



SOOTHING  
SCENTS

## **QueaseEASE**

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RESEARCH, REPORTS AND STUDIES

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<b>MADIGAN HEALTHCARE SYSTEM</b> - December 2012	<b>8</b>
<i>In a study conducted by Madigan Healthcare System, users of QueaseEASE<sup>®</sup>, compared to placebo, showed a <b>statistically significant decrease in nausea</b>, as well as a significantly higher perception of treatment effectiveness.</i>	
<b>ST. JUDE CHILDREN'S RESEARCH HOSPITAL</b> - Septemeber 2014	<b>9</b>
<i>At St. Jude Children's Research Hospital, data collected from a three month pilot project showed QueaseEASE<sup>®</sup> to be a feasible intervention. It also found that patients, families, and nursing staff were highly satisfied with QueaseEASE<sup>®</sup>.</i>	
<b>FLOYD MEMORIAL HOSPITAL</b> - August 2013	<b>12</b>
<i>Published in the October 2015 issue of JoPAN, a Floyd Memorial Hospital study showed using QueaseEASE<sup>®</sup> for post discharge nausea <b>reduced nausea 100% of the time</b>. In addition, nearly half experienced complete relief.</i>	
<b>OREGON HEALTH AND SCIENCE UNIVERSITY</b> - April 2017	<b>14</b>
<i>Oregon Health and Science University conducted a limited size clinical trial of QueaseEASE<sup>®</sup> to test efficacy and patient satisfaction. Findings showed <b>85% of users had total relief of nausea</b> and were satisfied with QueaseEASE<sup>®</sup>.</i>	
<b>BON SECOUR ST. FRANCIS HEALTH SYSTEM</b> - March 2013	<b>15</b>
<i>Clinical trials conducted at Bon Secour St. Francis Health System concluded that <b>70% of patients reported relief of nausea</b> after using QueaseEASE<sup>®</sup>, both in PACU and post discharge. In addition, 97% were satisfied with their treatment for nausea.</i>	
<b>SCRIPPS</b> - March 2013	<b>16</b>
<i>Scripps Clinic Carmel Valley conducted a small investigational trial that found that <b>62% of patients got relief from their nausea</b> after inhaling QueaseEASE<sup>®</sup>. The average patient rating of the product was 4.5 out of 5.</i>	

<b>STEPHENS MEMORIAL HOSPITAL</b> - January 2014 <i>A study conducted at Stephens Memorial Hospital showed that <b>90% of patients using QueaseEASE® had relief from their nausea, with 50% experiencing complete relief.</b></i>	<b>17</b>
<b>UNIVERSITY OF COLORADO</b> - April 2015 <i>In a University of Colorado descriptive qualitative study comparing QueaseEASE® to alcohol pads, patients and nurses both reported <b>significantly higher satisfaction with QueaseEASE®.</b></i>	<b>18</b>
<b>HOUSTON METHODIST</b> - May 2016 <i>In a study conducted at Houston Methodist Sugarland Hospital, <b>results showed a 60% reduction in antiemetic drug use after patients inhaled QueaseEASE® in the PACU. This led to a 100% recommendation to include it in their multi-modal therapy for PONV.</b></i>	<b>22</b>
<b>QUEENS MEDICAL CENTER</b> - July 2012 <i>A Queens Medical Center trial found a <b>15 minute decrease in PACU stay</b> when nauseated patients used QueaseEASE®. There was also a <b>37% decrease in Phenergan use</b> and more than a <b>50% decrease of Kytril administration.</b> In addition, 82% of patients felt that QueaseEASE® helped relieve their nausea.</i>	<b>23</b>
<b>DEACONESS HOSPITAL</b> - March 2017 <i>In a prospective randomized study comparing QueaseEASE® to standard post discharge nausea care, 100% of the patients using QueaseEASE® found effective relief from their PDN.</i>	<b>24</b>
<b>UMASS LOWELL SCHOOL OF NURSING</b> - October 2018	<b>25</b>

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## A PROSPECTIVE, RANDOMIZED STUDY OF THE EFFECTIVENESS OF AROMATHERAPY FOR RELIEF OF POSTOPERATIVE NAUSEA AND VOMITING

Hodge, N., Pierce, R., McCarthy, M., Feider, L., Center for Nursing Science & Clinical Inquiry, and Sumner, C., Medical-Surgical Nursing Unit

### BACKGROUND

Postoperative nausea and vomiting (PONV) is the number one concern for patients having surgery under general anesthesia; it causes subjective distress, along with increased complications and delays in hospital discharge. Aromatherapy represents an alternative and complementary therapy for management of PONV.

### PURPOSE

To study the effectiveness of aromatherapy for PONV in postoperative patients admitted to the surgical unit for at least 24 hours.

### METHODS

A prospective, randomized two group design with the treatment group receiving an aromatic inhaler (QueaseEASE®) and the control group receiving a placebo inhaler. Patients were recruited from the Surgical Services Center, enrolled 1-5 days prior to surgery, and received the study intervention with the first complaint of nausea. The self-administered inhaler was used as an immediate treatment for nausea. Patients completed two Likert-type scales rating nausea at baseline and after 3 minutes, and questionnaires addressing satisfaction with nausea treatment and perceived effectiveness of aromatherapy.

### RESULTS

Of 339 enrolled patients, 121 patients experienced PONV; 25 patients were lost to attrition. A change score was computed for the initial and follow-up nausea assessment scores. Nausea scores in both the treatment group and the placebo group decreased significantly,  $p < .01$  and  $p < .01$  respectively, and there was a significant difference between the two groups,  $p = .03$ . Satisfaction with overall management of PONV was high regardless of group. Perceived effectiveness of aromatherapy was significantly higher in the treatment group,  $p = .02$ .

### IMPLICATIONS

Aromatherapy was favorably received by most patients and represents an effective treatment option for post-op nausea.

The views expressed are those of the authors and do not reflect the official policy of the Department of the Army, the Department of Defense or the U.S. Government. Madigan Army Medical Center, Bldg 9040 Jackson Avenue Tacoma, WA 98431 • (253) 968-1110 • DSN: 782-1110



## THE IMPLEMENTATION OF AROMATHERAPY INTO THE PEDIATRIC ONCOLOGY SETTING: AN EVIDENCE BASED INITIATIVE

Melinda Burks BSN, RN, CPHON, Tara Chambers MSN, RN, Heather Bradley BA, RN, Kristy Gibbons MS, RD, CSP, CSO, LDN, Emily Browne, DNP, RN, CPNP

### INTRODUCTION

Aromatherapy is the therapeutic use of essential oils from plants to support and balance the mind, body, and spirit to improve quality of life and increase well-being.

Pediatric oncology patients experience multiple distressing symptoms and side effects from their disease and treatment.

Aromatherapy can complement conventional treatment by reducing or eliminating side effects such as nausea, vomiting and anxiety.

The objective of this project is to assess the satisfaction and feasibility of implementing aromatherapy in the pediatric oncology setting.

### METHODS

During a 3-month pilot, patients in the Nursing Surgical Services Procedures Department with symptoms of nausea, vomiting, and/or anxiety were offered the QueaseEASE® aromatic inhaler (n=39).

Patients were excluded if they were younger than 2 years of age, had a history of asthma, current respiratory symptoms, perfume sensitivity, or essential oil allergies.

The nurse educated the patient/parent and dispensed the product for patient self-administration.

Nurses and patients or parents completed evaluations at the time of initial administration. Satisfaction and feasibility were assessed and general comments were solicited.

Two weeks later, the patient or parent received a follow-up phone call to assess ongoing use and satisfaction.

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**RESULTS**

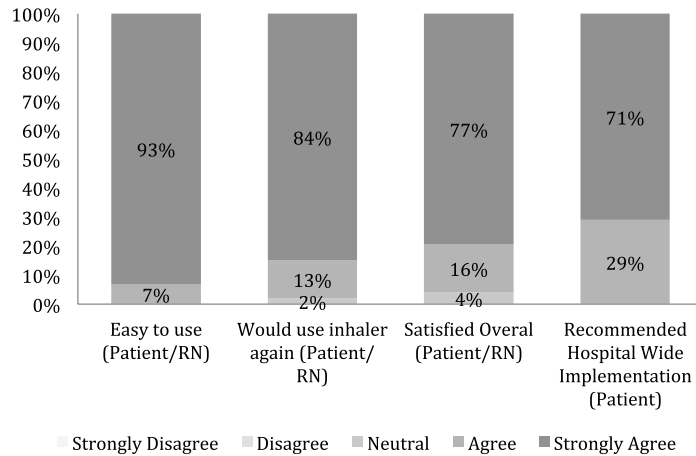


Figure 1. Results of satisfaction survey distributed to patients/families (n= 39) and nurses (n=25).

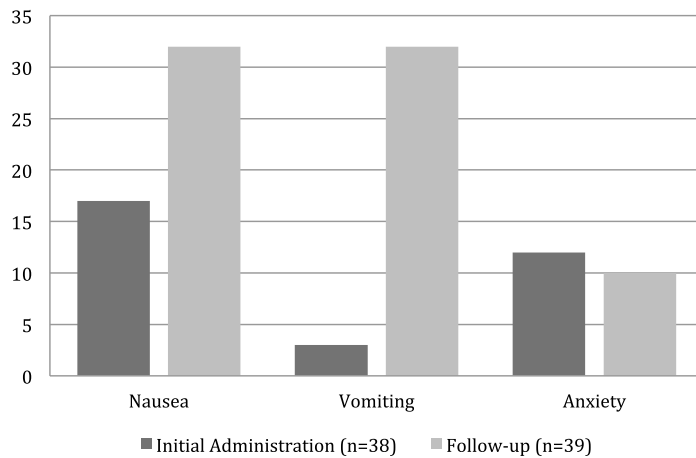


Figure 2. Types of symptoms triggering aromatherapy use at time of initial administration and during the follow-up period.

**CONCLUSIONS**

Aromatherapy usage can decrease the need for medications and improve a patient's quality of life and general feeling of well-being. Aromatherapy is a feasible intervention, resulting in highly satisfied patients, parents, and nurses. It is recommended that it be available hospital-wide.

**COMMENTS FROM PATIENTS AND PARENTS REGARDING ONGOING AROMATIC INHALER USE:**

13 year old patient: "QueaseEASE® is easy to use and stops nausea fast."  
 Mother of 15 year old patient with Down Syndrome: "He likes to smell the QueaseEASE® and it has helped to decrease his nausea and vomiting from chemo. He is able to use it himself and even got it out of my bag and put it on his pillow. It seems to help him relax."

Mother of 7 year old patient: "QueaseEASE® has helped decrease her anxiety with port access and also helps with nausea from chemo. I really like the fact that she can use the QueaseEASE® and it is not a medication but a natural product."

Mother of 13 year old patient: "QueaseEASE® has really helped to decrease his anxiety with port access and also prior to procedures under anesthesia. He no longer needs to take Ativan before his port is accessed."

There were no financial relationships with commercial interests. Partial funding for this project was provided by a grant from the St. Jude Division of Nursing Research and EBP Council. We would like to acknowledge Nancy West, MSN, RN, CCRP, for her assistance with data entry and Michelle Haimes, MSN, RN, NE-BC, for her support of this project.



## THE EFFICACY OF AROMATHERAPY IN THE TREATMENT OF POST-DISCHARGE NAUSEA IN PATIENTS UNDERGOING OUTPATIENT ABDOMINAL SURGERY

Laura Mcilvoy, PhD, RN, CCRN, CNRN, Linda Richmer, BSN, RN, CPAN,  
Deborah Kramer, ASN, RN, Rita Jackson, BSN, RN, Leslee Shaffer, BSN,  
RN, Jeffrey Lawrence, MSN, RN, CNOR, Kevin Inman, MSN, RN, CNE

### INTRODUCTION/PROBLEM

Post-discharge nausea (PDN) is a common complication after surgery with reported incidence rates as high as 35-50%. When nausea occurs post-discharge, patients attempt remedies that are ineffective or take prescribed antiemetics that can have detrimental side effects.

### PURPOSE

The purpose of this study was to explore the effectiveness of the aromatherapy product QueaseEASE® for decreasing post-discharge nausea (PDN) in patients undergoing outpatient abdominal surgery.

### DESIGN

Prospective exploratory study.

### METHOD

Informed Consent was obtained preoperatively from a convenience sample of adult patients scheduled for outpatient abdominal surgery procedures. Prior to discharge, subjects were instructed in the use of QueaseEASE® and given instructions on how to rate their nausea on a 0-10 scale. They recorded a nausea score when they experienced nausea, then again 3 minutes after using QueaseEASE®. A study nurse called subjects the next day to collect the information.

### FINDINGS

The sample included 70 outpatients who underwent abdominal surgery. Twenty-five participants (36%) reported experiencing PDN and their concomitant use of QueaseEASE®. There was a significant difference in mean age of those reporting PDN (37 years) versus those without nausea (48 years,  $P = .004$ ) as well as a significant difference in mean intravenous fluid intake during hospitalization of those reporting PDN (1,310 mL) versus those without nausea (1,511 mL,  $P = .04$ ). The PDN group had more female participants (72% vs 42%,  $P = .02$ ), more participants that were less than 50 years of age (84% vs 53%,  $P = .02$ ), and received more opioids (100% vs 76%,  $P = .006$ ) than the no nausea group.

The 25 PDN participants reported 47 episodes of PDN in which they used

QueaseEASE®. For all of the 47 PDN episodes experienced, participants reported a decrease in nausea scale (0 to 10) after the use of QueaseEASE®; for 22 (47%) of the PDN episodes experienced, a nausea scale of 0 after using QueaseEASE® was reported. The mean decrease in nausea scale for all 25 participants was 4.78 (62.12) after using QueaseEASE®.

### CONCLUSIONS/DISCUSSION

This study found that the aromatherapy QueaseEASE® was an effective treatment of PDN in select same day abdominal surgery patients. Every subject that used QueaseEASE® for PDN reported some level of relief from the nausea and in half of all the PDN episodes, the nausea was completely eliminated. This study was limited by a small sample size and lack of a control group. As PDN occurs in approximately one third of outpatient surgeries and the number of same-day surgeries continues to increase, more research is needed to identify effective self-care strategies for patients who suffer from this debilitating complication.

Mother of 13 year old patient: "QueaseEASE® has really helped to decrease his anxiety with port access and also prior to procedures under anesthesia. He no longer needs to take Ativan before his port is accessed."

### IMPLICATIONS FOR PRACTICE AND RESEARCH

Aromatherapy is an effective and practical treatment for PDN. Research should focus on the effectiveness of aromatherapy in Phase I and II recovery.

**INTRODUCTION**

CHH Short Stay recognized that PONV was a challenge with day stay patients. IV medication used to treat PONV is sedating, making it difficult to discharge patients.

**METHOD**

ASPAN has recognized postoperative and post-discharge nausea and vomiting (PONV/PDNV) as one of the most commonly occurring postoperative complications, frequently resulting in prolonged postoperative stay, unanticipated admissions and increased healthcare costs.

**RESULTS**

CHH Short Stay conducted a small trial study with QueaseEASE®. We found 85% of patients were satisfied and had total relief of nausea. We plan to continue conducting an evidence based nurse practice study to implement the use of QueaseEASE®. Data collection will be obtained through Epic and post op phone calls.

**RESULTS**

61 – Total QueaseEASE® Used

10 – Not used according to protocol (ie. Preop or as second line antiemetic in PACU) so eliminated from all study results

17 of the 51 study patients – Needed further tx for nausea (33%)

3.45 – Average Relief in PACU after QueaseEASE® of the 51 study patients (on scale of 1 to 5, with 5 being the highest)

3.43 – Average Relief at discharge after all tx of the 51 study patients (on scale of 1 to 5, with 5 being the highest)

**POSTOPERATIVE CALLS**

36 of the 51 test cases were reached postoperatively (70%)

3.83 – “Did QueaseEASE® provide you any relief from nausea after surgery?” - perception at postoperative call (on scale of 1 to 5, with 5 being the highest)

17 of the 36 reached by phone continued to use QueaseEASE® postoperatively (47%) (Note: many did not continue to use the QueaseEASE® because they did not need it)

31 of the 36 reached by phone would like to receive QueaseEASE® if they had surgery again (86%)

31 of the 36 reached by phone would recommend QueaseEASE® to others (86%)

35 of the 36 were satisfied with treatment they received for nausea (97%)

**NOTES**

On 3/6/13 - Dr. Lynam, “Can I have more QueaseEASE® for my L&D patients. The patients love it and it has worked very well.”





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Ambulatory Surgery Center Post Operative RN's

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**PRODUCT EVALUATION PURPOSE**

To determine if the product is clinically acceptable

**RESULTS**

62% of patients had relief from their nausea after using QueaseEASE® Most nurses and patients found it easy to use  
Average patient rating: 4.5 out of 5

**RESULTS**

CHH Short Stay conducted a small trial study with QueaseEASE®. We found 85% of patients were satisfied and had total relief of nausea. We plan to continue conducting an evidence based nurse practice study to implement the use of QueaseEASE®. Data collection will be obtained through Epic and post op phone calls.



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Ambulatory Surgery Center Post Operative RN's

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**DEMOGRAPHICS**

Product used on 20 patients (2 male, 18 female)  
Mean age = 41.2 years

**PROCEDURES**

- |                        |         |                     |              |
|------------------------|---------|---------------------|--------------|
| 1 Gastro / Colonoscopy | 1 Tubal | 1 Lesion Removal    | 2 I&D Rectal |
| 1 I&D Hematoma         |         | Abscess             | 2 Lap Appy   |
| 2 Lap Chol's           |         | 1 C-Section         |              |
| 2 Orif Ankle           |         | 1 Hysteroscopy      |              |
| 2 LAVH                 |         | 1 Lap Removal Ovary | 1 DHS Hip    |
| 2 Hemorrhoidectomy     |         |                     |              |

**RESULTS**

- 50% - Total Relief from Nausea
- 40% - Some Relief from Nausea
- 10% - No Help with Nausea

**CONCLUSION**

The product is hand-held so it can be immediately available to the patient. It was well received with our patients and had a favorable outcome. This product was also used on Med/Surg, OB, ER and SCU on 19 occasions during the month. A product like this is needed as an adjunct therapy.

Of the two patients that reported no improvement with nausea, they both did not receive any nausea medications intra/op.

No patients refused to trial the product.

**PATIENT COMMENTS**

- "I loved QueaseEASE®. I thought it was great. I used it again when I got home"
- "I took it home and used it the first and second day and it helped"

#### **PURPOSE**

The purpose of this quality improvement study was to compare the patient and provider's satisfaction with isopropyl alcohol to QueaseEASE® aromatherapy in reducing PONV. A secondary outcome was to evaluate differences in PACU stay times between patients that were given isopropyl alcohol to inhale versus patients given QueaseEASE® aromatherapy to inhale.

#### **METHODS**

The design of this project is descriptive and exploratory.

This project was a quality improvement project that evaluated aromatherapy as a complimentary therapy for the management of PONV. The team consisted of Anschutz Outpatient Pre-Operative and Post Anesthesia Care Unit (AOP Pre/PACU) nurses. All participants were post-operative outpatients with PONV in the AOP PACU. The sample size was 100 patients with PONV. The study was conducted from November 2014 to March 2015.

The patients were all treated with traditional treatment modalities. All the patients received aromatherapy as a complimentary therapy modality. The first 50 patients with PONV in the above time period received isopropyl alcohol pads to inhale, and the next 50 patients with PONV received a QueaseEASE® to inhale.

At discharge, the outpatients were sent home with their assigned aromatherapy and instructions on how to use at home if needed. They were also informed they would be asked to rate the helpfulness of the aromatherapy in treating their PONV during their post-operative discharge phone call. The QueaseEASE® pad lasts for 8 hours. An isopropyl alcohol pad dries out in approximately one hour, therefore, additional isopropyl pads were sent home for participants in the isopropyl alcohol group.

During the post-operative follow up phone call, the patient was asked the helpfulness of the aromatherapy in reducing their PONV using a 1-5 scale (with 1 being least helpful, and 5 extremely helpful). Comments were also collected, as well as PACU minutes, gender, age, and type of surgery. At the end of the collection period, the nurses used the same 1-5 scale to rate

their overall experience of the helpfulness of using the aromatherapy as a complimentary treatment for PONV. Comments were also collected.

#### **RESULTS**

N=50. The average score of the isopropyl alcohol pad patient group was 2.54. 16 patients rated it at 1 (least helpful), 7 patients rated it at 2 (slightly helpful), 16 patients rated it at 3 (somewhat helpful), 6 patients rated it at 4 (very helpful), and 5 patients rated it at 5 (extremely helpful).

N=50. The average score of the QueaseEASE® patient group was 3.7. 5 patients rated it at 1 (least helpful), 4 patients rated it at 2 (slightly helpful), 16 patients rated it at 3 (somewhat helpful), 3 patients rated it at 4 (very helpful), and 12 patients rate it at 5 (extremely helpful).

The nurses' overall satisfaction score for the QueaseEASE® product was 4.1. 0 nurses rate it at 1 (least helpful), 0 nurses rated it at 2 (slightly helpful), 1 nurse rated it at 1 (somewhat helpful), 11 nurses rated it at 4 (very helpful), and 3 nurses rated it at 5 (extremely helpful).

The nurses overall satisfaction score for the QueaseEASE® product was 4.1. 0 nurses rate it at 1 (least helpful), 0 nurses rated it at 2 (slightly helpful), 1 nurse rated it at 1 (somewhat helpful), 11 nurses rated it at 4 (very helpful), and 3 nurses rated it at 5 (extremely helpful).

There were no differences in PACU times. The average time for the isopropyl alcohol group was 159 minutes. The average time for the QueaseEASE® group was 156 minutes.

Patients' ages ranged from 16-72. The average patient age was 45. Of the 100 patients with PONV, 69 were female and 31 were male. Of the 100 patients with PONV, 42 had orthopedic surgery, 26 had ENT surgery, 16 had gynecology surgery, and 15 had a variety of general surgeries.

**DISCUSSION**

The PONV Aromatherapy Study confirms the majority of both the patient and the nurses felt aromatherapy was somewhat to extremely helpful as a treatment modality for PONV. Satisfaction with the QueaseEASE® by patients was higher (3.7) than with isopropyl alcohol (2.54). The nurses' satisfaction with QueaseEASE® in reducing patients' PONV was higher (4.1) than with the isopropyl alcohol pads (2.8). No differences were found between the standard of care group (isopropyl alcohol) and the evidence-based practice group (QueaseEASE®) for the time spent in PACU.

This study did not show any numerical difference in PACU times between the two aromatherapies. It is important to acknowledge other variables that affect PACU times. For instance, pain levels, oxygen saturation levels, sedation levels, the nurse's workload, the patient's motivation, transportation arrangements, can all affect the amount of time patients stay in the PACU. How or if these variables contribute to PACU times may be explored in future projects on complementary modalities.

It is well documented in the literature that women have a higher incidence of PONV and this study's results were consistent with this finding. No inferential testing was performed, as this study was a pilot study collecting descriptive data. Further analysis will need to be performed in the future to determine any statistical significance in group differences.

The largest surgical procedure group with PONV in the study consisted of patients undergoing orthopedic procedures. Orthopedic surgeries may have been a larger percentage of our total surgical procedures during the study period. Further study in our department should examine if we are giving those undergoing orthopedic procedures effective prophylactic treatment for PONV compared to those undergoing different types of procedures, such as gynecology patients, whom literature has shown has a higher incidence of PONV.

Further study is needed to examine if aromatherapy reduces the amount of antiemetic medications administered in the PACU. A reduced use of antiemetic medication could impact health care expenses and decrease unwanted side effects of these medications.

**IMPLICATIONS**

This quality improvement project demonstrated that both the patients and the nurses were more satisfied with the QueaseEASE® product in treating and managing PONV in comparison to the current standard of care of using an isopropyl alcohol pad. The evidence-based approach using QueaseEASE® during this project shows promise in reducing PONV among our patients.

Several different units in the hospital have also shown an interest in obtaining this product to help comfort their patients. Many hospitals, including local hospitals, are now offering patients more complimentary therapies. Patients at the University of Colorado Hospital may expect to have selections such as aromatherapy offered to them during their stay as well.

Ronald M. Malit BSN, RN, CPANN, CAPA & Paschale Dorismond-Parks  
BSN, RN, CPAN • Houston Methodist Sugarland Hospital

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**INTRODUCTION/PROBLEM**

Unavailability of non-pharmaceutical therapy for PONV in Houston Methodist Sugar Land Hospital

**PURPOSE**

To improve management of PONV in the immediate postoperative period and 24 hours post discharge.

**FINDINGS**

Between September and October 2015, a total of 43 subjects were included in the EBP project.

Results showed aromatherapy was more effective in treating mild nausea than moderate nausea and was not able to totally relieve severe nausea.

Subjects who did not achieve total relief from nausea had 3+ Apfel risk score of PONV.

Among subjects, only 40% required antiemetics, decreasing usage by 60% when compared to past practice.

Limitations: Low incidence of PONV among subjects.

A survey of all AOD and PACU nurses suggest that aromatherapy was easy to use, beneficial for the patient, and 100% recommended inclusion to the multi-modal therapy for PONV.

Favorable results of this EBP project promoted continued use of aromatherapy on AOD patients with PONV in the PACU.

Implementation on patients start on November 2015.

**FUTURE ACTIONS**

Further studies to assess the effect of aromatherapy on clinically meaningful outcomes (i.e. patient satisfaction relating to comfort, length of hospital stay and its applicability in other areas).

Wendy Hunter, RN

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**PRODUCT EVALUATION PURPOSE**

To determine if the product is clinically acceptable

**RESULTS**

There was a 15 minute decrease in PACU Phase I time with the use of QueaseEASE<sup>®</sup> as well as a 37% decrease in Phenergan use and over 50% decrease in Kytril use.

82% of patients felt that the QueaseEASE<sup>®</sup> tabs helped relieve their nausea.

Lois M. Stallings-Welden, DNP, RN, CNS, Mary Doerner, MSN, RN, CPAN, CAPA, Elizabeth (Libby) Ketchem, MS, BSN, RN, CWS, NE-BC, Laura Benkert, BSN, RN, CAPA, Susan Alka, RN, Jonathan D. Stallings, PhD

**PURPOSE**

To determine effectiveness of aromatherapy (AT) compared with standard care (SC) for postoperative and post-discharge nausea and vomiting (PONV/PDNV) in ambulatory surgical patients.

**DESIGN**

Prospective randomized study.

**METHODS**

Patients (n = 254) received either SC or AT for PONV and interviewed for effectiveness of PDNV. Machine learning methods (eight algorithms) were used to evaluate.

**FINDINGS**

Of patients (64 of 221) that experienced PONV, 52% were in the AT group and 48% in the SC group. The majority were satisfied with treatment (timely, P 5 .60; effectiveness, P 5 .86). Of patients that experienced PDNV, treatment was 100% effective in the AT group and 67% in the SC group.

All (100%) patients with PDNV in the AT group indicated that the AT was effective in relieving their nausea.

**CONCLUSIONS**

AT is an effective way to manage PONV/PDNV

Yuan Zhang, UMass Lowell School of Nursing

**SUMMARY OF FINDINGS**

QueaseEASE effectiveness in treating nausea received an average 9.0 rating (on a scale of 0-10).

68% of the participants who used QueaseEASE rated product effectiveness at 10.

80% of participants reported that QueaseEASE took away nausea completely.

It took an average of 7.6 mins for QueaseEASE (ranging from 1 - 30 minutes) to reduce nausea, compared to an average of 66.8 mins for standard medication (35 - 128 minutes).

QueaseEASE users reported a 5.7 reduction on nausea rating, compared to an average of 2.4 reduction on nausea rating in the standard medication group.

**QUANTITATIVE FINDINGS**

A total of 82 participants were randomly assigned to one of two groups: a green bracelet group consisting of 55 participants (using the QueaseEASE nausea management inhaler for those who experienced postoperative nausea) and a white bracelet group of 27 participants, who were given standard medication in the event of postoperative nausea.

Twenty-five members of the green bracelet group reported postoperative nausea. Among the 27 white bracelet participants, 22 did not report postoperative nausea, and therefore did not receive any special care.

Based on the 25 green bracelet (QueaseEASE) participants versus the 5 white bracelet (standard care) participants, baseline comparisons between the two groups are listed below:

Variables	QueaseEASE Group (n=25) Mean ± SD or Percentage	Medication Group (n=5) Mean ± SD or Percentage
Age	46.1±12.9	43±15.4
Gender	88%	80%
History of PONV	40%	40%
History of Motion Sickness	44%	40%
Smoking	16%	0%
Anesthesia Duration (mins)	90.2±69.8	68.4±36.0
PACU Length	77.8±32.1	84.2±20.6
SDC Length	115.2±50.4	118.2±35.4

**DESCRIPTIVE ANALYSES**

An independent sample t-test suggested that the QueaseEASE group and the standard medication group showed no significant differences related to age, gender, previous history of PONV, history of motion sickness, smoking, anesthesia duration, or duration in the PACU (based on 95% confidence,  $p>0.05$ ).

From a rating of 0-10, QueaseEASE effectiveness in the hospital received an average 9.0 rating with a standard deviation of 1.4, with 68% of the participants rating QueaseEASE effectiveness at 10.

100% of participants reported that they felt QueaseEASE was beneficial.

80% of participants reported that QueaseEASE took away the nausea completely. 20% reported that QueaseEASE helped somewhat, but still felt slightly nauseated.

QueaseEASE effectiveness for postdischarge nausea and vomiting (participants who used QueaseEASE at home) showed an average rating of 9.6 with a standard deviation of 0.8, with 72% of the participants rating QueaseEASE post-discharge effectiveness at a 10.

**BIVARIATE ANALYSES**

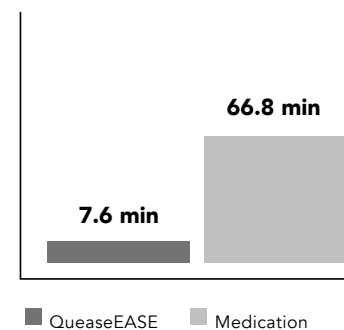
(1) An independent sample t-test suggested that QueaseEASE produced significantly faster effects in treating nausea compared to standard medication ( $t = 7.81, p < 0.001$ ).

It took an average of 7.6 mins for QueaseEASE (ranging from 1 min to 30 mins) to reduce nausea, compared to an average of 66.8 mins for standard medication (ranging from 35 mins to 128 mins).

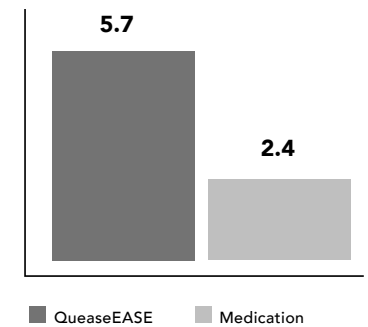
(2) An independent sample t-test suggested that QueaseEASE produced significantly stronger results in reducing nausea compared to standard medication ( $t = 3.36, p < 0.01$ ).

The study showed an average of 5.7 reduction on nausea rating in the QueaseEASE group (responses ranging from 2-10) compared to an average of 2.4 reduction on nausea rating in the standard medication group (responses ranging from 1-5).

How long does it take to reduce nausea in minutes?



What is the reduction on nausea rating?



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