

Perceived Value and Cost of Providing Emergency Medication Kits to Home Hospice Patients in Maryland

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Abstract

Many hospices have adopted the use of “emergency medication kits” (EMK) to allow for management of emergent symptoms and to prevent unscheduled patient interventions. The purpose of this study was to compare perceptions of hospice managers and clinicians regarding the value of EMK and to assess outcomes. Clinical managers and clinicians reported that EMK were valuable in preventing emergency department visits, unscheduled nursing visits, pharmacy deliveries, and increased satisfaction. A hospice using EMK reported fewer calls requiring unscheduled interventions (18% vs 33%) and resulted in cost savings (US\$23.04 per call vs US\$31.62 per call). Hospice managers and clinicians perceived EMK to be valuable in areas of quality, cost, and satisfaction. There appears to be an advantage to routinely providing EMK for home hospice patients.

Keywords

home hospice, after hour care, emergency medication, symptom management, terminal care, survey

Introduction

All hospices face the challenge of controlling symptoms arising after-hours in an efficient and effective way. An important element of after hours hospice care involves expediently identifying and resolving common distressing symptoms, such as pain, anxiety, dyspnea, nausea/vomiting, and respiratory tract secretions.¹⁻³ New symptoms may present suddenly and existing symptoms may worsen precipitously with progressing disease. Hospice programs handle emergency symptoms in a variety of ways, depending on available resources, geographical area, and philosophy of care. Interventions provided during nonbusiness hours can include any or all of the following: an unscheduled skilled nursing visit, instruction in medication self-administration, a nondrug intervention, education, emergency medication delivery, and rarely a referral to a hospital emergency department. Achieving symptom relief with these interventions may take a considerable amount of time. Many hospices have adopted the use of “emergency medication kits” (EMK, also referred to as a comfort kit, symptom relief kit, and starter kit) to target the problem of emergent symptom crises occurring after-hours.

Emergency medication kits are typically ordered by a physician on admission to hospice and kept in the patient’s home. The kit allows the patient access to small quantities of medication that can be administered immediately upon nurse instruction. Emergency medication kits contain sufficient medications for 12 to 72 hours, thus avoiding the immediate need for pharmacy and physician involvement after-hours. LeGrand and colleagues⁴ described

these kits along with their experiences over a 2-year period of use at the Hospice of Cleveland Clinic. They concluded that kits can be a cost-effective, practical way to control symptoms that arise emergently, and they recommended use for every home-based hospice patient. In England, this concept is addressed in an after-hours community palliative care report describing best practices which include proactively leaving medications in the patients’ homes.⁵ Petrin⁶ also supports the use of “symptom relief kits” and described 2 benefits of providing them: (1) avoiding a distressed patient having to call a doctor after-hours and wait for a prescription to be dispensed, and (2) preventing a patient desperate for relief from seeking a hospital emergency department for treatment. A state-wide telephonic survey of 21 hospice clinical managers was recently published describing the practice and perceived value of providing EMK in New Hampshire.⁷ No study has examined the viewpoint of the after-hours hospice clinician responsible for determining the appropriateness of EMK use for individual patients.

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Table 1. Contents of Emergency Medication Kits (EMK) Used in Hospice A

Medication	Quantity (Doses)	Indication
Prochlorperazine tablets and suppositories (10 mg and 25 mg)	3 each	Nausea/vomiting
Hyoscyamine concentrated liquid, 1 mL (0.125 mg/mL)	5	Respiratory tract secretions
Lorazepam 1 mg tablet	5	Agitation, restlessness
Morphine concentrated liquid, 1 mL (20 mg/mL)	5	Pain, shortness of breath
Haloperidol concentrated liquid, 1 mL (2 mg/mL)	3	Hallucinations, nausea
Acetaminophen suppository (650 mg)	3	Fever

The purpose of this study was to assess perceptions of hospice managers and clinicians regarding the value of EMK and to validate these perceptions by measuring outcomes. First, we designed a telephonic survey to gather the opinions of hospice managers in Maryland on their hospices' decisions relative to EMK use. Next, we designed a comparative survey of after-hours clinicians at 2 hospices (1 with and 1 without EMK) to document both their perceptions of EMK value and to compare interventions required to manage symptoms after-hours. Considering the potential for cost savings associated with EMK use, we assessed costs related to managing symptoms after-hours in hospices with and without EMK to compare the perceptions to actual outcomes.

Methods

Survey of Hospice Managers

Twenty-three hospices were identified in Maryland using contact information provided by the Hospice Network of Maryland. Telephonic surveys were conducted between November and December 2002 by KAW. The survey was completed over the phone by the clinical director (or equivalent position title) at each hospice. The survey tool was designed by both authors collaboratively to collect information on the use of EMK, including contents, patient selection, protocols for EMK use, tamper resistance, cost, and perceived value. Information was also collected from hospices not using EMK regarding their process for obtaining medications after-hours, the availability of a 24-hour pharmacy with medication delivery, and whether they had considered using EMK.

Comparative Study

Two hospice programs in Maryland were used for this comparative analysis. Hospice A routinely provided EMK to all patients, and Hospice B did not use kits for any patients. The contents of the EMK used by Hospice A in this study are shown in Table 1. The on-call process for the 2 hospices is similar other than the practice of providing EMK. Both programs had a 24-hour nurse hotline for support and emergencies, an on-call pharmacy for after-hour prescriptions/deliveries, and provide after-hour nursing visits as needed. Hospice A serves a mostly suburban area compared to Hospice B that covers a more urban area.

After-hours nurses from both hospice programs collected data for 2 weeks in spring 2003 by completing a survey regarding the

management of each call received during nonbusiness hours for symptom management. The nurse answering the hotline recorded the nature of the clinical situation, and whether an intervention was required (ie, use of prescribed medication in the home, use of a medication in the EMK, nursing visit, emergency pharmacy delivery, emergency department referral, education/support). "After-hours" was defined as weekends and between 5:00 PM to 8:00 AM on weekdays. Calls were excluded if they were administrative in nature (eg, medication refill requested for the following day, scheduling issues, medical equipment questions, death notifications, etc).

Costs for each after-hour intervention (unscheduled pharmacy delivery or nursing visit) were defined prior to the study period to allow comparison between the 2 hospices. Nursing clinical directors from both hospice programs were asked to estimate the cost of an unscheduled after-hours nursing visit. This cost was agreed to be approximately US\$100 per visit. The provider pharmacy was the same for both hospices, and estimated the average charge for an unscheduled emergency medication delivery based on historical data to be US\$70 per delivery. The pharmacy charged the hospice US\$9 per EMK; however, the retail price of the kit was twice the amount (US\$18). The price was negotiated on the premise that the pharmacy benefited by the hospice providing an EMK because it prevented emergency medication deliveries, thus reducing the amount of overtime costs necessary for pharmacists' time. In our analysis, the costs were calculated at both the discounted and the retail price (US\$18) for EMK.

After-hours nurses from Hospice A handling patient encounters where there was an EMK present in the home were asked to speculate on whether having the EMK prevented an alternate intervention. Specifically, they were asked if having the EMK present prevented an unscheduled nursing visit, an unscheduled medication delivery, transfer to the emergency department, longer-lasting symptoms, or none of the above.

Considering that most symptoms are amenable to drug therapy, the percentage of encounters managed by administering medication was considered a quality measure in this study. A primary purpose of EMK is to make the commonly used medications readily available. Without an EMK in place, a hospice may be less likely to use medications after-hours to treat symptoms due to cost and inconvenience. Another indirect measure of quality examined in this study was the nurses' estimated of time to symptom resolution. Time to symptom relief was categorized as one of the following: <30 minutes, 30 to 60 minutes, 1 to

2 hours, or > 2 hours. The nurses also reported their perception of patient/family satisfaction with the intervention by noting “yes” or “no” on the call log. This study was approved as an exempt study by the University of Maryland institutional review board.

Data Analysis

Telephonic survey data are presented in a descriptive fashion using the total number of respondents (n) and percentages (%) for each survey item. This survey was designed to collect administrative data and did not involve patient information.

For the comparative study between hospices, analysis of frequencies and means of relevant variables are reported. Frequencies of symptoms and percentage of calls reporting resolution of symptoms within a given time in Hospices A and B were compared using the χ^2 test for statistical significance. The level of statistical significance was $P \leq .05$. We considered Hospice A patients without EMK separately, as we expected they would be more similar to Hospice B patients and serve as a sensitivity analysis.

Hospices were compared by calculating cost per call received after-hours. This was determined by dividing the total amount of costs incurred during the 2-week study period (eg, cost of EMK, unscheduled nursing visit, emergency pharmacy delivery) by the number of calls related to symptom management. This value represented the cost per call dollar amount to the program. A sensitivity analysis was also conducted by comparing data from Hospice A patients who did not have an EMK at home to data of Hospice B patients (who did not have EMK).

Results

Survey of Hospice Managers

Of 23 hospice programs in Maryland, 21 participated in the survey. Of the 21 hospices surveyed, 14 reported using EMK (Table 2). Half of the hospices using kits had been doing so for 5 to 10 years. The majority of these hospices either gave EMK to all patients (7 of 14); 6 hospice programs relied on the nurse case manager to select patients appropriate for EMK distribution, and the remaining hospice used physician judgment for EMK placement. About half of respondents had protocols in place for EMK use (6 of 14) and 6 also reported having tamper-resistant protection on the EMK. Contents of the kits typically included a combination of medications from the following classes: antiemetic, nonopioid, opioid, antisecretory agent, antipsychotic, and anxiolytic. Cost of the EMK was reported to range from US\$5 to US\$60; in 3 cases, the EMK was included in the pharmacy per diem, and cost data was not reported by 3 respondents. Only 3 of 14 hospices that used EMK had conducted any analysis of the cost and benefits of using these kits, and there was a range of beliefs regarding the financial implication of using kits. Most respondents reported that EMK were valuable in preventing emergency department visits (69%), unscheduled nursing visits (54%), pharmacy

deliveries (77%), and increased satisfaction of both patients and nurses (both 100%).

A third of the surveyed hospices did not use EMK (7 of 21). They used a variety of strategies to provide medications to patients after-hours (Table 3). The majority of hospices without EMK had access to a 24-hour pharmacy service (5 of 7); however, the average delivery time was reported to be 2 to 3 hours by 3 of the 7 hospices. Reasons cited for not using EMK varied, but many felt that EMK may be worthwhile (3 yes; 2 maybe of the 6 responders).

Comparative Study Results

The average daily census of Hospice A was 154 patients, while Hospice B was 103 patients (Table 4). Seventy-seven percent (84 of 109) of callers in Hospice A had an EMK in the home, and no callers in Hospice B had an EMK in the home. Reasons why the remaining 23% of patients in Hospice A did not have an EMK include EMK not ordered, awaiting delivery of EMK, caller may not have been aware of kit in home. Callers reported 1.4 symptoms on average per call in Hospice A versus 1.2 symptoms per call in Hospice B; types of symptom complaints were similar between the 2 hospices. The 2 most common symptoms reported after-hours were pain and shortness of breath in both hospices.

Comparative Study Interventions

During the 2-week study period, 82% of the 84 callers in Hospice A who had kits at home were able to be managed without additional intervention by taking one of their prescribed medications, taking a medication from the EMK, and/or telephone support/education. Of those having kits and requiring further intervention, 2 calls (2%) resulted in an unscheduled pharmacy delivery, and 13 calls (16%) required an unscheduled skilled nursing visit. None of the Hospice A calls with EMK at home required both an unscheduled pharmacy delivery and an unscheduled skilled nursing visit.

During the study period, Hospice B received 37 after-hours calls related to symptom management during the study period. Eleven calls (30%) required an unscheduled nursing visit, 1 (3%) required an unscheduled pharmacy delivery, and the remainder (67%, n = 25) did not require an intervention associated with additional costs. As a sensitivity analysis, we separated data from callers in Hospice A without EMK to compare differences in interventions between the groups (n = 25 calls). Two callers (8%) resulted in an unscheduled skilled nursing visit, 2 (8%) required an unscheduled pharmacy delivery, and 2 (8%) required both an unscheduled skilled nursing visit and an unscheduled pharmacy delivery. The remaining 19 (76%) calls were managed without additional interventions.

Comparative Study Cost Calculations

Costs of managing symptoms during the after-hours period were calculated by adding the costs of each intervention (US\$70 for unscheduled pharmacy delivery, US\$100 for unscheduled skilled nursing visit, US\$170 for both; Table 5).

Table 2. Survey Results of Maryland Hospices With Emergency Medication Kits (EMK; 14 of 21 Survey Responders)

Survey Question	Possible Answers	Respondents, n (%)
How long have you had EMK? ^a	<1 year	2 (14)
	2-4 years	5 (36)
	5-10 years	7 (50)
How do you decide which patients receive EMK? ^a	All patients receive kit	7 (50)
	Patients selected by nurse case manager	6 (43)
	Patients selected by physician judgment	1 (7)
Are there symptom-specific protocols to direct use and dosing of EMK?	Have protocols in place for kit use	6 (43)
	Do not have protocols for kit use	8 (57)
Are the EMK tamper resistant?	Yes	6 (43)
	No	8 (57)
What are the contents of your kit? ^a	Antiemetic (compazine, haldol, phenergan, ABHR)	9 (64)
	Nonopioid analgesic (acetaminophen)	7 (50)
	Opioid analgesic (morphine)	10 (71)
	Antisecretory agent (hyoscyamine, scopolamine)	10 (71)
	Antipsychotic (haloperidol)	9 (64)
	Antianxiolytic (lorazepam)	9 (64)
	<US\$10	1 (7)
	US\$11-20	2 (14)
How much do you pay for EMK? ^a	US\$21-30	2 (14)
	US\$31-40	0 (0)
	US\$41-50	2 (14)
	US\$51-60	1 (7)
	>US\$60	0 (0)
	Cost included in pharmacy per diem	3 (21)
	Unsure of cost (varies depending on contents/providers)	3 (21)
	Has your hospice ever completed a benefit versus cost analysis for EMK?	Yes
No		10 (71)
Unsure		1 (7)
How many times per month do you feel EMK prevents unscheduled after-hours event? (events defined as unscheduled nursing visit, emergency department [ER] admission, or emergency pharmacy delivery) ^a	20-40 events/month prevented	2 (14)
	10-15 events/month prevented	2 (14)
	3-5 events/month prevented	3 (21)
	2 events/month	1 (7)
	0 events/month prevented (convenience to family only)	2 (14)
	No opinion	4 (29)
Which of the following do you consider a benefit of using EMK? (multiple responses allowed, 1 nonresponder)	Decreased emergency department/hospital visits	9 (69)
	Decreased unscheduled nursing visits	7 (54)
	Decreased emergency pharmacy deliveries	10 (77)
	Increased patient satisfaction	13 (100)
	Increased nursing satisfaction	13 (100)

Abbreviation: AHBR, lorazepam (Ativan), diphenhydramine (Benadryl), haloperidol, metoclopramide (Reglan); EMK, emergency medication kit.

^a Open-ended questions in which answers were subsequently categorized.

Costs of additional interventions for Hospice A callers with an EMK were US\$1,440. In addition, to provide EMK to each new admission during the study period (US\$9 each), we added the cost for the 55 Hospice A admissions, resulting in an additional cost of US\$495. Adding these costs together, the total cost of providing after-hours care in Hospice A was US\$1,935, resulting in an average cost of US\$23.04 per call. When calculated using the retail price of the kit (US\$18), total costs increased to US\$2430 and US\$28.93 per call. For Hospice B, total intervention costs were calculated as US\$1170 during the study

period, producing a cost per call of US\$31.62. Providing care for Hospice A callers without EMK at home resulted in total intervention costs of US\$680, and the cost per call was determined to be US\$27.20.

Comparative Study Nurses' Perception of Value

Nurses in Hospice A who responded to after-hours encounters for patients with an EMK in the home felt that the EMK prevented an unscheduled nursing visit in 46% of encounters

Table 3. Survey Results of Maryland Hospices Without Emergency Medication Kits (EMK; 7 of 21 Survey Responders)

Survey Question	Possible Answers	Respondents, n (%)
Do you have access to 24-hour pharmacy services?	Yes	5 (71)
	No	2 (29)
Those who had 24-hour pharmacy services (n = 5):	<1 hour	1 (25)
What is the average delivery time? ^a (1 nonresponder)	2-3 hours	3 (75)
What is the protocol for obtaining medication after-hours for symptom control? ^a (1 nonresponder)	Anticipation requiring medication + on-call pharmacist	2 (33)
	On-call pharmacist	3 (50)
	Bonded driver to deliver + inpatient pharmacy fills after-hour prescriptions	1 (17)
What are the biggest reasons your hospice does not have EMK? (multiple responses allowed, 1 nonresponder)	Logistics	3 (50)
	Cost	3 (50)
	No perceived need	2 (33)
In your opinion, would EMK be worthwhile to your hospice? (1 nonresponder)	Yes	3 (50)
	Maybe	2 (33)
	No	1 (17)

Abbreviation: EMK, emergency medication kits.

^a Open-ended questions in which answers were subsequently categorized.

Table 4. Demographics of Hospice A and Hospice B

	Hospice A	Hospice B
Average daily patient census	154	103
Area served	Baltimore/Annapolis suburb	Baltimore city/suburb
Number of after hour calls during study period	109	37
Callers with emergency medication kits (EMK) present in home	77% callers	0% callers
Number of symptoms discussed per call ^a	1.4	1.2
Frequency of symptoms reported after-hours (% of calls) ^a		
Nausea/vomiting	12	5
Anxiety	20	16
Pain	25	19
Shortness of breath	22	22
Fever	2	5
Secretions	17	16

Abbreviation: EMK, emergency medication kits.

^a Did not achieve statistical significance.

(n = 21 of 46 responders), an unscheduled medication delivery in 52% (n = 24) of encounters, transfer to the emergency department in 20% (n = 9) of encounters, longer duration of symptoms in 74% (n = 34) of encounters, or none of the above in 11% (n = 5) of encounters.

Comparative Study Quality of Care Data

Hospice A used medication, from either existing prescription or EMK, to treat after-hours symptoms in 91% of the calls. Of the callers with kits at home, 67% of calls resulted in administration of a medication in the EMK. In Hospice B, medications from existing or emergency delivery were used to treat symptoms in 51% of the total clinical calls. Hospice A recommended medication administration more frequently than Hospice B to treat symptoms ($P = .001$).

The estimated time to symptom relief was shorter in Hospice A patients with kits than in Hospice B patients. Nurses

in Hospice A estimated that 56% of their after-hour callers received symptom relief within 30 minutes compared to Hospice B nurses who estimated that none of their callers were satisfactorily treated in less than 30 minutes (Figure 1).

The after-hours nurses perceived caller (patient/family) satisfaction was significantly higher in Hospice A patients with a EMK compared to both Hospice B patients and Hospice A patients without a EMK (95%, 75%, and 82%, respectively; $P < .001$). Overall, patients and family members with an EMK in the home were perceived by the after-hours nurses as being more satisfied than those calling with no EMK available.

Discussion

Based on our findings, EMK use varies among hospice programs in Maryland but is generally considered valuable for increasing quality of care, satisfaction, and cost savings. Perceptions among clinical managers and point-of-care hospice clinicians were

Table 5. Costs Associated With After-Hours Interventions

Intervention	Hospice A With EMK (n = 84 Calls)		Hospice A Without EMK (n = 25 Calls)		Hospice B (Do Not Use EMK) (n = 37 Calls)	
	N (%)	Cost (US\$)	N (%)	Cost (US\$)	N (%)	Cost (US\$)
Unscheduled nursing visit required (US\$100 per visit)	13 (16)	\$1300	2 (8)	\$200	11 (30)	\$1100
Unscheduled pharmacy delivery required (US\$70 per delivery)	2 (2)	\$140	2 (8)	\$140	1 (3)	\$70
Nursing visit and pharmacy delivery required	0 (0)	\$0	2 (8)	\$340	0 (0)	\$0
No additional intervention	69 (82)	\$0	19 (76)	0	25 (67)	\$0
Additional cost of providing kits to each patient (US\$9 each)	\$495		NA		NA	
Total cost (US\$)	\$1935		\$2615		\$1170	
Total cost per call (US\$)	\$23.04		\$27.20		\$31.62	

Abbreviation: EMK, emergency medication kits.

similar regarding EMK. In the comparative study between 2 hospices, we found that both cost and quality results favored the routine use of EMK. Aside from potential cost savings, routine provision of EMK is associated with considerable improvement in patient outcomes related to symptom management (eg, faster, more efficient symptom control). The survey data support the use of unscheduled interventions to manage after-hours symptoms as an important marker of value and costs related to EMK use.

Unlike the survey of hospice programs in New Hampshire, who all reported the use of EMK, we found that Maryland hospices were not as consistent in adopting EMK.⁷ Among those providing kits, we similarly discovered variability in how hospice programs used EMK, including how the kits were ordered, policies for EMK use, medications included, and cost. In Bishop's study, 82% of hospices reported using a medication from the EMK in over 50% of cases.⁷ In our comparative study, Hospice A relied on an EMK medication in 67% of the calls made after-hours for symptom management.

We found the difference in frequency of medication use to treat after-hours symptoms to be surprisingly divergent between our 2 studied hospices (91% vs 51%; $P = .001$). It is possible that Hospice A was more likely to use a medication to treat a symptom due to the availability of the EMK. Or, Hospice B may have delayed using a medication not available in the home to avoid an unscheduled pharmacy delivery. The reason for this discrepancy is likely influenced by both these rationales, but we know that medications are frequently effective in treating symptoms that arise without warning, thus further supporting the use of EMK.

Many hospices have instituted the practice of providing emergency supplies of medications with little or no formal review of the cost-effectiveness of this practice (10 of 14 in our survey). The costs reported in this survey revealed that 3 of the 14 hospices using EMK were able to purchase them at a lower price than the US\$25 to US\$60 per kit reported in the literature.^{4,7} No Maryland hospices reported an EMK acquisition cost exceeding this range. Although this cost may seem excessive, it is likely less than fees charged by the pharmacy for emergency drug deliveries and may allow for faster medication

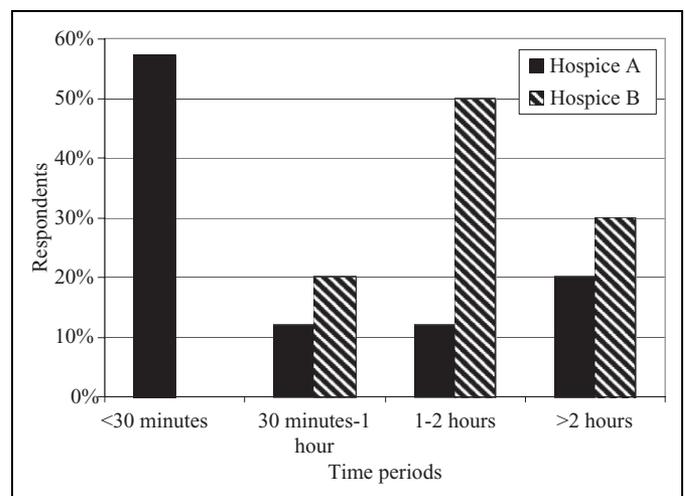


Figure 1. Estimated time to symptom relief (% of callers), no significant differences were observed between Hospice A (routine emergency medication kits [EMK] use) and Hospice B (no EMK) groups except in time periods <30 minutes and 1 to 2 hours. *Significantly difference found between groups, $P < .05$. Hospice A, $n = 51$; Hospice B, $n = 20$.

administration preventing prolonged time to symptom relief. Cost data is an important variable when evaluating the value of providing a routine service; however, it is not the only factor that should be taken into consideration. Although our data suggest cost savings, EMK costs and other practice variations may change the profit or loss margin for other hospices. Routine provision of EMK may not save money for every hospice as is shown in this small study, but there is considerable value in improving patient outcomes (eg, faster, more efficient symptom control).

Fixed cost values were used to control for variations between hospices and to allow comparison between the 2 programs studied. Although the costs used in this study do not reflect the actual costs incurred related to providing after-hours care, the costs are considered comparable to other hospices and may allow our results to be transferable to other programs. We

recognize actual costs may be different now compared to 2003 costs used in this study, but the concepts presented reflect a framework that is still very relevant and unchanged. Considering there are benefits for both the hospice and the pharmacy service in providing EMK routinely, we hope to highlight the potential to negotiate costs below the retail price for EMK. We believe the data to be representative of real-world practice but may have underestimated the cost savings of using EMK in hospice care. Specifically, we calculated the cost of providing EMK based on the total number of admissions during the 2-week study period, not just the percentage of patients who actually received an EMK. If we assume that only 77% of all patients admitted during the study period had an EMK (which is the percentage of *callers* who had an EMK in the home), the acquisition cost of EMK would be US\$381, lowering the cost per call to US\$21.68. Despite the fact that our comparative analysis relied on data collected over a 2-week time period, we believe that these data are useful as a beginning step in determining the benefit of using EMK. The 2-week time period was logistically necessary considering the preexisting paperwork burden of after hour's staff.

Limitations to this study include the short study period, small numbers of patients, and the use of estimated cost data for unscheduled care. Furthermore, although hospices A and B were fairly similar, the philosophy and practice may be sufficiently different to affect the assessed outcomes. Lastly, the satisfaction of patients and families was assessed by nurse perception. Future studies measuring direct outcomes related to this area should be further developed.

Conclusion

The use of EMK is not consistent among Maryland hospice programs; however, they are perceived as providing value in areas of quality, cost, and satisfaction. In the comparison of 2 hospices, the hospice routinely providing EMK was able to manage emergent after-hour symptoms more cost-effectively and efficiently. These data validate the common perception of cost savings by demonstrating decreased high-cost after-hour interventions in the hospice using EMK. Significant improvement in quality of care measures such as

time to symptom control and a trend toward increased satisfaction is perceived by both managers and clinicians in hospices. Based on our findings, there appears to be an advantage to routinely providing EMK for home hospice patients. Studies are needed to further define the clinical and economic impact to home-based hospice programs.

Authors' Note

Dr. Walker was completing a Palliative Care Pharmacy Residency at the time this research was completed. No previous oral presentation was done.

Declaration of Conflicting Interest

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