that
hospitalization	were not comparable across studies

Original	RCT excluded	Justification	Results of	Accompanying
analysis		for exclusion	sensitivity analyses	forest plot in
				3
Suppl. 5,	Vianello et al. (2013)	Younger	RR 95%CI: 0.60,	Figure A: Forest
RR 95%CI:		population	1.15	analysis for
0.61, 1.15				mortality excluding the
				study with
				younger patients
	Hernandez et al. (2003);	Follow-up	RR 95%CI: 0.42,	Figure B: Forest
	Levine et al. (2009) ;	months	2.21	analysis for
	Mendoza et al. (2009);			mortality
	Ricauda et al. (2008);			excluding studies
	Ricauda et al. (2004)			with follow-up
				3-month
	Davies et al. (2000);	Follow-up	RR 95%CI: 0.59,	Figure C: Forest
	Hernandez et al. (2003);	period was	1.22	plot of sensitivity
	Vianello et al. (2013); Echevarria et al. (2018):	not 6 months		analysis for
	Levine et al. (2018);			excluding studies
	Mendoza et al. (2009)			with follow-up
				period other than
				6-month follow-
	Tibaldi et al. (2009):	Not COPD	RR 95%CI: 0.46.	Figure D: Forest
	Vianello et al. (2013);		1.36	plot of sensitivity
	Levine et al. (2018);			analysis for
	Mendoza et al. (2009); Ricauda et al. (2004)			mortality excluding studies
	Ricauda et al. (2004)			with patients
				other than those
				with chronic
				obstructive
				disorders
	Davies et al. (2000);	Not CHF	RR 95%CI: 0.39,	Figure E: Forest
	Hernandez et al. (2003);		1.98	plot of sensitivity
	Echevarria et al. (2013);			mortality

eTable 2. Justification for Sensitivity Analyses for Mortality

Levine et al. (2018);	excluding studies
Ricauda et al. (2008);	with patients
Ricauda et al. (2004)	other than chronic
	heart failure

Legend

COPD: Chronic obstructive pulmonary disorder; CHF: Chronic heart failure; SD: standard deviation; RR: Risk Ratio; MD: Mean difference; CI: Confidence interval. *significance level changed from statistically significant (original analysis) to not statistically significant (sensitivity analysis).

eFigure 1. Forest Plots for Mortality Sensitivity Analyses

Figure A: Forest plot of sensitivity analysis for mortality excluding the study with younger patients

	Experim	nental	C	ontrol								
Study	Events	Total	Events	Total		Risk R	atio		RR	9	5%-CI	Weight
Mendoza et al. 2009	2	37	3	34		• : -			0.61	[0.11;	3.45]	3.5%
Ricauda et al. 2008	9	52	12	52		-	-0		0.75	[0.35;	1.63]	17.5%
Echevarria et al. 2018	1	60	1	58	i.				0.97	[0.06;	15.09]	1.4%
Ricauda et al. 2004	21	60	24	60					0.87	[0.55;	1.39]	48.9%
Tibaldi et al. 2009	7	48	8	53					0.97	[0.38;	2.46]	12.0%
Levine et al. 2018	0	9	0	11						3		0.0%
Davies et al. 2000	9	100	4	50					1.12	[0.36;	3.47]	8.3%
Hernandez et al. 2002	5	121	7	101			-		0.60	[0.20;	1.82]	8.4%
Random effects model		487		419		4			0.84	[0.61;	1.17]	100.0%
Heterogeneity: $l^2 = 00^{12} = 2^{12} = 0.00^{12}$				—		1			[0.55,	1.23]		
neterogeneity. 7 – 076, t	- 0, μ - 0	.55			0.1	0.5 1	2	10				

	Experim	nental	C	ontrol								
Study	Events	Total	Events	Total		Risk	Differ	ence		RD	95%-CI	Weight
Mendoza et al. 2009	2	37	3	34	c s	8	*			-0.03	[-0.15; 0.09]	6.5%
Ricauda et al. 2008	9	52	12	52	-			_		-0.06	[-0.21; 0.10]	3.9%
Echevarria et al. 2018	1	60	1	58				•		-0.00	[-0.05; 0.05]	42.9%
Ricauda et al. 2004	21	60	24	60			•			-0.05	[-0.22; 0.12]	3.1%
Tibaldi et al. 2009	7	48	8	53		<u>22</u>	- 10			-0.01	[-0.14; 0.13]	4.8%
Levine et al. 2018	0	9	0	11	_				-	0.00	[-0.18; 0.18]	3.0%
Davies et al. 2000	9	100	4	50		12-	- i m			0.01	[-0.08; 0.10]	10.6%
Hernandez et al. 2002	5	121	7	101		-				-0.03	[-0.09; 0.03]	25.1%
Random effects model Prediction interval		487		419						-0.01	[-0.04; 0.02] [-0.05; 0.03]	100.0%
Heterogeneity: $I^2 = 0\%$, τ^2	= 0, p = 0	.97			1	1	1	1			ROA - 1998-1999-1999-1999	
					-0.2	-0.1	0	0.1	0.2			

Legend

Figure B: Forest plot of sensitivity analysis for mortality excluding studies with follow-up period other than 3-month

	Experin	nental	Co	ontrol									
Study	Events	Total	Events	Total		Ri	sk Ra	tio		RR	9	95%-CI	Weight
Echevarria et al. 2018	1	60	1	58		1	+			0.97	[0.06;	15.09]	9.3%
Davies et al. 2000	9	100	4	50			-	-0.		1.12	[0.36:	3.47]	54.9%
Vianello et al. 2013	3	26	4	27		-	-	1		0.78	[0.19;	3.15]	35.8%
Random effects model Prediction interval		186		135			+			0.97	[0.42; [0.00; 2	2.24] 219.43]	100.0%
Heterogeneity: $I^2 = 0\%$, τ^2	= 0, p = 0	.92				1	1		-1				
					0.01	0.1	1	10	100				
	Experir	nental	с	ontrol									
Study	Events	Total	Events	Total		Risk	Diffe	rence		RD	9	5%-CI	Weight
Echevarria et al. 2018	1	60	1	58			-	2		-0.00	[-0.05	; 0.05]	76.2%
Davies et al. 2000	9	100	4	50		-	-			0.01	[-0.08	; 0.10]	18.8%
Vianello et al. 2013	3	26	4	27	-		•			-0.03	[-0.21	; 0.15]	5.0%
Random effects mode Prediction interval	I	186		135			4			-0.00	[-0.04	; 0.04] : 0.261	100.0%
Heterogeneity: $l^2 = 0\% \tau^2$	= 0. p = 0	0.92			Г	1	1	1				,	
	0110				-0.2	2 -0.1	0	0.1	0.2				

Legend

HaH: Hospital at Home; RR: Risk Ratio; RD: Risk Difference; CI: Confidence interval

 τ^2 : variance between studies; I^2 : proportion of variance due to heterogeneity between studies. Total number of observations used was sample size at baseline. Figure C: Forest plot of sensitivity analysis for mortality excluding studies with follow-up period other than 6-month follow-up

	Experin	nental	C	ontrol				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Ricauda et al. 2008	9	52	12	52		0.75	[0.35; 1.63]	22.4%
Ricauda et al. 2004	21	60	24	60		0.87	[0.55; 1.39]	62.3%
Tibaldi et al. 2009	7	48	8	53		0.97	[0.38; 2.46]	15.3%
Random effects model	l.	160		165	4	0.86	[0.60; 1.24]	100.0%
Prediction interval					•		[0.08; 9.21]	
Heterogeneity: $I^2 = 0\%$, τ^2	= 0, p = 0	.91			I I I I			
					0.1 0.5 1 2 1	0		
Study	Experim Events	ental Total	Co Events	ontrol Total	Risk Difference	RD	95%-CI	Weight
oluuy		. o tai	Lionio	. orai				rieigin
Ricauda et al. 2008	9	52	12	52		-0.06	[-0.21; 0.10]	33.1%
Ricauda et al. 2004	21	60	24	60		-0.05	[-0.22; 0.12]	26.2%
Tibaldi et al. 2009	7	48	8	53		-0.01	[-0.14; 0.13]	40.7%
Random effects model Prediction interval		160		165		-0.03	[-0.12; 0.05] [-0.61: 0.54]	100.0%
Heterogeneity: $l^2 = 0\%$. τ^2	= 0, p = 0	86				٦	,	
	-, p			-0	.6 -0.4 -0.2 0 0.2 0.4 0).6		

Legend

Figure D: Forest plot of sensitivity analysis for mortality excluding studies with patients other than those with chronic obstructive pulmonary disorders

	Experin	nental	С	ontrol							
Study	Events	Total	Events	Total		Risk	Ratio		RR	95%-CI	Weight
Ricauda et al. 2008	9	52	12	52			<u> </u>		0.75	[0.35; 1.63]	49.2%
Echevarria et al. 2018	1	60	1	58	<u>81</u>		(0.97	[0.06; 15.09]	3.9%
Davies et al. 2000	9	100	4	50					1.12	[0.36; 3.47]	23.2%
Hernandez et al. 2002	5	121	7	101					0.60	[0.20; 1.82]	23.7%
Random effects model		333		261		\sim	>	i	0.79	[0.46; 1.36]	100.0%
Prediction interval					_					[0.24; 2.60]	
Heterogeneity: $I^2 = 0\%$, τ^2	= 0, p = 0	.88			1		1 1	1			
					0.1	0.5	12	10			
	Experim	ental	Co	ontrol							
Study	Events	Total	Events	Total		Risk Dif	ference		RD	95%-CI	Weight
Ricauda et al. 2008	9	52	12	52					0.06	[-0.21; 0.10]	4.8%
Echevarria et al. 2018	1	60	1	58		-	-		0.00	[-0.05; 0.05]	52.0%
Davies et al. 2000	9	100	4	50					0.01	[-0.08; 0.10]	12.8%
Hernandez et al. 2002	5	121	7	101				-	0.03	[-0.09; 0.03]	30.4%
Random effects model		333		261			>	-	0.01	[-0.04; 0.02]	100.0%
Prediction interval					×	-				[-0.08; 0.06]	
Heterogeneity: $I^2 = 0\%$, τ^2	= 0, p = 0	.73						7			
				-(0.2	-0.1 (0.1	0.2			

Legend

Figure E: Forest plot of sensitivity analysis for mortality excluding studies with patients other than chronic heart failure

	Experin	nental	C	ontrol								
Study	Events	Total	Events	Total		Ris	k Ra	tio		RR	95%-CI	Weight
Mendoza et al., 2009	2	37	3	34 -		3				0.61	[0.11; 3.45]	22.7%
Tibaldi et al., 2009	7	48	8	53		-				0.97	[0.38; 2.46]	77.3%
Random effects model Heterogeneity: $l^2 = 0\%$, τ^2	= 0, p = 0	85		87	ſ	-	+	-	_	0.87	[0.38; 1.98]	100.0%
					0.2	0.5	1	2	5			
	20											
Church	Experim	ental	Co	ntrol	1						05% 01	Mr. :
Study	Events	lotal	Events	lotal	3	KISK D	ITTER	ence		RD	95%-01	weight
Mendoza et al., 2009	2	37	3	34 —			+			-0.03	[-0.15; 0.09]	57.2%
Tibaldi et al., 2009	7	48	8	53 -			1			-0.01	[-0.14; 0.13]	42.8%
Random effects model		85		87	_		-	_		-0.02	[-0.11; 0.07]	100.0%
Heterogeneity: $I^2 = 0\%$, $\tau^2 =$	= 0, <i>p</i> = 0.	74		0.1	F 0.4	0.05						
				-0.1	5-0.1	-0.05	0	0.05 ().1 0.1	CI		

Legend

Original analysis	RCT excluded	Justification for exclusion	Results of sensitivity analyses	Accompanying forest plot in supplemental file 3
Suppl. 5, Figure B RR 95%CI: 0.55, 0.94	Tibaldi et al. (2009); Levine et al. (2018); Mendoza et al. (2009)	Not COPD	RR 95%CI: 0.55, 1.09*	eFigure 2. Forest Plots for Readmission Sensitivity Analyses Figure F: Forest plot of sensitivity analysis for readmission excluding studies with patients other than chronic obstructive pulmonary disorder
	Mendoza et al. (2009)	Considered only readmission due to CHF	RR 95%CI: 0.53, 0.98	Figure G: Forest plot of sensitivity analysis for readmission excluding studies with patients other than all- cause readmission
	Davies et al. (2000); Hernandez et al. (2003); Echevarria et al. (2018); Levine et al. (2018); Mendoza et al. (2009)	Follow-up period not 6 months	RR 95%CI: 0.34, 0.72	Figure H: Forest plot of sensitivity analysis for readmission excluding studies with a follow-up period other than 6 month
	Hernandez et al. (2003); Tibaldi et al. (2009); Levine et al. (2018); Mendoza et al. (2009); Ricauda et al. (2008)	Follow-up period not 3 months	RR 95%CI: 0.71, 1.37*	Figure I: Forest plot of sensitivity analysis for readmission excluding studies with a follow-up period other than 3 months

|--|

Levine et al. (2018)	Small sample	RR 95%CI: 0.58,	Figure J: Forest
	size and large	0.96	plot of sensitivity
	variance		analysis for
			readmission
			excluding the
			study with a small
			sample sizeFigure
			K: Forest plot of
			sensitivity
			analysis for
			readmission
			excluding studies
			with patients
			other than those
			with chronic heart
			failure
Davies et al. (2000);	Not CHF	RR 95%CI: 0.42,	Figure K: Forest
Hernandez et al. (2003);		1.10*	plot of sensitivity
Echevarria et al. (2018);			analysis for
Levine et al. (2018);			readmission
Ricauda et al. (2008)			excluding studies
			with patients
			other than those
			with chronic heart
			failure

Legend

RCT: Randomized Controlled Trial; COPD: Chronic Obstructive Pulmonary Disease; CHF: Chronic Heart Failure; RR: Risk Ratio; RD: Risk Difference; CI: Confidence interval. *significance level changed from statistically significant (original analysis) to not statistically significant (sensitivity analysis).

eFigure 2. Forest Plots for Readmission Sensitivity Analyses

Figure F: Forest plot of sensitivity analysis for readmission excluding studies with patients other than chronic obstructive pulmonary disorder



Legend

HaH: Hospital at Home; RR: Risk Ratio; RD: Risk Difference; CI: Confidence interval

 τ^2 : variance between studies; I^2 : proportion of variance due to heterogeneity between studies. Total number of observations used was sample size at baseline. Figure G: Forest plot of sensitivity analysis for readmission excluding studies with patients other than all-cause readmission

	Experim	nental	C	ontrol							
Study	Events	Total	Events	Total		Risk R	latio		RR	95%-CI	Weight
Ricauda et al. 2008	17	52	34	52		- • :			0.50	[0.32; 0.77]	22.6%
Echevarria et al. 2018	22	60	23	58			-		0.92	[0.58; 1.46]	21.6%
Tibaldi et al. 2009	8	48	18	53		- <u></u>			0.49	[0.24; 1.02]	12.2%
Levine et al. 2018	1	9	4	11 -			<u></u>		0.31	[0.04; 2.27]	2.2%
Davies et al. 2000	37	100	17	50		-	+		1.09	[0.68; 1.73]	21.4%
Hernandez et al. 2002	23	121	26	101		-			0.74	[0.45; 1.21]	20.0%
Random effects model Prediction interval	2 0 0574	390	10	325	_	÷	-		0.72	[0.53; 0.98] [0.33; 1.59]	100.0%
Heterogeneity: $I^2 = 42\%$, τ	- = 0.0571	p = 0	.13								
					0.1	0.5 1	2	10			

	Experin	nental	C	ontrol				
Study	Events	Total	Events	Total	Risk Difference	RD	95%-CI	Weight
Ricauda et al. 2008	17	52	34	52	— <u>—</u>	-0.33	[-0.51; -0.15]	16.3%
Echevarria et al. 2018	22	60	23	58		-0.03	[-0.21; 0.15]	16.9%
Tibaldi et al. 2009	8	48	18	53		-0.17	[-0.34; -0.01]	17.8%
Levine et al. 2018	1	9	4	11 -		-0.25	[-0.60; 0.10]	6.9%
Davies et al. 2000	37	100	17	50		0.03	[-0.13; 0.19]	18.2%
Hernandez et al. 2002	23	121	26	101		-0.07	[-0.18; 0.04]	23.8%
Random effects model		390		325	\diamond	-0.12	[-0.22; -0.01]	100.0%
Prediction interval				in an			[-0.41; 0.18]	
Heterogeneity: $I^2 = 54\%$, τ	² = 0.0087	7, p = 0	0.05					
				-0	.6 -0.4 -0.2 0 0.2 0.4	0.6		

Legend

Figure H: Forest plot of sensitivity analysis for readmission excluding studies with a follow-up period other than 6 months

	Experim	nental	Co	ontrol				
Study	Events	Total	Events	Total	Risk Difference	RD	95%-CI	Weight
Ricauda et al. 2008	17	52	34	52 -		-0.33	[-0.51; -0.15]	47.0%
Tibaldi et al. 2009	8	48	18	53		-0.17	[-0.34; -0.01]	53.0%
Random effects model Heterogeneity: $l^2 = 35\%$, τ	² = 0.0041	100 I, p = 0	.22	105		-0.25	[-0.40; -0.09]	100.0%
					-0.4 -0.2 0 0.2 0.4			
	Experi	menta	ı c	ontrol				
Study	Events	s Tota	Events	Total	Risk Ratio	RR	95%-CI	Weight
Ricauda et al. 2008	17	52	2 34	52		0.50	[0.32; 0.77]	73.9%
Tibaldi et al. 2009	8	3 48	18	53	*	0.49	[0.24; 1.02]	26.1%
Random effects mode	 	100)	105		0.50	[0.34; 0.72]	100.0%
Heterogeneity: $I^{-} = 0\%$, t	= 0, <i>p</i> =	0.97			0.5 1 2			

Legend

Figure I: Forest plot of sensitivity analysis for readmission excluding studies with a follow-up period other than 3 months

	Experie	mental	C	ontrol				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Echevarria 2018	22	60	23	58 -		0.92	[0.58; 1.46]	50.4%
Davies 2000	37	100	17	50		- 1.09	[0.68; 1.73]	49.6%
Random effects model Heterogeneity: $I^2 = 0\%$, τ^2	= 0, p =	160 0.62		108		1.00	[0.72; 1.39]	100.0%
					0.75 1 1.5			
	Experin	nental	Co	ontrol				
Study	Events	Total	Events	Total	Risk Difference	RD	95%-CI	Weight
Echevarria 2018	22	60	23	58 —		-0.03	[-0.21; 0.15]	46.0%
Davies 2000	37	100	17	50		0.03	[-0.13; 0.19]	54.0%
Random effects model Heterogeneity: $I^2 = 0\%$, $\tau^2 =$	= 0, p = 0	160		108		0.00	[-0.12; 0.12]	100.0%
				-0.2	-0.1 0 0.1 0	.2		

Legend

Figure J: Forest plot of sensitivity analysis for readmission excluding the study with a small sample size

	Experin	nental	C	ontrol				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Mendoza et al. 2009	15	37	17	34		0.81	[0.48; 1.36]	16.2%
Ricauda et al. 2008	17	52	34	52		0.50	[0.32; 0.77]	19.8%
Echevarria et al. 2018	22	60	23	58		0.92	[0.58; 1.46]	18.7%
Tibaldi et al. 2009	8	48	18	53 -		0.49	[0.24; 1.02]	9.7%
Davies et al. 2000	37	100	17	50		1.09	[0.68; 1.73]	18.5%
Hernandez et al. 2002	23	121	26	101		0.74	[0.45; 1.21]	17.1%
Random effects model Prediction interval Heterogeneity: $l^2 = 37\%$, τ	² = 0.0385	418 5, p = 0	.16	348		0.75	[0.58; 0.97] [0.39; 1.44]	100.0%
					0.5 1 2			

	Experin	nental	C	ontrol				
Study	Events	Total	Events	Total	Risk Difference	RD	95%-CI	Weight
Mendoza et al. 2009	15	37	17	34		-0.09	[-0.33; 0.14]	11.4%
Ricauda et al. 2008	17	52	34	52		-0.33	[-0.51; -0.15]	15.3%
Echevarria et al. 2018	22	60	23	58		-0.03	[-0.21; 0.15]	15.9%
Tibaldi et al. 2009	8	48	18	53		-0.17	[-0.34; -0.01]	16.8%
Davies et al. 2000	37	100	17	50	- <u>-</u>	0.03	[-0.13; 0.19]	17.2%
Hernandez et al. 2002	23	121	26	101		-0.07	[-0.18; 0.04]	23.3%
Random effects model		418		348	-	-0.11	[-0.20; -0.01]	100.0%
Prediction interval							[-0.38; 0.17]	
Heterogeneity: $I^2 = 51\%$, τ	² = 0.007 ⁴	1, p = 0	.07					
					-0.4 -0.2 0 0.2 0.4			

Legend

Figure K: Forest plot of sensitivity analysis for readmission excluding studies with patients other than those with chronic heart failure

	Experim	nental	C	ontrol				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Mendoza et al. 2009	15	37	17	34		0.81	[0.48; 1.36]	63.6%
Tibaldi et al. 2009	8	48	18	53		0.49	[0.24; 1.02]	36.4%
Random effects model Heterogeneity: $I^2 = 20\%$, τ	² = 0.0269	85 9, p = 0	.26	87	0.5 1 2	0.68	[0.42; 1.10]	100.0%
Study	Experin	nental Total	Co	ontrol	Pick Difference	PD	95%-0	1 Woight
Study	Lvents	Total	Lvents	Total	Risk Difference	RD	3376-0	a weight
Mendoza et al. 2009	15	37	17	34		-0.09	[-0.33; 0.14	33.9%
Tibaldi et al. 2009	8	48	18	53		-0.17	[-0.34; -0.01] 66.1%
Random effects model Heterogeneity: $l^2 = 0\%$, τ^2	= 0, <i>p</i> = 0	85 .58		87		-0.15	[-0.28; -0.01] 100.0%
					-0.3 -0.2 -0.1 0 0.1 0.2 0.3			

Legend

Original	RCT	Justification	Results of sensitivity	Accompanying forest
analysis	excluded	for	analyses	plot in supplemental
		exclusion		file 3
Suppl. 5,	Ricauda et	Not CHF	MD 95%CI: -0.08,	Figure L: Forest plot of
Figure C	al. (2008);		11.85*	sensitivity analysis for
RR	Ricauda et			length of treatment
95%CI:	al. (2004);			excluding studies with
1.91,	Echevarria			patients other than
8.98	et al. (2018)			chronic heart failure
	Mendoza et	Follow-up	MD 95%CI: 3.63, 13.91	Figure M: Forest plot of
	al. (2009)	period not 6		sensitivity analysis for
	Echevarria	months		length of treatment
	et al. (2018)			excluding studies with
				follow-up period other
				than 6 months
	Ricauda et	Not COPD	MD 95%CI: -1.18; 5.84*	Figure N: Forest plot of
	al. (2004);			sensitivity analysis for
	Tibaldi et al.			length of treatment
	(2009);			excluding studies with
	Mendoza et			patients other than
	al. (2009)			chronic obstructive
				pulmonary disorder

eTable 4. Justification of Sensitivity Analyses for Length of Treatment

Legend

RCT: Randomized Controlled Trial; CHF: Chronic heart failure; MD: Mean difference; CI: Confidence interval; RR: Risk Ratio; COPD, Chronic obstructive pulmonary disorder. *significance level changed from statistically significant (original analysis) to not statistically significant (sensitivity analysis).

eFigure 3. Forest Plots for Length of Treatment Sensitivity Analyses

Figure L: Forest plot of sensitivity analysis for length of treatment excluding studies with patients other than chronic heart failure



Legend

Figure M: Forest plot of sensitivity analysis for length of treatment excluding studies with follow-up period other than 6 months

		Expe	rimental			Control										
Study	Total	Mean	SD	Total	Mean	SD		N	lean	Diffe	rend	e		MD	95%-CI	Weight
Ricauda et al. 2008	52	15.50	9.5000	52	11.00	7.9000								4.50	[1.14; 7.86]	39.1%
Ricauda et al. 2004	60	38.10	28.6000	60	22.50	11.5000				÷				15.60	[7.80; 23.40]	22.6%
Tibaldi et al. 2009	48	20.70	6.9000	53	11.60	10.7000								9.10	[5.55; 12.65]	38.3%
Random effects model Prediction interval	160			165				_		<	>		_	8.77	[3.63; 13.91] [-50.24: 67.77]	100.0%
Heterogeneity: $l^2 = 75\%$, r	$^{2} = 14.6$	5788. p	= 0.02				_	1		1		1			[
							-60	-40	-20	0	20	40	60			

Legend

Figure N: Forest plot of sensitivity analysis for length of treatment excluding studies with patients other than chronic obstructive pulmonary disorder

		Experi	imental			Control					
Study	Total	Mean	SD	Total	Mean	SD	Me	an Differei	nce ME	95%-CI	Weight
Ricauda et al. 2008	52	15.50	9.5000	52	11.00	7.9000		1	4.50	[1.14; 7.86]	40.6%
Echevarria et al. 2018	60	4.95	2.1500	58	4.10	4.6000		-	0.85	5 [-0.44; 2.14]	59.4%
Random effects model Heterogeneity: $I^2 = 75\%$, τ	112 ² = 4.97	772, p =	0.05	110			·	-+	2.33	8 [-1.18; 5.85]	100.0%
							-5	0	5		

Legend

eAppendix 3. Summary of Findings Table

A) summary of meta-analyses findings

Author	Year	Country	Risk of bias (all studies had performance bias)	Chronic diseases	Nurse home visit	physician home visit	Length of follow-up (months)		HaH mean age	HaH female %	Control n	Control mean age	Control female %	Mortality RR 1	Mortality 95%CI	Readmission RF	Readmission 95%Cl	Lot M	D LoT 95%CI	LTC RF	LTC 95%CI
Hernandez et al.	2003	Spain	potential detection bias and potential reporting bias	COPD	yes	no	2	121	71	3	101	71	3	0,6 0	0.20-1.82	0,74	0.58-1.46				
Vianello et al.	2013	Italy	potential selection bias and potential detection bias	Neuromuscular disease	yes	no	3	26	45	35	27	47	11	0,78 (0.19-3.15						
Echevarria et al.	2018	England	none other than performance bias	COPD	yes	no	3	60	71	53	58	69	52	0,97 (0.06-15.09			0,8	5 -0.44-2.14		
Davies et al.	2000	England	detection bias and potential selection bias	COPD	yes	no	3	100	70	55	50	70	40	1,12 (0.36-3.47	1,09	0.68-1.73				
Levine et al.	2018	United States	detection bias and potential reporting bias	CHF, COPD, or asthma	yes	yes	1	9	65*	22	11	60*	73			0,31	0.04-2.27				
Ricauda et al.	2008	Italy	none other than performance bias	COPD	yes	yes	6	52	80	44	52	79	25	0,75 (0.35-1.63	0,5	0.32-0.77	4,	5 1.14-7.86	0,06	0.00-1.33
Tibaldi et al.	2009	Italy	potential reporting bias	CHF	yes	yes	6	48	82	54	53	80	43	0,97 (0.38-2.46	0,49	024-1.02	9,	1 5.55-12.65	0,06	0.00-1.09
Mendoza et al.	2009	Spain	potential selection bias	CHF	yes	yes	12	37	78	54	34	80	29	0,61 (0.11-3.45	0,81	0.48-1.36		3 0.79-5.21		
Ricauda et al.	2004	Italy	potential selection bias	Ischemic Stroke	yes	yes	6	60	83*	62	60	80*	48	0,87 (0.55-1.39			15,	6 7.80-23.40	0,5	0.05-5.37
mediar	1						3,0 5	2,0	71,0	53,0	52,0	71,0	40,0								
pooled results														0.84		0.74		5.4	5	0.16	
pooled 95%Cl														0.61-1.15		0.57-0.95		1.91-8.9	8	0.03-0.74	
pooled heterogeneity I2	2													0%		31%		87	%	0%	

B) summary of narrative synthesis findings

Author	Year	Country	Risk of bias (all studies had performance bias)	Chronic diseases	Nurse home visit	physician home visit	Length of follow-up (months)		HaH mean age	HaH female %	Control n	Control mean age	Control female %	Cognitive status	Nutrition	Patient satisfaction	Morbidity due to hospitalization	Stress of caregiver	Anxiety and depression	Quality of life	Functional status	Neurological deficits
Hernandez et al.	2003	Spain	potential detection bias and potential reporting bias	COPD	yes	no	2 1	121	71	3	101	71	3			HaH > control				HaH > control		
Vianello et al.	2013	Italy	potential selection bias and potential detection bias	Neuromuscular disease	yes	no	3	26	45	35	27	47	11									
Echevarria et al.	2018	England	none other than performance bias	COPD	yes	no	3	60	71	53	58	69	52						HaH > control	HaH > control		
Davies et al.	2000	England	detection bias and potential selection bias	COPD	yes	no	3 1	100	70	55	50	70	40							No difference		
Levine et al.	2018	United States	detection bias and potential reporting bias	CHF, COPD, or asthma	yes	yes	1	9	65*	22	11	60*	73			No difference	HaH > control					
Ricauda et al.	2008	Italy	none other than performance bias	COPD	yes	yes	6	52	80	44	52	79	25	No difference	No difference	No difference	No difference	No difference	HaH > control	HaH > control	No difference	
Tibaldi et al.	2009	Italy	potential reporting bias	CHF	yes	yes	6	48	82	54	53	80	43				HaH > control	HaH > control				
Mendoza et al.	2009	Spain	potential selection bias	CHF	yes	yes	12	37	78	54	34	80	29							No difference	No difference	
Ricauda et al.	2004	Italy	potential selection bias	Ischemic Stroke	yes	yes	6	60	83*	62	60	80*	48				No difference		HaH > control		No difference	No difference
mediar	1						3,0 5	2,0 7	71,0 5	53,0 !	52,0	71,0	40,0									
pooled results																Mixed	Mixed	Mixed	HaH > control	Mixed	No difference	No difference

Legend: This table depicts an overview of each study's results, including patients and intervention characteristics, design and risk of bias appraisal, as well as the pooled average, median, relative risk (RR) or mean difference (MD), 95% confidence intervals (CI) and heterogeneity (I2) of the overall meta-analyses findings (part A) and the pooled results of the overall narrative synthesis findings (part B) of our systematic review. COPD stands for chronic obstructive. pulmonary disease, CHF stands for Chronic Heart Failure, HaH stands for Hosptial-at-home, LoT stands for length of treatment, and LTC stands for long-term care admission, finally 'HaH > control' signifies that the outcome under study is indicative of better health in HaH group than the in-hospital control group. The asterisks * denotes that median age was reported and is excluded from overall patient age median.

eAppendix 4. Forest Plots of Original Meta-Analyses

Figure A: Forest plots for mortality analyses in the HaH and in-hospital groups



Study	Experim Events	iental Total	Co Events	ontrol Total		Risk	Differe	ence		RD	95%-CI	Weight
Mendoza et al. 2009	2	37	3	34			*	-		-0.03	[-0.15; 0.09]	6.3%
Ricauda et al. 2008	9	52	12	52	-					-0.06	[-0.21; 0.10]	3.8%
Echevarria et al. 2018	1	60	1	58						-0.00	[-0.05; 0.05]	41.7%
Ricauda et al. 2004	21	60	24	60	-		•			-0.05	[-0.22; 0.12]	3.0%
Tibaldi et al. 2009	7	48	8	53			-			-0.01	[-0.14; 0.13]	4.7%
Levine et al. 2018	0	9	0	11	_				-	0.00	[-0.18; 0.18]	2.9%
Davies et al. 2000	9	100	4	50		22				0.01	[-0.08; 0.10]	10.3%
Vianello et al. 2013	3	26	4	27	<u> </u>		•			-0.03	[-0.21; 0.15]	2.7%
Hernandez et al. 2002	5	121	7	101		<u></u>	-			-0.03	[-0.09; 0.03]	24.4%
Random effects model		513		446			\Leftrightarrow			-0.01	[-0.04; 0.02]	100.0%
Prediction interval Heterogeneity: $I^2 = 0\%$, τ^2	= 0, <i>p</i> = 0	.99			-0.2	-0.1	0	0.1	0.2		[-0.05; 0.02]	

Legend

Figure B: Forest plots for readmission in the HaH and in-hospital groups

	Experin	nental	C	ontrol						
Study	Events	Total	Events	Total		Risk Ra	tio	RR	95%-CI	Weight
Mendoza et al. 2009	15	37	17	34				0.81	[0.48; 1.36]	15.9%
Ricauda et al. 2008	17	52	34	52		- • ÷		0.50	[0.32; 0.77]	19.6%
Echevarria et al. 2018	22	60	23	58				0.92	[0.58; 1.46]	18.4%
Tibaldi et al. 2009	8	48	18	53				0.49	[0.24; 1.02]	9.4%
Levine et al. 2018	1	9	4	11 -		• :		0.31	[0.04; 2.27]	1.5%
Davies et al. 2000	37	100	17	50			<	1.09	[0.68; 1.73]	18.3%
Hernandez et al. 2002	23	121	26	101				0.74	[0.45; 1.21]	16.8%
Random effects model		427		359		\diamond		0.74	[0.57; 0.95]	100.0%
Prediction interval									[0.41; 1.32]	
Heterogeneity: $I^2 = 31\%$, τ	2 = 0.0350	p = 0	.19		1		1			
					0.1	0.5 1	2 10)		

	Experin	nental	C	ontrol				
Study	Events	Total	Events	Total	Risk Difference	RD	95%-CI	Weight
Mendoza et al. 2009	15	37	17	34		-0.09	[-0.33; 0.14]	10.6%
Ricauda et al. 2008	17	52	34	52	- <u>m</u> -i	-0.33	[-0.51; -0.15]	14.3%
Echevarria et al. 2018	22	60	23	58		-0.03	[-0.21; 0.15]	14.9%
Tibaldi et al. 2009	8	48	18	53		-0.17	[-0.34; -0.01]	15.9%
Levine et al. 2018	1	9	4	11 -		-0.25	[-0.60; 0.10]	5.6%
Davies et al. 2000	37	100	17	50	÷	0.03	[-0.13; 0.19]	16.2%
Hernandez et al. 2002	23	121	26	101		-0.07	[-0.18; 0.04]	22.4%
Random effects model		427		359	-	-0.11	[-0.20; -0.02]	100.0%
Prediction interval							[-0.35; 0.12]	
Heterogeneity: $I^2 = 45\%$, τ	² = 0.0064	4, p = 0	0.09	1	1 1 1 1 1			
				-0	.6 -0.4 -0.2 0 0.2 0.4	0.6		

Legend

Figure C: Forest plots for the length of treatment in the HaH and in-hospital groups

		Expe	rimental			Control								
Study	Total	Mean	SD	Total	Mean	SD		Mean	Differe	nce		MD	95%-CI	Weight
Mendoza et al. 2009	37	10.90	5.9000	34	7.90	3.0000			 ;			3.00	[0.79; 5.21]	23.1%
Ricauda et al. 2008	52	15.50	9.5000	52	11.00	7.9000			-	-		4.50	[1.14; 7.86]	20.7%
Ricauda et al. 2004	60	38.10	28.6000	60	22.50	11.5000					<u>⊢</u> 1	15.60	[7.80; 23.40]	11.4%
Tibaldi et al. 2009	48	20.70	6.9000	53	11.60	10.7000						9.10	[5.55; 12.65]	20.2%
Echevarria et al., 2018	60	4.95	2.1500	58	4.10	4.6000			- 戸日			0.85	[-0.44; 2.14]	24.6%
Random effects model	257			257					0	>		5.45	[1.91: 8.98]	100.0%
Prediction interval							_	-	-	-	-		[-7.30; 18.19]	
Heterogeneity: $I^2 = 87\%$, τ	² = 12.7	'834, p	< 0.01				1	1	Sec.	12.	n dian			
							-20	-10	0	10	20			

Legend

HaH: Hospital at Home; MD: Mean difference; CI: Confidence interval; SD: Standard deviation τ^2 : variance between studies; I^2 : proportion of variance due to heterogeneity between studies.

Figure D: Forest plots for number of long-term facility admissions in the HaH and in-hospital groups

	Experin	nental	Co	ontrol				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Tibaldi et al. 2009	0	48	8	53		0.06	[0.00; 1.09]	29.4%
Ricauda et al. 2008	0	52	6	52		0.08	[0.00; 1.33]	28.9%
Ricauda et al. 2004	1	60	2	60		0.50	[0.05; 5.37]	41.7%
Random effects mode Heterogeneity: $I^2 = 0\%$, τ	$p^2 = 0, p = 0$	160 .44		165		0.16	[0.03; 0.74]	100.0%
Study	Experime Events T	ntal otal E	Con	trol	Risk Difference	RD	95%-CI	Weight
								J
Tibaldi et al. 2009	0	48	8	53 -		-0.15	-0.25; -0.05]	29.8%
Ricauda et al. 2008	0	52	6	52		-0.12	-0.21; -0.02]	31.6%
Ricauda et al. 2004	1	60	2	60		-0.02	[-0.07; 0.04]	38.6%
Random effects model Heterogeneity: $I^2 = 76\%$, τ^2	= 0.0055, į	160 p = 0.0	2	165		-0.09 [-0.18; 0.01]	100.0%
					-0.2 -0.1 0 0.1 0.2			

Legend

eReferences

- Davies, L., M. Wilkinson, S. Bonner, P. M. Calverley, and R. M. Angus. 2000. "Hospital at home" versus hospital care in patients with exacerbations of chronic obstructive pulmonary disease: prospective randomised controlled trial', *BMJ*, 321: 1265-8.
- Echevarria, C., J. Gray, T. Hartley, J. Steer, J. Miller, A. J. Simpson, G. J. Gibson, and S. C. Bourke. 2018. 'Home treatment of COPD exacerbation selected by DECAF score: a non-inferiority, randomised controlled trial and economic evaluation', *Thorax*, 73: 713-22.
- Godard-Sebillotte, Claire, Mélanie Le Berre, Sathya Karunananthan, Quan Nha Hong, and Isabelle Vedel. 2018. 'A digital media strategy to obtain unpublished data for a systematic review yields a very high author response rate', *J Clin Epidemiol*, 104: 141-43.
- Hernandez, C., A. Casas, J. Escarrabill, J. Alonso, J. Puig-Junoy, E. Farrero, G. Vilagut, B. Collvinent, R. Rodriguez-Roisin, J. Roca, and Chronic project. 2003. 'Home hospitalisation of exacerbated chronic obstructive pulmonary disease patients', *Eur. Respir. J.*, 21: 58-67.
- Levine, D. M., K. Ouchi, B. Blanchfield, K. Diamond, A. Licurse, C. T. Pu, and J. L. Schnipper. 2018. 'Hospital-Level Care at Home for Acutely Ill Adults: a Pilot Randomized Controlled Trial', J Gen Intern Med, 33: 729-36.
- Mendoza, H., M. J. Martin, A. Garcia, F. Aros, F. Aizpuru, J. Regalado De Los Cobos, M. C. Bello, P. Lopetegui, and J. M. Cia. 2009. "Hospital at home' care model as an effective alternative in the management of decompensated chronic heart failure', *EurJ Heart Fail*, 11: 1208-13.
- Ricauda, N. A., M. Bo, M. Molaschi, M. Massaia, D. Salerno, D. Amati, V. Tibaldi, and F. Fabris. 2004. 'Home hospitalization service for acute uncomplicated first ischemic stroke in elderly patients: a randomized trial', *JAGS*, 52: 278-83.
- Ricauda, NA., V. Tibaldi, B. Leff, C. Scarafiotti, R. Marinello, M. Zanocchi, and M. Molaschi. 2008. 'Substitutive "hospital at home" versus inpatient care for elderly patients with exacerbations of chronic obstructive pulmonary disease: a prospective randomized, controlled trial', *J Am Geriatr Soc*, 56: 493-500.
- Tibaldi, V., G. Isaia, C. Scarafiotti, F. Gariglio, M. Zanocchi, M. Bo, S. Bergerone, and N. A. Ricauda. 2009. 'Hospital at home for elderly patients with acute decompensation of chronic heart failure: a prospective randomized controlled trial', *Arch Intern M*, 169: 1569-75.
- Vianello, A., F. Savoia, E. Pipitone, B. Nordio, G. Gallina, L. Paladini, A. Concas, G. Arcaro, F. Gallan, and E. Pegoraro. 2013. "Hospital at home" for neuromuscular disease patients with respiratory tract infection: a pilot study', *Respir Care*, 58: 2061-8.