

## **Purpose**

To evaluate the implementation and patient outcomes associated with an asthma self-management program based at a critical access hospital in the southeast region of New Mexico, where asthma-related hospitalizations and emergency department visits are higher than the New Mexico (NM) state average.

## **Background**

In 2011, the New Mexico Asthma Control Program (NMACP) partnered with Nor-Lea General Hospital (NLGH) in Lovington, NM to develop a program of patient self-management education. A pilot program (March-April 2011) was followed by a year (September 2011-August 2012) of sustained program implementation. The University of New Mexico (UNM) Project ECHO (Extension for Community Healthcare Outcomes) provided training and technical assistance to the pilot program staff. Due to budget and staffing issues, the program was discontinued in in 2012. However, strong support among program stakeholders and evidence of efficacy resulted in the renewal of the program in the fall of 2013, with funding from the NMACP.

In evaluating the NLGH Asthma Self-Management Education (ASME) Program, the NMACP seeks to answer both process and outcome questions about this program renewal, including:

- How many patients were scheduled and seen for asthma self-management?
- What are the demographics and insurance status of patients being seen?
- After receiving ASME, can patients and/or their caregivers demonstrate how to use their medications correctly, name their asthma triggers, and use an Asthma Action Plan (AAP) to manage their asthma?
- Have patients' Asthma Control Test (ACT) scores and their quality of Life (QoL) improved from their initial session?
- Has there been a reduction in the number of emergency department (ED) visits and hospitalizations at NLGH due to asthma?

While this report only addresses the evaluation findings from the 2013-14 program, further analysis of the Nor-Lea ASME program using all available data from 2011 onwards is planned.

# **New Mexico Asthma Control Program**

## **2013-14 Nor-Lea GH Asthma Self- Management Education Program Evaluation**

### **Brief Report**

Kathryn Lowerre  
November 17, 2014

## Implementation

Three NLGH staff members (two respiratory therapists and a nurse) in the Cardio-Pulmonary Rehabilitation Unit provide asthma self-management education (ASME) in English and Spanish for patients and caregivers. The nurse and one of the respiratory therapists are certified asthma educators (AE-C) and the other has been studying to take the certification exam. Asthma patients are typically identified and referred for self-management education by NLGH staff, although outreach to other potential referral sources, including physicians who see asthma patients through Children's Medical Services (CMS), are ongoing.

The asthma education staff contact and schedule visits with patients. An initial session with the asthma educator lasts 90 minutes. Second visits are usually scheduled two to four weeks after the initial visit, with a third follow-up visit three months afterwards. However, the scheduling of visits is flexible to accommodate patients' varied needs for self-management assistance and their availability.<sup>1</sup>

### *Patient and Provider Participation*

The majority of scheduled appointments (61 out of 77, or 79.2%) took place. Only three out of 43 patients (7.0%) who had been referred for ASME failed to attend a single session.<sup>2</sup> Spanish language translation was provided for 29 ASME sessions (47.5%). The average (mean) number of sessions per patient was 1.5 (range 1 to 3). Forty patients completed one visit; of those, 14 completed a second visit, and seven completed a third visit.

As previously noted, the Nor-Lea ASME program restarted in October 2013 after several months' hiatus. During the initial weeks of the program's availability, referrals and patient encounters were slow to build. However, increased recruitment and better scheduling (for example, aligning sessions with the office hours of Dr. Sonia Murillo, the pediatrician who has been a pillar of the program since its inception in 2011) resulted in a dramatic increase in the number of patients seen during the final weeks of this contract period (July 27 through September 5, 2014). Over 90 percent of referrals came from NLGH clinics, with 36 patients (81.8% of total) referred by Dr. Murillo.<sup>3</sup>

Given that the numbers seen in Figure 1 for September 2014 only represent the first week of the month, it is anticipated that the 2014 fall monthly totals will be higher than in 2012. Also, given that many of the visits logged were first visits, it is likely that a proportion of those patients will be returning for second and third visits.

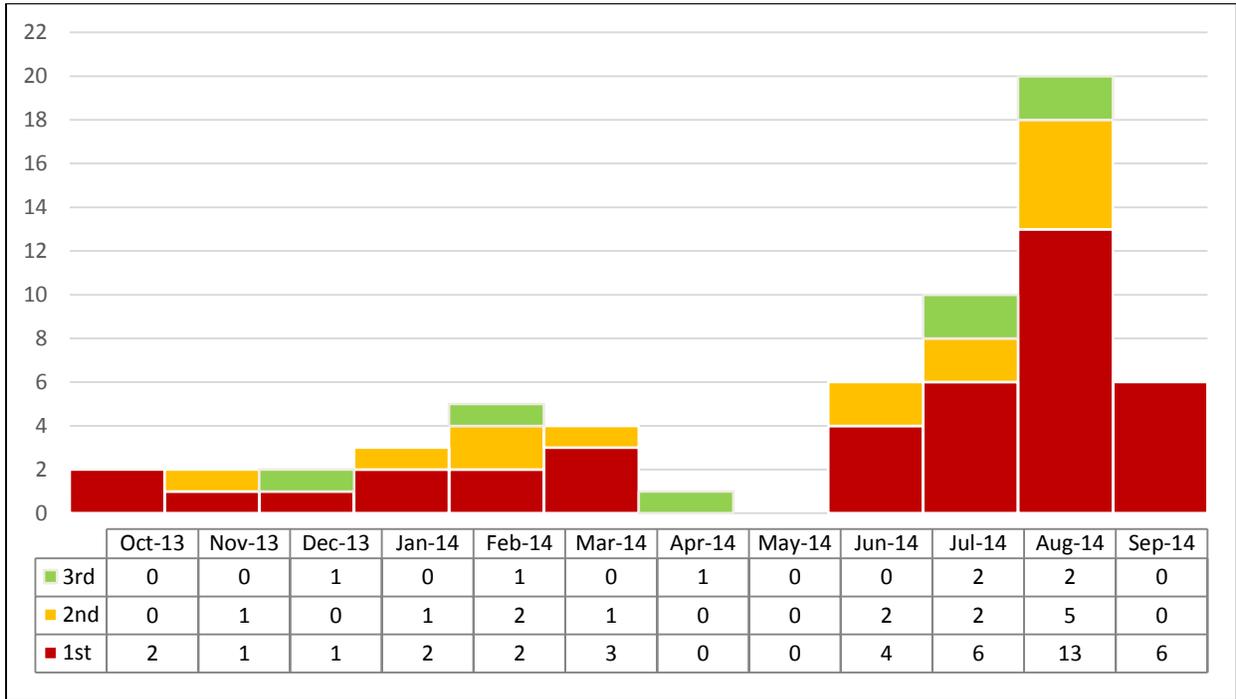
---

<sup>1</sup> Issues affecting scheduling include (but are not limited to) parental work schedules, balancing the needs of multiple children or family members, and the availability of transportation for (non-urgent) clinic visits.

<sup>2</sup> This is consistent with participation during the early pilot phase of the program, and appreciably higher than that during the 2011-2012 year (only 58%). For the results from these earlier program periods, see the reports submitted in January and August 2012. Summary fact sheets are available on the NMACP web site.

<sup>3</sup> These percentages are consistent with data from 2011 and 2012.

**Figure 1. Chronology: Number of Patients Seen for Each Visit Type from October 5, 2013 through September 5, 2014**



Some of the changes in visit numbers from month to month may reflect seasonal changes in healthcare utilization related to asthma. In addition, families preparing for the new school year often bring children in for visits to their healthcare providers (HCPs) in August, and may need their HCPs to sign off on an Asthma Action Plan (AAP) or sports physicals for school.

*Patient Demographics*

Demographic information was collected for all patients, including the three who were referred for ASME but never attended a session. As in previous years, there were more male patients than female ones, and the majority of patients seen were Hispanic (Table 1a).

**Table 1a. Patient Sex, Race/Ethnicity, and Language Preference**

| <b>Sex, Race/Ethnicity, &amp; Language</b>  | <b>Number</b> | <b>Percent</b> |
|---|---------------|----------------|
| <i>Gender (M)</i>                           | 26            | 65.0%          |
| <i>Gender (F)</i>                           | 14            | 35.0%          |
| <i>Race/Ethnicity (White, non-Hispanic)</i> | 8             | 20.0%          |
| <i>Race/Ethnicity (Hispanic)</i>            | 32            | 80.0%          |
| <i>Preferred Language (English)</i>         | 27            | 67.5%          |
| <i>Preferred Language (Spanish)</i>         | 13            | 32.5%          |

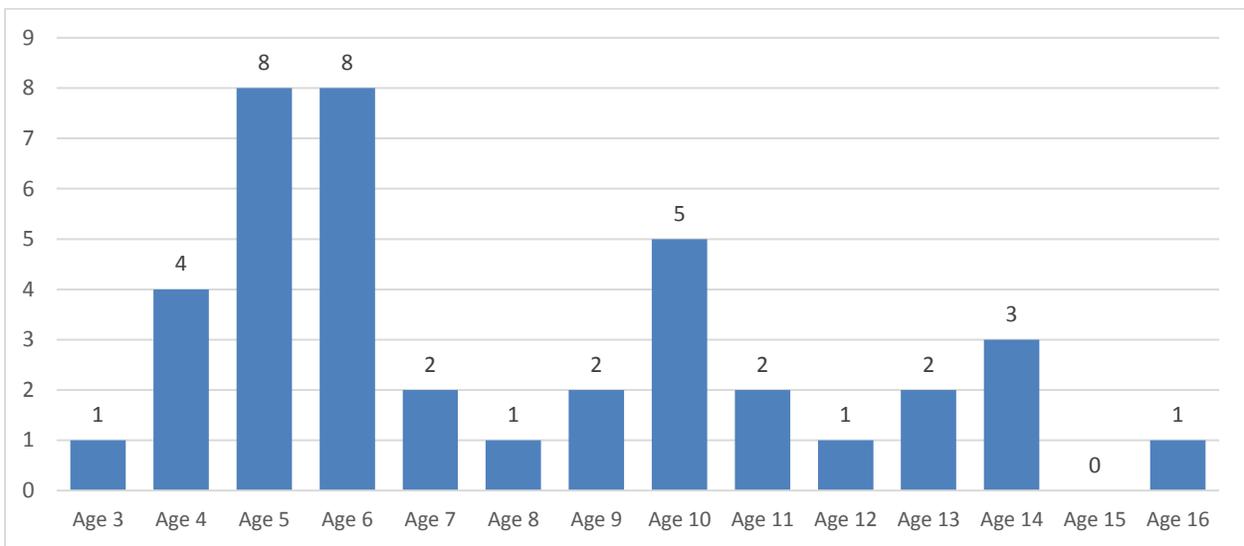
Among the 40 patients who participated in at least one session with an asthma educator, the majority were between the ages of four and eleven (Table 1b). During this program period, no adults were seen for ASME.

**Table 1b. Patient Age Groups**

| Age Group               | Number | Percent |
|-------------------------|--------|---------|
| Age Group (< 4 years)   | 1      | 2.5%    |
| Age Group (4-11 years)  | 32     | 80.0%   |
| Age Group (12-18 years) | 7      | 17.5%   |
| Age Group (> 18 years)  | 0      | 0.0%    |

Patient age in years (Figure 2) was calculated using their date of birth and the date of referral to ASME.<sup>4</sup> The mean age (using whole years) was 7.9 years, and the median age was 6 years, with a range from 3 to 16 years.

**Figure 2. Number of Patients of Each Age Seen from October 5, 2013 through September 5, 2014**



The majority of patients seen (n=33, 82.5%) had insurance through Medicaid. Six patients (15.0%) had private insurance. One patient was reported as having both Medicaid and private insurance at different times.

The three patients who did not complete a session did not show great demographic variation from those who did. They were ages four, eight, and 17. Two were listed as White, non-Hispanic and one as Hispanic. Two were male and one was female. All three had English listed as their preferred language. However, only one patient who did not complete a session had Medicaid and two were without insurance.

*Components of Patient Education*

As in previous program years, the asthma educator documented the topics discussed and reviewed with the patient and/or caregiver at each session. The content and delivery of the ASME sessions conform to the 2007 National Asthma Education and Prevention Program (NAEPP) Guidelines by having ASME

<sup>4</sup> Unless the date of referral was one week or less from the patient’s birth date, in which case they were considered to have reached that birthday.

taught by health professionals trained in asthma self-management, being clinic-based, using an Asthma Action Plan (AAP), developing partnerships with patients and families, and by introducing key messages and essential skills at the first session (since not all patients will complete more than one session).<sup>5</sup> Educational material and reminders are adjusted to the needs of patients who return for additional sessions.

**Table 2. Asthma Self-Management Education Topic by Visit Number**

| Topic                                | 1st Visit (n=40) |      | 2nd Visit (n=14) |       | 3rd Visit (n=7) |       |
|--------------------------------------|------------------|------|------------------|-------|-----------------|-------|
|                                      | N                | %    | N                | %     | N               | %     |
| <i>Asthma Action Plan</i>            | 39               | 97.5 | 14               | 100.0 | 7               | 100.0 |
| <i>Medication Use</i>                | 39               | 97.5 | 14               | 100.0 | 7               | 100.0 |
| <i>Triggers</i>                      | 39               | 97.5 | 14               | 100.0 | 7               | 100.0 |
| <i>Disease Management</i>            | 39               | 97.5 | 14               | 100.0 | 7               | 100.0 |
| <i>Other: Use of Aerochamber</i>     | 18               | 45.0 | 10               | 71.4  | 4               | 57.1  |
| <i>Other: Use of Peak Flow Meter</i> | 5                | 12.5 | 4                | 28.6  | 2               | 28.6  |

Among the topics discussed during ASME sessions, under “other topics” the asthma educators repeatedly noted two specific topics (the use of an Aerochamber and the use of a peak flow meter). Although these topics could be grouped under the general categories “medication use” and “disease management” they have been listed separately in Table 2 due to their emphasis in the program reporting documents and discussion with the asthma educators.<sup>6</sup>

**Sustainability**

As the majority of patients were on Medicaid and the NMACP was providing payments to NLGH for ASME sessions, no reimbursement claims for ASME were submitted by NLGH for this year.<sup>7</sup> The New Mexico Council on Asthma (NMCOA) is working to extend the number of insurance providers in NM who reimburse adequately and consistently for ASME services. This will also be an NMACP focus during the coming year.

**Patient Outcomes**

The evaluation plan for this program sought to demonstrate the impact of ASME program participation on patients’ knowledge and understanding of asthma management, their quality of life, and their physical health.

*Patient and Caregiver Knowledge and Understanding*

Among the 40 patients who completed at least one visit with an asthma educator, most demonstrated an increase in their knowledge about key ASME topics. Patients and caregivers answered specific questions about asthma triggers, the proper use of medications prescribed for them, and their Asthma Action Plans (AAPs). At the beginning of their first session, only a minority of patients and caregivers

<sup>5</sup> See [http://www.nhlbi.nih.gov/files/docs/guidelines/05\\_sec3\\_comp2.pdf](http://www.nhlbi.nih.gov/files/docs/guidelines/05_sec3_comp2.pdf)

<sup>6</sup> Additional topics were also listed under “other” (< 3 patients each) reflecting specific patient needs.

<sup>7</sup> According to the August 2012 report of evaluation findings, only 20% of claims filed during the Nor-Lea ASME program’s first year were paid.

were confident and competent in demonstrating essential asthma self-management knowledge and skills.

**Table 4. Patients and/or Caregivers Who Demonstrated Understanding of Key ASME Topics before ASME Sessions**

| Topic  | Before Session |             |               |               |
|--|----------------|-------------|---------------|---------------|
|  | Patient (n)    | Patient (%) | Caregiver (n) | Caregiver (%) |
| <b><i>Demonstrated Proper Technique Using Spacers/Inhalers</i></b>             |                |             |               |               |
| <i>1st Visit (N= 40)</i>   | 3              | 7.5%        | 8             | 20.0%         |
| <i>2nd Visit (N=14)</i>  | 7              | 50.0%       | 6             | 42.9%         |
| <i>3rd Visit (N=7)</i>   | 6              | 85.7%       | 6             | 85.7%         |
| <b><i>Demonstrated Understanding of When to Use Prescribed Medications</i></b> |                |             |               |               |
| <i>1st Visit (N= 40)</i>   | 2              | 5.0%        | 7             | 17.5%         |
| <i>2nd Visit (N=14)</i>  | 3              | 21.4%       | 9             | 64.3%         |
| <i>3rd Visit (N=7)</i>   | 4              | 57.1%       | 7             | 100.0%        |
| <b><i>Could Explain How to Use Their Asthma Action Plan</i></b>                |                |             |               |               |
| <i>1st Visit (N= 40)</i>   | 0              | 0.0%        | 1             | 2.5%          |
| <i>2nd Visit (N=14)</i>  | 1              | 7.1%        | 8             | 57.1%         |
| <i>3rd Visit (N=7)</i>   | 0              | 0.0%        | 7             | 100.0%        |
| <b><i>Could Explain Their Asthma Triggers and How to Avoid Them</i></b>        |                |             |               |               |
| <i>1st Visit (N= 40)</i>   | 1              | 2.5%        | 5             | 12.5%         |
| <i>2nd Visit (N=14)</i>  | 2              | 14.3%       | 10            | 71.4%         |
| <i>3rd Visit (N=7)</i>   | 2              | 28.6%       | 7             | 100.0%        |

As seen in Table 4, when patients and their caregivers continued participating in ASME over multiple sessions, they often retained important information from previous visits about their medications, AAPs, and asthma triggers. However, some topics clearly required additional review during second and third sessions, such as patients' understanding of their AAPs and triggers.

Following this preliminary assessment, work with the asthma educator allowed patients and caregivers to get up to speed on topics they were not sure about when the session began, and at the end of the same session (see Table 5) many more participants were able to demonstrate their understanding: for example, the number of caregivers able to explain asthma triggers at the first visit went from five before ASME to 35 after ASME.

**Table 5. Patients and/or Caregivers Who Demonstrated Understanding of Key ASME Topics after ASME Sessions**

| Topic  | After Session |             |               |               |
|--|---------------|-------------|---------------|---------------|
|  | Patient (n)   | Patient (%) | Caregiver (n) | Caregiver (%) |
| <b><i>Demonstrated Proper Technique Using Spacers/Inhalers</i></b>             |               |             |               |               |
| <i>1st Visit (N= 40)</i>   | 26            | 65.0%       | 32            | 80.0%         |
| <i>2nd Visit (N=14)</i>  | 12            | 85.7%       | 12            | 85.7%         |
| <i>3rd Visit (N=7)</i>   | 7             | 100.0%      | 7             | 100.0%        |
| <b><i>Demonstrated Understanding of When to Use Prescribed Medications</i></b> |               |             |               |               |
| <i>1st Visit (N= 40)</i>   | 17            | 42.5%       | 35            | 87.5%         |

| Topic   | After Session |             |               |               |
|---|---------------|-------------|---------------|---------------|
|   | Patient (n)   | Patient (%) | Caregiver (n) | Caregiver (%) |
| <i>2nd Visit (N=14)</i>   | 7             | 50.0%       | 13            | 92.9%         |
| <i>3rd Visit (N=7)</i>  | 6             | 85.7%       | 7             | 100.0%        |
| <b><i>Could Explain How to Use Their Asthma Action Plan</i></b> |               |             |               |               |
| <i>1st Visit (N= 40)</i>  | 10            | 25.0%       | 32            | 80.0%         |
| <i>2nd Visit (N=14)</i>   | 5             | 35.7%       | 12            | 85.7%         |
| <i>3rd Visit (N=7)</i>  | 5             | 71.4%       | 7             | 100.0%        |
| <b><i>Could Name Their Triggers and How to Avoid Them</i></b>   |               |             |               |               |
| <i>1st Visit (N= 40)</i>  | 17            | 42.5%       | 35            | 87.5%         |
| <i>2nd Visit (N=14)</i>   | 6             | 42.9%       | 13            | 92.9%         |
| <i>3rd Visit (N=7)</i>  | 5             | 71.4%       | 7             | 100.0%        |

When considering the results in Table 5, remember the patient demographics. A majority of the patients seen during a first visit (n=21) and half of those seen for a second visit (n=7) were less than seven years old when they were referred for ASME. Expecting a six year old to be able to explain his AAP (beyond knowing he has one) is probably not realistic. However, the results for caregivers’ demonstration of their understanding of key elements after each session (ranging from 80 to 100 percent) are strongly encouraging.

*Patient and Caregiver Confidence*

Patients and caregivers were also asked about their confidence in their ability to identify their triggers and avoid them, to use a valved chamber device correctly, to decide when to use controller versus rescue inhalers, and to put their Asthma Action Plan to use. After the first visit, less than half of participants reported feeling “very confident” (range 20-40%) about each topic. Following a second visit, a majority of participants felt “very confident” (range 64-71%) about all topics except identifying and avoiding triggers (substantially lower at 29%) suggesting that this topic may need additional review.

*Quality of Life*

Patients and caregivers were also asked about their perception of any changes to their quality of life (QoL) “since learning more about my asthma and how to control it.” At their second visit, all 14 participants reported feeling that ASME had improved their QoL, either “somewhat” (n=6, 42.8%) or “a lot” (n=8, 57.1%).<sup>8</sup>

*Patient Physical Health*

Asthma educators in the NLGH program have consistently used the Asthma Control Test (ACT), a brief questionnaire which has been found to be valid and reliable, to measure patients’ current level of asthma management.<sup>9</sup> For patients ages 12 and older, scores on the ACT range from 5 to 25, with scores below 16 considered “very poorly controlled” asthma, scores ranging from 16 to 19 considered “not well controlled,” and scores at or above 20 considered “well controlled.” For patients aged 4 to 11 years, the asthma educators use the Childhood Asthma Control Test (C-ACT) which combines questions for the

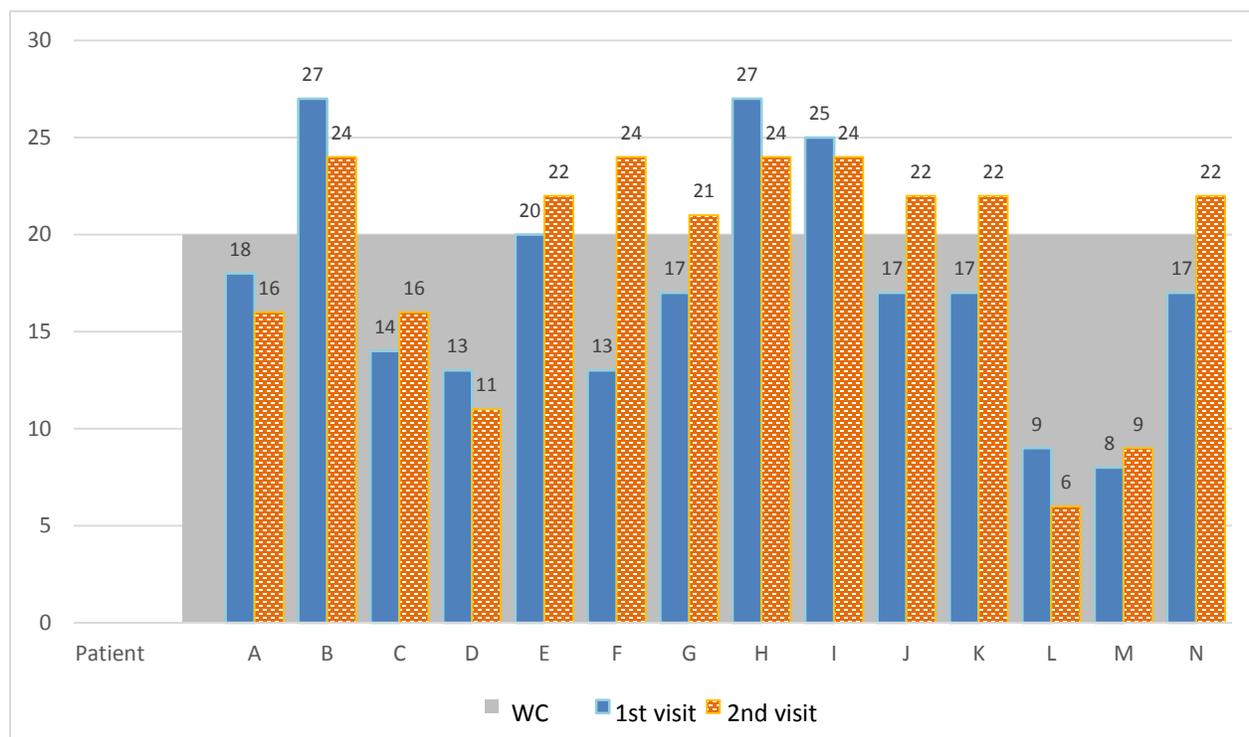
<sup>8</sup> Other options (not chosen by participants) were “not sure” and “none.”

<sup>9</sup> See Schatz M et al. (2006) Asthma Control Test: reliability, validity, and responsiveness in patients not previously followed by asthma specialists. J Allergy Clin Immunol 117 (3): 549-56.

patient with questions for their adult caregiver and has a range of 7 to 27. While the score cutoff for “well controlled” asthma remains the same as for the adult ACT (20 or above), the recommended cut point for “very poorly controlled” asthma is lower, at 12, with an expansion of the “not well controlled” range from 13 to 19.<sup>10</sup>

As can be seen in Figure 2, among the fourteen patients who completed a second visit for ASME, only four had ACT scores indicating their asthma was well-controlled at the first visit. Ten (71.4%) were not well-controlled. At the second visit, this number of participants with well-controlled asthma increased to nine out of 14 patients, leaving only 5 (35.7%) not well controlled.

**Figure 2. Patient ACT Scores for 1<sup>st</sup> and 2<sup>nd</sup> Visits (ACT ≥ 20, “well controlled” asthma)**



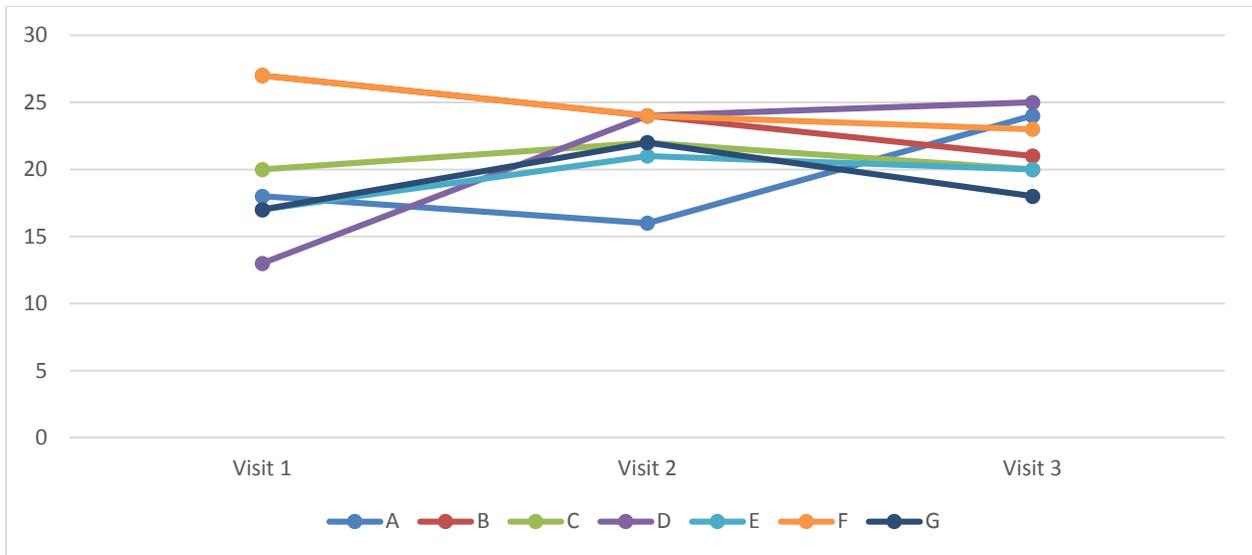
The mean ACT score increased from 17.3 to 18.8, with all patients’ scores included. If the two patients who reported the highest possible ACT score (27) at their first visit are excluded, the magnitude of the increase is greater, from a mean ACT score of 15.7 to 17.9. However, due to two patients with very low scores (<10) at both visits, the mean scores remain below 20 even though the total number of patients with an ACT score in the well-controlled range more than doubled from the first to the second session.

Among the seven patients who completed three visits with the asthma educator, a similar pattern is seen, although again this is somewhat obscured by the two patients who reported the highest possible score (27) on their first visit. However, as shown in Figure 3, four out of seven patients (57.1%) had ACT

<sup>10</sup> Liu AH et al. (2010) The Childhood Asthma Control Test: retrospective determination and clinical validation of a cut point to identify children with very poorly controlled asthma. *J Allergy Clin Immunol* 126 (2): 267-73.

scores below 20 (“well-controlled”) during their initial visit, whereas during the second and third visits, only one of seven patients (14.3%) did.

**Figure 3. Individual Patient ACT Scores Tracked over Three Sessions<sup>11</sup>**



Taken as a group, these patients’ ACT scores converge into the “well-controlled” range (20 to 27), with three of the four patients with the lowest scores at their initial visit showing marked improvement (an average increase of seven points). The only patient with a score below 20 for the third visit (patient G) had achieved a 22 on her previous visit, but at the time of the third visit, the patient had recently participated in the “ice bucket challenge” and was still feeling the effects.<sup>12</sup>

### Community Outcomes

Among all potential community outcomes resulting from the ASME program, the reduction in ED use and hospitalizations with a primary diagnosis of asthma at Nor-Lea GH is of particular interest. Comparison of NLGH data on ED visits and hospitalizations from 2012 to 2013 suggests that asthma hospitalization rates are stable or declining slightly while the crude rate of asthma ED visits decreased from 2012 to 2013 among younger age groups (< 45 years old). The magnitude of the decrease was greatest in children (< 15 years old).

Comparison of the 2012 and 2013 ED visits with a primary diagnosis of asthma in Lea County (including all facilities, not NLGH alone) shows a statistically significant decrease in ED visits for the pediatric population who most often participated in the ASME intervention at NLGH. In 2012, the crude rate among children ages 0-14 was 128.8 per 10,000 population and the 95% confidence interval (CI) was

<sup>11</sup> Alphabetical letters used to designate individual patients are general, and not applied consistently between figures 2 & 3.

<sup>12</sup> This example demonstrates the importance of having qualitative as well as quantitative data about patients, in order to put numbers like ACT scores into context. For more qualitative evidence, see the section “Narratives from Asthma Educators and Comments from Program Participants,” following.

111.6 to 146.0. In 2013, the asthma ED visits in the same age category decreased to 94.0 per 10,000 population (95%CI=79.6 to 108.4). This is further evidence that this intervention had a positive impact.<sup>13</sup>

*Healthcare utilization*

Patients and caregivers self-report better understanding of and compliance with medications (below) together with reduced use of non-routine medical services (clinic, urgent care, and ED visits) following asthma self-management education. As can be seen in Table 4, there is a dramatic decrease in the reported use of emergency or urgent services and of hospitalizations following ASME.

**Table 4. Patients’ Self-Reported Health Care Utilization before and after 1<sup>st</sup> ASME Session**

| <b>Type of Visit</b>               | <b>Prior to 1st visit (previous year, all patients, n=40)</b> |             | <b>Prior to 1st visit among returning patients<sup>14</sup> (n=14)</b> |             | <b>Reported after 1 visit<sup>15</sup> (n=14)</b> |             |
|------------------------------------|---|-------------|--|-------------|---|-------------|
|                                    | <b>Sum</b>  | <b>Mean</b> | <b>Sum</b>   | <b>Mean</b> | <b>Sum</b>  | <b>Mean</b> |
| <b>Emergency Department Visits</b> | 34  | 0.9         | 7  | 0.5         | 0   | 0           |
| <b>Hospitalizations</b>            | 10  | 0.3         | 1  | 0.1         | 0   | 0           |
| <b>Urgent Visits to HCP</b>        | 92  | 2.3         | 33   | 2.4         | 1   | 0.1         |
| <b>Routine Visits to HCP</b>       | 150   | 3.8         | 41   | 2.9         | 11  | 0.8         |

However, caution should be used in interpreting these numbers: all are self-reported and time frames are not equivalent. The second column covers the period up to a year prior to the first visit. Taken in combination with qualitative data gathered during ASME sessions (see *Narratives and Comments* section, below) there is evidence that some program participants view the ASME sessions as directly contributing to a decrease in their need to visit the ED or urgent care, as well as increasing their sense of understanding of asthma and their ability to control asthma signs and symptoms.

*Narratives and Comments from Asthma Educators and Program Participants*

The online reporting tool used to collect evaluation data provides spaces for the asthma educators to note additional details about each session. These brief accounts help to illustrate the value of the program to participants, particularly parents and family members of children with asthma. They also help illustrate some of the challenges in providing ASME, such as parents who do not accept their child’s diagnosis or the need for medication, or who are concerned about costs.

The following excerpts (presented chronologically by month) have been taken from the patient encounter forms.<sup>16</sup>

<sup>13</sup> Additional years of data will need to be analyzed to detect whether this is a confirmed trend. Changes in reporting of asthma as a primary vs. secondary diagnosis, and many other factors (including environmental ones) may be affecting these calculations. In compliance with state statute, actual data for NLGH will need to be provided to the CDC by NLGH staff members.

<sup>14</sup> The prior counts and means for patients who completed more than one visit are listed separately in order to demonstrate that they are similar to those for all patients and to enable comparison with the healthcare use reported by these patients after having completed an ASME session.

<sup>15</sup> This includes all utilization reported at visits 2 or 3 by all patients who completed a second or third session.

<sup>16</sup> Excerpts have been lightly edited. Spelling and capitalization has been silently corrected, grammar has not. In the data collection tool used in 2013-14 there are two free response fields. // indicates a change in report field from the earlier segment.

- (February 2014) Grandmother states she is very happy with the program... the knowledge obtained has been very beneficial to her and her daughter. She states her daughter did not administer patient's medication for almost one week and patient started coughing. Grandmother reminded her about what they learned and once medication was started again the cough subsided in a couple of days. // [Post education session] Patient was able to demonstrate use of inhaler and Aerochamber. Patient has a very good technique. Grandmother also stated that without the knowledge obtained in this program they would have stopped the medication and been back and forth to the doctors.
- (March 2014) Mother and father not convinced of their son having asthma. They state their other children cough also. He just coughs more than they do. // [Post education session] After the asthma education session parents verbalized understanding and are now comfortable with their son being diagnosed with asthma. They now have a better understanding of what asthma is.
- (April 2014) Mother states that she has noticed a difference with asthma symptoms since using Flovent BID. Patient had a cough for a few days but she followed the AAP and did not have to follow up with doctor.
- (June 2014) Mother and patient very eager to learn. Educated mother in Spanish and patient in English.
- (June 2014) Patient had difficulty using the Peak Flow meter proficiently. Patient was able to demonstrate proper technique after observing demonstration.
- (July 2014) Post asthma education, mother states she is very happy she came and she will be compliant with all medication and start using the Aerochamber. She did not believe it could make a difference. She states she is very happy that there is an education program.
- (July 2014) Mother states her daughter's Medicaid does not cover patient's over the counter [OTC] allergy medication... she may not be able to afford it. During visit I called the pharmacy and confirmed that her insurance does not cover OTC medication. After researching found that Family Dollar's generic cost for 30 day supply costs \$3.50 to \$5.00. She states she can afford to spend that amount every month.
- (August 2014) Mother was very eager to learn and very happy that this program exists. Her daughter has had asthma since she was three years old [patient is now a teenager] and she has never before today had an understanding of what asthma really is.
- (August 2014) Patient [a teenager] came in symptomatic today. She states she started coughing three days ago but today her cough is worse... her peak flow was 350 in the morning and 300 at noon. Her peak flow at time of session was 250. She is in her yellow zone. Patient initiated AAP. Post rescue inhaler use, peak flow at 280. Patient will continue to follow AAP. Mother was very impressed to see the AAP really works.
- (September 2014) Mom hasn't been giving the Flovent or Albuterol as prescribed. She verbalizes she can't remember the last time she gave the Flovent. She is aware that she should give Albuterol as needed. She is unaware of what each medication does and the importance of taking the Flovent daily. Post education session: Mom is able to distinguish

between quick relief medication and long acting medication. She understands the Asthma Action Plan and verbalizes she will begin giving the Flovent as prescribed.

Among the other challenges noted by the asthma educators, the most common ones would be familiar to patient counselors and health educators who see patients in almost any clinical context, particularly patients and/or their parents who forget to bring their medications or a list of their prescriptions to their sessions.

### **Discussion and Recommendations**

Although the number of patients seen during the initial months of the new ASME program cycle was small, the robust increase in the number of patients seen during late summer and early fall are highly encouraging for the program's continuation.

Sustainability continues to be a challenge. Having trained asthma educators on staff at NLGH (a goal of the 2011 pilot program) makes the provision of ASME easier than having a traveling AE-C only available during a limited range of dates and times. However, the limited number of health insurance programs which provide reimbursement of claims for asthma education activities and patient self-management makes expansion and replication of the program less likely to take place without system-wide change. The NMCOA is currently (November 2014) working to collect up-to-date information about which insurers are reimbursing and where other insurers currently stand on the issue. In addition, the NMACP has begun discussions with representatives of insurance providers, managed care organizations, and other medical groups to address this issue.

The recommendations which follow are drawn from the evaluation findings.

- The ACP should continue supporting NLGH in providing ASME to patients
- The ACP should continue to evaluate the program and strengthen the evidence of success by including local surveillance data and review of patient medical records
- The ACP should continue to present findings from the NLGH program to partner groups, including NMCOA, and consider expanding presentations to key decision makers (hospital systems, insurance providers) and additional groups at the regional and local level
- The ACP should create and disseminate factsheets on the NLGH and other self-management programs in NM, on an annual basis
- The ACP should continue to support asthma management training for HCPs
- The ACP should partner with NLGH communications and outreach staff to make additional use of media options for communicating the success of NLGH's ASME program

### **Conclusion**

Since 2011, when this asthma self-management education program was originally developed, the NMACP has supported Nor-Lea General Hospital's commitment to improving asthma care and empowering patients and caregivers to manage their chronic disease, reducing their need to access emergency care and improving their quality of life. The 2013-14 findings continue to support the value of this program to the participants.

Evaluation findings also suggest that additional efforts towards expanding this ASME program and initiating similar programs at other clinics have the potential to contribute in a meaningful way to reducing the burden of asthma in New Mexico.