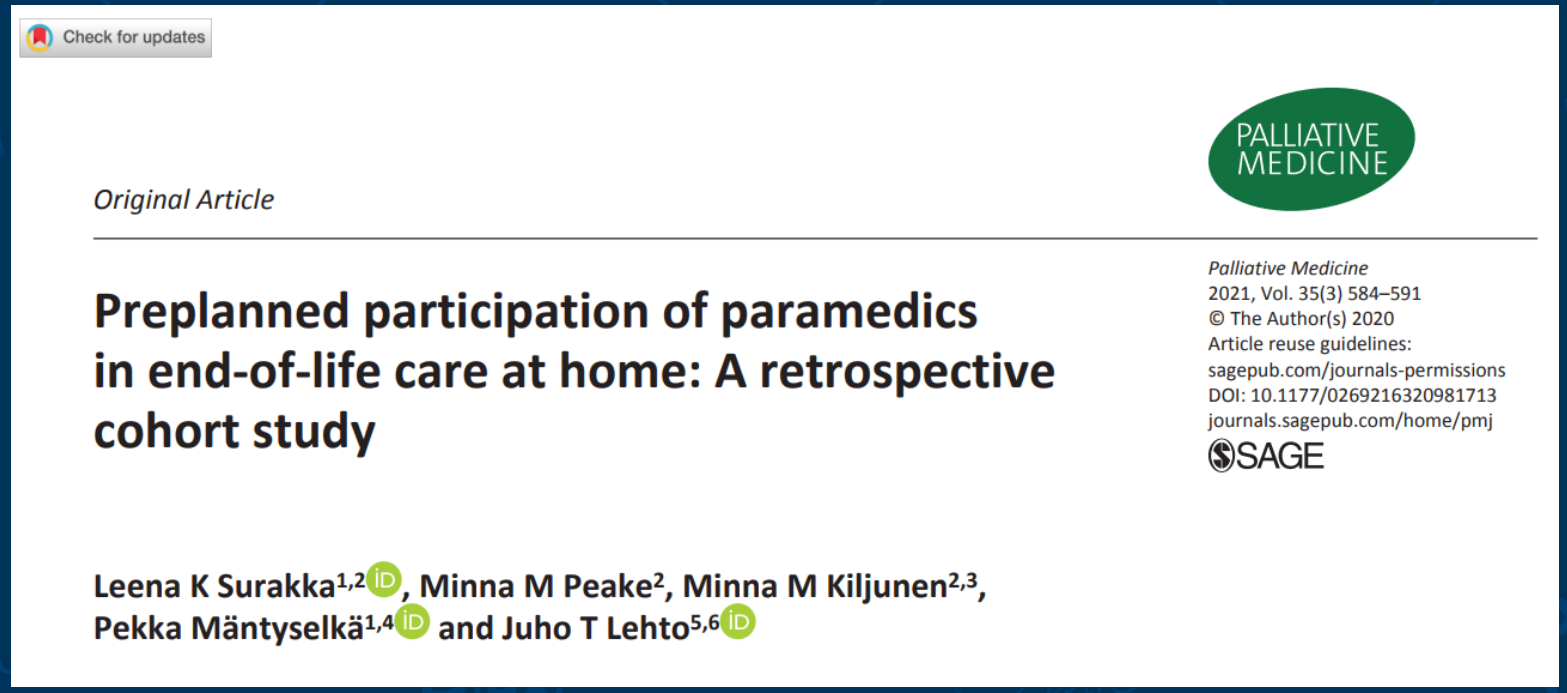
Ensihoito osana kotisaattohoitopotilaan palveluketjua



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Preplanned participation of paramedics in end-of-life care at home: A retrospective cohort study

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Ensihoito osana kotisaattohoitopotilaan palveluketjua?

Ensihoitajat kohtaavat kotisaattohoidossa olevia potilaita:

- **Ennalta arvaamattomat**, yllättävät **ensihoitotilanteet**
- Ennalta suunnitellut ja akuutin tarpeen **siirtokuljetukset** tukiosastoille ja muihin terveydenhuollon yksiköihin.

Ei yleensä pääsyä sairaskertomusjärjestelmiin → **Kohtaavat potilaan ilman luotettavia ennakkotietoja** hänen sairauden tilasta ja hoidon linjauksesta. **Huonokuntoinen potilas käynnistää** usein kuratiivisen hoidon piirissä olevia potilaita varten laadittuja **ensihoidon protokollia, jotka eivät palvele saattohoitopotilasta:**

- ”Turhat” tutkimukset
- Konsultaatiot
- Kuljetukset tukiosaston sijaan päivystykseen

Pohjois-Karjalassa laadittiin ensihoidolle v. 2015 kotisaattohoitopotilaiden hoitoa varten oma ohjeistuksensa eli **Kotisaattohoitopotilaan ensihoitoprotokolla, jonka tarkoituksena oli integroida ensihoito osaksi palliatiivisen potilaan hoitoketjua.**

Tutkimuksen tavoitteena oli arvioida kotisaattohoitopotilaan ensihoitoprotokollan toimintaa:

Original Article

PALLIATIVE MEDICINE

Palliative Medicine
1–8

DOI: 10.1177/0269216320981713
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Preplanned participation of paramedics in end-of-life care at home: A retrospective cohort study

Leena K Surakka[1,2], Minna M Peake[2], Minna M Kiljunen[2,3], Pekka Mäntyselkä[1,4] and Juho T Lehto[5,6]

Abstract

Background: Paramedics commonly face acute crises of patients in palliative care, but their involvement in end-of-life care is not planned systematically.

Aim: To evaluate a protocol for end-of-life care at home including pre-planned integration of paramedics and end-of-life care wards.

Design: Paramedic visits to patients in end-of-life care protocol were retrospectively studied.

Setting/Participants: All of the patients who had registered for the protocol between 1 March 2015 and 28 February 2017 in North Karelia, Finland, were included in this study.

Results: A total of 256 patients were registered for the protocol and 306 visits by paramedic were needed. A need for symptom control (38%) and transportation (29%) were the most common reasons for a visit. Paramedics visited 43% and 70% of the patients in areas with and without 24/7 palliative home care services, respectively ($p < 0.001$); while 58% of all the visits were done outside of office hours. Problems were resolved at home in 31% of the visits. The patient was transferred to a pre-planned end-of-life care ward and to an emergency department in 48% and 16% of the cases, respectively. More patients died in end-of-life care wards in areas without (54%) than with (33%) 24/7 home care services ($p = 0.001$).

Conclusions: Integration of paramedics into end-of-life care at home is reasonable especially in rural areas without 24/7 palliative care services and outside of office hours. The majority of patients can be managed at home or with the help of an end-of-life care ward without an emergency visit.

Keywords

Emergency medical services, home care services, end-of-life care, palliative care, paramedics

3/15 – 2/17 kotisaattohoitopotilaan ensihoitoprotokollaan ilmoitettiin 256 potilasta

Table 1. Patient characteristics.

Patients, *n*	252	
Age (years), median (range)	76.5	(28–102)
Male, *n* (%)	109	(43.4)
Diagnoses, *n* (%)		
Cancer	173	(68.7)
Cardiovascular diseases	30	(11.9)
Dementia	24	(9.5)
Others[a]	25	(9.9)
Area of living, *n* (%)		
24/7 palliative home care (urban area)	115	(45.6)
No 24/7 palliative home care (rural area)	137	(54.4)
Caregiver, *n* (%)		
Wife	71	(28.2)
Husband	46	(18.3)
Daughter/son	36	(14.4)
Staff of a nursing home	69	(27.4)
Living alone, without a designated caregiver	21	(8.3)
Other or missing	9	(3.5)
Survival (days), median (IQR)[b]	23	(8–61)

IQR: inter-quartile range.
[a]Neurodegenerative diseases (*n* = 8), liver or other gastrointestinal track diseases (*n* = 8), congenital diseases (*n* = 5), haematological diseases (*n* = 2), respiratory diseases (*n* = 1) and polyarthrosis (*n* = 1).
[b]Five patients were still alive at the end of the follow-up and one patient was lost from the follow up after travelling abroad.

Table 2. Reasons for paramedic visits, days in hospital and place of death among patients receiving end-of-life care in the areas with 24/7 palliative home care services (urban) and without 24/7 palliative home care services (rural).

	All patients		Patients in urban areas		Patients in rural areas		*p*-value[a]
Patients, *n*	252		115		137		
Age (years), Median (range)	76.5	(28–102)	80.0	(29–99)	75.0	(27–102)	0.118
Paramedic visits, *n*	306		97		209		
Patients needing paramedic visits, *n* (%)	145	(57.5)	49	(42.6)	96	(70.1)	<0.001
Visits/patient, Mean (SD)	1.21	(2.31)	0.88	(1.523)	1.50	(2.776)	
Median (IQR)	1	(0–1)	0	(0–1)	1	(0–2)	<0.001
Time spent with a patient, Mean (SD)	0:45	(0:29)	0:41	(0:32)	0:46	(0:28)	
Median (IQR)	0:39	(0:26–0:58)	0:34	(0:26–0:45)	0:42	(0:26–1:02)	0.051
Reason for visit, *n* (% of visits)							
Symptom control	116	(37.9)	30	(30.9)	87	(41.6)	0.073
Pain	42	(13.7)	10	(10.3)	32	(15.4)	0.237
Respiratory symptoms	37	(12.1)	7	(7.2)	30	(14.4)	0.075
Neuropsychiatric symptoms	10	(3.3)	4	(4.1)	6	(2.9)	0.566
Other symptoms	27	(8.8)	9	(9.3)	19	(9.1)	0.858
Need for an ambulance transfer	88	(28.8)	42	(43.3)	46	(22.0)	<0.001
Deterioration of health	34	(11.1)	10	(10.3)	24	(11.5)	0.761
Deceased	22	(7.2)	5	(5.2)	17	(8.1)	0.348
Social reason[b]	17	(5.5)	4	(4.1)	13	(6.2)	0.456
Technical reason[c]	7	(2.3)	2	(2.1)	5	(2.4)	0.857
Other	10	(3.3)	4	(4.1)	17	(8.1)	0.197
Days in hospital before death							
Mean (SD)	8	(20.43)	7.31	(20.24)	8.55	(20.64)	
Median (IQR)	0	(0–6)	0	(0–4)	2	(0–7)	<0.001
Place of death, *n* (%)							
Home	60	(24.3)	33	(30.0)	27	(19.7)	0.055
Nursing home	64	(25.9)	38	(34.9)	26	(19.0)	0.005
End-of-life care ward	110	(44.5)	36	(33.0)	74	(54.0)	0.001
Secondary hospital	11	(4.5)	1	(0.9)	10	(7.3)	0.016
Other or missing	2	(0.8)	1	(0.9)	0	(0)	

[a]*p*-value between patients living in urban and rural areas.
[b]Exhaustion of the caregiver or patient's inability to manage at home.
[c]Problems related to medical equipment or administration of drugs or oxygen.

- Yli puolet potilaista tarvitsi vähintään yhden ensihoidon käynnin kotisaattohoidon aikana.
- Keskim. 1.2 käyntiä/potilas.
- Käynnin kesto keskim. 45 minuuttia.
- Useimmiten käynnin syynä vaikeat oireet (38%).

- Siirtokuljetuksen tarve syynä 29 % käynneistä. Siirroista
  - 48% tukiosastolle
  - 16% päivystykseen
  - 5% palliatiiviselle poliklinikalle.

- ¼ oli elämänsä loppuun saakka kotona ja ¼ hoitokodissa (93% siellä asuvista).
- 45 % kuoli tukiosastolla.
- Vain 4.5 % kuoli ESH:ssa.

Ensihoitajien käyntisyitä virka-aikana ja sen ulkopuolella

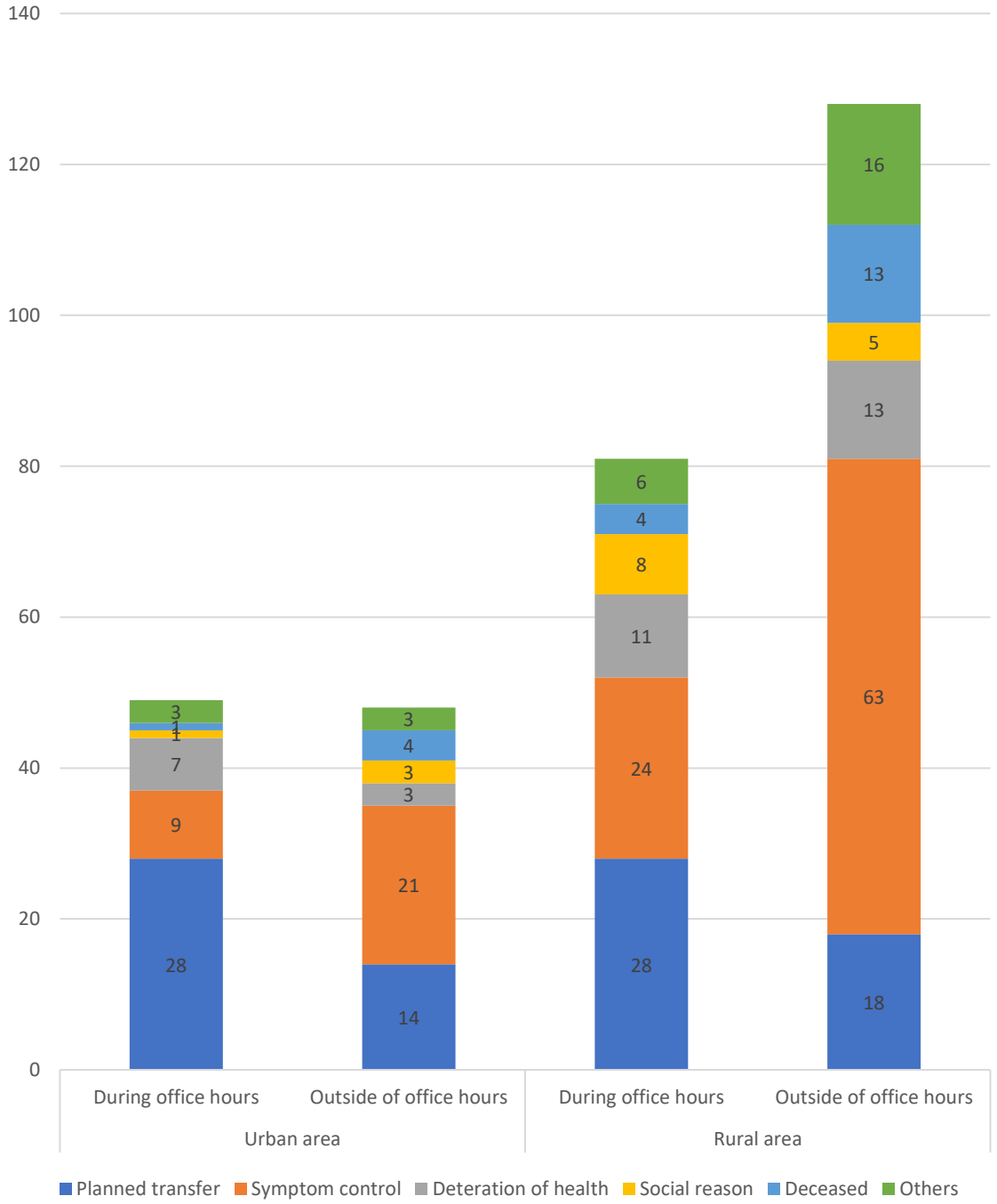


Table 3. Reasons for paramedic visits, days in hospital and place of death among the patients in different diagnosis groups.

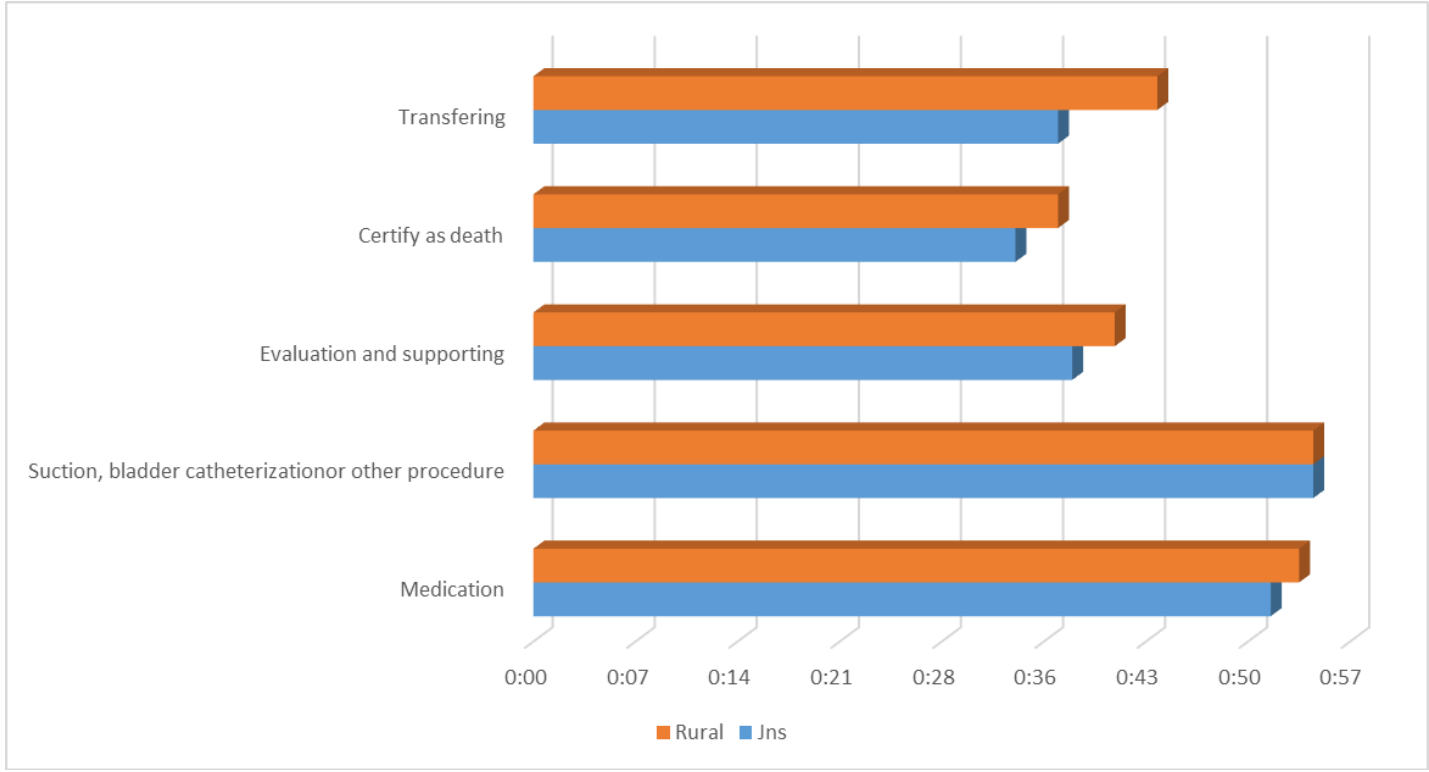
	Diagnosis							
	Cancer		CVD		Dementia		Others	
Patients, *n*	173		30		24		25	
Age (years), median (range)	72	(28–93)	91**	(66–99)	86**	(76–102)	74	(27–97)
Paramedic visits, *n*	233		47		5		21	
Patients needing paramedic visits, *n* (%)	112	(64.7)	20	(66.7)	3	(12.5)**	10	(40.0)*
Reason for visits, *n* (% of visits)								
Symptom control	87	(37.3)	22	(46.8)	0		8	(38.1)
Need for an ambulance transfer	75	(32.2)	9	(19.1)	2	(40.0)	2	(9.5)*
Social	16	(6.9)	1	(2.1)	0		0	
Deterioration of health	26	(11.2)	5	(10.6)	0		3	(14.3)
Deceased	8	(3.4)	7	(14.9)**	1	(20.0)	6	(28.6)**
Technical	5	(2.1)	0		0		2	(9.5)*
Other	16	(6.9)	3	(6.4)	2	(40.0)**	0	
Days in hospital before death								
Mean (SD)	10.8	(23.7)	2.9	(6.6)	0	(0)	1.2	(3.5)
Median (IQR)	2	(0–10)	0	(0–2)**	0	(0)**	0	(0)**
Place of death, *n* (%)								
Home	46	(26.7)	4	(14.3)	1	(4.8)*	9	(36.0)
Nursing home	16	(9.3)	16	(57.1)**	20	(95.2)**	12	(48.0)**
End-of-life care ward	98	(57.0)	8	(28.6)**	0		4	(16.0)**
Secondary hospital	11	(6.4)	0		0		0	
Other	1	(0.6)	0		0		0	

*$p < 0.05$ and **$p < 0.01$ compared to patients with cancer.

In previous studies[6,18] many people living in residential care are shown to be hospitalized before death. In this study, the majority (93%) of the patients who lived in a nursing home also died there. Paramedics might support the staff of the nursing home in palliative care, helping in symptom control. However, other factors besides our end-of-life protocol, such as the palliative care skills of the nursing home staff, might have had a significant influence on our findings.

[a]Neurodegenerative diseases (*n* = 8), liver or other gastrointestinal track diseases (*n* = 8), congenital diseases (*n* = 5), haematological diseases (*n* = 2), respiratory diseases (*n* = 1) and polyarthrosis (*n* = 1).
[b]Five patients were still alive at the end of the follow-up and one patient was lost from the follow up after travelling abroad.

Ensihoitajien interventioita ja käynteihin kulunut aika



Kotisaattohoitopotilaan ensihoitoprotokolla – Vaarantaanko ensihoidon ”perustehtävän”?

paramedics. Support by paramedics was notable as over half of the patients needed a paramedic visit even though 29% of the visits were due to a planned transfer. On the other hand, the total resource demand on the North Karelia's Fire and Rescue Department was minor as the proportion of the visits to the patients in end-of-life care was under 1% of all ambulance calls during the study period. The median time needed for a visit was under 1 h, about one third of the cases were resolved at home, and only one patient out of seven was transported to the emergency department. Although our study was not planned to show the cost effectiveness of the protocol, we suggest that the total usage of the health care resources was not increased but probably even reduced.

Saattohoitopotilaan ongelman ratkaisu kohteessa ilman siirtoa kaukana sijaitsevaan päivystyspisteeseen pitää ensihoitoyksikön omalla alueellaan turvaamassa myös muita kiireellisiä tehtäviä.

Johtopäätökset

- Ensihoidon integrointi kotisaattohoitopotilaan palveluketjuun on perusteltua, koska **yli puolet kotisaattohoitopotilaista tarvitsee ensihoitopalveluita.**
- Protokollan avulla **suurin osa oireista ja muista kotisaattohoitopotilaan ongelmista voidaan ratkaista kotona tai kuljettamalla potilas tukiosastolle** ilman päivystyskäyntiä tai kuljetusta erikoissairaanhoitoon.
- Ensihoidon tuki on erityisen tärkeää virka-ajan ulkopuolella, harvaan asutuilla alueilla, joissa ei ole tarjolla 24/7 palliatiivista kotisairaanhoitoa.

Conclusion

Integrating paramedics into end-of-life care at home by a planned protocol and palliative training is reasonable, as over half of the patients need help from paramedics. With a protocol, most of the symptoms and other problems may be resolved at home or by transferring the patient to a planned end-of-life care ward without the need for an emergency visit or admission to a secondary hospital. Support from the paramedics is especially valuable in rural areas without 24/7 palliative home care services and outside of office hours. The effects on costs and symptom control as well as views of the patients and families regarding the paramedics' involvement in end-of-life care at home should be further assessed.

Keywords
Emergency medical services, home care services, end-of-life care, palliative care, paramedics

Kiitos tunnustuksesta!

What is already known about the topic?

- Paramedics are involved in palliative care at home during acute crises, but their visits usually lead to transfers to emergency departments.
- Patients in end-of-life care at home in rural areas do not receive 24/7 palliative home care services like patients in urban areas.

What this paper adds?

- A planned protocol integrating paramedics into end-of-life care at home allows a majority of the problems to be taken care of at home or by transferring the patient to a pre-planned end-of-life care ward.
- Integrated support from paramedics in end-of-life care is especially needed in rural areas without 24/7 home care services and outside of office hours.

Implications for practice, theory or policy?

- Paramedics should be integrated in palliative care pathways - not only as transferrers, but as a part of a palliative home care team, especially in rural areas without 24/7 palliative home care services.
- The effects on costs and on symptom control as well as the views of the patients and families regarding the paramedics' involvement in end-of-life care at home should be further assessed.