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Patient and provider perspectives on uptake of a shared decision making intervention for asthma in primary care practices

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ABSTRACT

Objective: Poor outcomes and health disparities related to asthma result in part from difficulty disseminating new evidence such as shared decision making (SDM) into clinical practice. As part of a three-arm cluster randomized dissemination study, evaluation of the impact of different dissemination methods was studied. Here we evaluate themes from patient and provider focus groups to assess the impact of a facilitated, traditional dissemination approach, or no intervention, on patient and provider perspectives of asthma care. **Methods:** Using semi-structured questions, twenty-four pre- and post-intervention focus groups with patients and providers took place across primary care practices. Discussions were held in all three arms both before and after the time of intervention rollout. Audio recordings were transcribed and analyzed for themes. **Results:** Across all sites patients and providers discussed themes of communication, asthma self-management, barriers, education, and patient awareness. After the intervention, compared to traditional sites, facilitated practices were more likely to discuss themes related to SDM, such as patient-centered communication, patient-provider negotiation on treatment plan, planning, goal-setting, and solutions to barriers. **Conclusions:** Emergent themes allowed for further understanding of how the SDM implementation was perceived at the patient and provider level. The facilitated implementation was associated with higher adoption of the SDM intervention. These themes and supporting quotes add to knowledge of best practices associated with implementing an evidence-based SDM intervention for asthma into primary care and will inform researchers, practices, and providers as they work to improve adoption of evidence-based interventions into practice.

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Introduction

Asthma is a chronic lung disease with a high healthcare burden that affects more than 25 million people in the United States, including approximately 7 million children (1,2). The economic burden of asthma is also substantial, with 1.8 million emergency department visits, 409,435 hospitalizations, 10.5 million physician office visits, and over 3,500 deaths (3,4). In North Carolina during 2010, the lifetime prevalence of asthma in adults was 12.6%, affecting over 800,000 individuals (5). On average, children and adults with asthma take 50% or less of their prescribed controller medications (6). Previous qualitative analysis involving discussions with asthma patients reveals common barriers to self-management such as adherence to treatment (7,8), including incorrect use of rescue and controller medications and misunderstanding of triggers and symptoms (9–12).

Shared decision making (SDM) is an evidence-based approach to care delivery that involves patients and

providers jointly engaging in decisions around treatments options (13,14). In SDM, both the patient and provider share relevant information, thus partner in their health care decisions. For the patient, this may include their personal values and lifestyle choices; for the provider, this may include pertinent disease information and the benefits and risks of various medications. After discussion of several evidence-based options, the patient and provider can work towards an agreement on a treatment regimen (15,16). This SDM process has been shown to improve asthma outcomes (16–19). Despite evidence of the effectiveness of shared decision making in chronic disease management, adoption into routine clinical practice has been slow (13,16,17,20,21).

Poor outcomes and health disparities related to asthma result in part from difficulty disseminating new evidence and paradigms of care delivery such as shared decision making into clinical practice. A facilitated implementation process, where a trained facilitator works with a

practice during implementation of an intervention, may enhance practice adoption (13,22,23). As part of the Asthma Dissemination Around Patient-centered Treatments in North Carolina (ADAPT-NC) three-arm cluster randomized dissemination study, evaluation of the impact of different dissemination methods was studied. In the ADAPT-NC study, 30 primary care practices across North Carolina with at least 75 Medicaid patients with asthma were randomized into three dissemination arms: facilitated dissemination involving a trained practice facilitator implementing the SDM intervention (13), traditional dissemination through a lunch-and-learn practice presentation, and no intervention.

Qualitative methods, such as focus groups, can be used to assess the effectiveness of implementing interventions into routine medical care, including barriers and facilitators to implementation (24,25). Previous qualitative analysis has confirmed the value of shared decision making in asthma (26) and its effectiveness for asthma guideline adherence improvement (27–30). Eliciting patient and provider perceptions of a SDM intervention in a real-world clinic setting allows understanding of whether adoption of the intervention has taken place. Here, our objective is to evaluate patient and provider perspectives around the uptake of a shared decision making intervention for asthma patients. Our research question asks whether perspectives of asthma treatment vary depending on implementation approach with a focus on assessing adoption of a shared decision making intervention by patients and providers.

Methods

In an earlier Asthma Comparative Effectiveness (ACE) Study (19), the authors developed a novel facilitator-led approach for dissemination of a complex evidenced-based SDM toolkit (16). The facilitator-led approach was based on the use of key principles of community-based participatory research that focused on engagement of practice stakeholders and patients (13,31). Improved outcomes for children with asthma at six practices that adopted the SDM toolkit using this facilitator-led approach were seen (19). In this current study, we evaluated the broader dissemination of the same SDM toolkit across 30 practices comparing the facilitator-led approach with traditional dissemination practices.

The SDM Toolkit used in this project includes 1) a tool to assess baseline asthma control, 2) a guide for eliciting the patient's goals and priorities around medication options, 3) asthma educational materials, and 4) a tool to guide the negotiation process to jointly develop a treatment regimen that accommodates the patient's goals and preferences. At the conclusion, an asthma

action plan is provided. The SDM Toolkit, implementation resources, and a training video can be found at: <https://asthma.carolinashealthcare.org/>.

Setting

Thirty practices in North Carolina were recruited into the ADAPT-NC study by four Practice Based Research Networks (PBRNs) (31). Each PBRN obtained approval from their affiliated Institutional Review Board. Participating practices represented pediatric, family medicine, and internal medicine providers (Table 1). The practices were randomly assigned to one of three arms; 1) Ten facilitated practices received a 12 week rollout of the SDM toolkit as previously described (13); 2) Ten traditional dissemination practices were exposed to two annual lunch-and-learn presentations; and 3) Ten control practices received no intervention.

Focus groups

Twenty-four focus groups were conducted at 14 of the 30 practices that were geographically distributed state-wide across the PBRNs. All 30 practices were offered the chance to host a focus group, however only 14 were able to accept the offer due to time conflicts and scheduling within the time window requested. In order to fully evaluate the implementation at facilitated sites over time and offer continuous feedback, sixteen focus groups (four per PBRN) were conducted in four time periods six months apart. The first round (time period 1) was conducted before the intervention was rolled out (pre-intervention) and remaining three rounds were conducted afterwards (post-intervention, time periods 2, 3, and 4). At traditional sites, two focus groups were conducted pre-intervention in time period 1 and two took place post-intervention in time period 2. At the control sites where no intervention took place, four focus groups took place; two at time period 1 and two at time period 2, time matched with traditional sites.

Sample and data collection

Patients with asthma, guardians, providers, and clinical staff were identified by the practices and invited by members of the research team to the focus groups. Practice staff invited asthma patients and guardians and the practice manager invited providers and clinical staff to attend if available after choosing a date and time suitable for the hosting practice. A waiver of signed consent was approved by the Institutional Review Board and a statement of consent was read at the beginning of each focus group. Each focus group had up to 10 participants and lasted about one

Table 1. ADAPT-NC Medicaid Baseline Practice Level Data: patient payor types, percentage of children, and number of focus groups per study arm.

Practices	# of Focus Groups	Average # Medicaid Patients	Average # Medicaid Asthma Patients (% of Practice)	Average % Children
Control	4	4855	552 (11.4%)	98.7
Pre-Intervention Traditional	2	6131	633 (10.3%)	94.7
Pre-Intervention Facilitated (round 1)	4	2001	203 (10%)	85.9
Post-Intervention Traditional	2	8779	840 (9.5%)	91.8
Post-Intervention Facilitated (round 2)	4	1728	161 (9.3%)	73.8
Post-Intervention Facilitated (round 3)	4	2355	241 (10.3%)	92.1
Post-Intervention Facilitated (round 4)	4	2082	200 (9.6%)	83.1

hour using open-ended questions that explored patient and provider perceptions of asthma care. Questions pertained to medication adherence, goal setting, planning, and the decision-making processes used in asthma care visits. For example, one question asked, “What sort of goals around your asthma care did you and your health-care provider talk about?” Focus group recordings were transcribed and de-identified. Focus group participants were compensated for their time and participation.

Data analysis

Transcripts were divided into three groups: 1) Pre-Intervention, 2) Post-Intervention traditional arm, and

3) Post-Intervention facilitated arm. They were analyzed using the immersion and crystallization technique (32–35). Three to five team members reviewed each transcript, identified relevant quotes, and assigned themes. Team members met weekly to discuss their interpretation of each transcript and disagreements were resolved through discussion (11,36–38). When each group of transcripts was complete, a compiled a list of themes and quotes were shared with each transcript reader for confirmation and verification (39,40). The themes and associated quotes were analyzed for frequency across each group of transcripts (Table 2). Major themes were collected and were further delineated into subthemes based on the frequency of supporting quotes (Table 3).

Table 2. Themes from control, pre-intervention traditional, pre-intervention facilitated, post-intervention traditional, and post-intervention facilitated focus groups.

Theme	Control	Pre-Intervention Traditional	Pre-Intervention Facilitated	Post-Intervention Traditional	Post-Intervention Facilitated
Communication	General communication, relationship with provider, provider-driven communication				Patient empowerment, probing/open-ended questions, health coach, enhanced relationship
Self-Management	At home, avoiding triggers				Patient empowerment, improved diligence, preventative behaviors
Barriers and Solutions	Medication costs, time, clinic flow			Medication costs, time, clinic flow, acute vs well visits	Time worth the investment, SDM to navigate finance conversations, adjustments made to clinic flow
Education	Misconceptions, misinformation, improper medication usage				Improved inhaler technique, providers using teach back, SDM toolkit
Awareness	Some symptom recognition, triggers				Recognize severity, connection between medication usage and control
Planning	None	Extra inhalers		None	Asking patient about feasibility, working with patient
Goal Setting	None	None	Keep out of ER	Keep out of ER, avoid overuse of inhalers	Patient-specific goals, eliciting patient input
Resources	Asthma action plan			Asthma action plan, Inhaler picture	Length and repetition of toolkit questions, summary pages, guide sheet, medication list, understand severity

Table 3. Examples of quotes by theme and practice arm from both patients and providers.

Theme	Subtheme	Quote	Practice
Communication	<i>SDM improves communication</i>	"I am, especially now that we're trying to do more of the shared decision making, trying to work more with the family to see what works for their situation." – provider	Post-intervention facilitated
		"I ask what the asthma means to them. What does your asthma mean to you? How does it impact your life? What concerns do you have? What concerns do you have about your medication? Are you using your medication? What kind of things can we come up with to remind you to take your medication?" – provider	Post-intervention facilitated
	<i>SDM style communication empowers patients</i>	"You have the veto authority, if you like. I have no doubt that if I had said, let's try for another couple weeks, he would have said, okay." – patient	Post-intervention facilitated
	<i>Health coach takes history</i>	"I feel like we are partners because ... they sit and talk to you ... my doctor takes time with me." – patient	Post-intervention facilitated
		"[The patient will] give us their history or whatnot and so they might say 'I think it might be smoke that's triggering it,' or getting cold or whatever they feel the triggers may be and so we take that information and relay it, report it to the physician." – nurse	Post-intervention facilitated
	<i>SDM helps identify patient concerns</i>	"If they're not using a spacer, why? Is it because you're a teenager and you don't want to take it to school with you?" – provider	Post-intervention facilitated
	<i>Provider-driven communication</i>	"I think it's pretty straight forward: you do this, and this, and this. It's not a whole lot of choices. You follow the plan; if you don't follow the plan, your child may not improve, they get worse. To me, it's not a lot of choice." – provider	Control
		"Sometimes education is more important at the time than engagement. You're trying to get them on the Qvar and the albuterol and you're explaining why but it's not, there's not a lot of give and take." – provider	Post-intervention traditional
		"It's just different for everybody, it's different for their plan. I don't know the differences between how much it's going to cost for them as opposed to somebody else even on the same plan. I tell them but there's not a whole lot more I can do." – provider	Post-intervention facilitated
	<i>Patient preferences</i>	"I actually just do what they tell me ... they have the degree and I don't." – patient	Control
Self-Management		"I personally would like to spend a little more time on one, maybe discussing all my symptoms and what might truly be going on and what truly might be triggering it." – patient	Post-intervention traditional
	<i>Provider-driven communication in complex cases</i>	"Some of it is a conversation in my own head when it comes to looking at insurances and stuff like that cause there's some things that I know [are too expensive and] won't get covered. So some of that is an internal conversation." – provider	Post-intervention facilitated
	<i>Existing self-management behaviors</i>	"We try to stay away from triggers. We look for them. We look under the bed for dust. I'm constantly dusting everything but I don't use chemicals." – patient	Pre-intervention traditional
	<i>Child empowerment and ownership</i>	"If you teach kids to be involved they take more responsibility for it. So, they're more likely to use the medicines and they're more likely to use them right." – provider	Post-intervention facilitated
	<i>SDM changed patient behaviors at home</i>	"[The SDM visits] have been really helpful too, like identifying the triggers, like the allergies and some of the inside pets, that way I know what to do and when to do it." – patient	Post-intervention facilitated
		"I've probably been more diligent about making sure I do the preventative stuff for [my child]." – parent	Post-intervention facilitated
	<i>Cost & insurance</i>	"If you want a controller and you don't want to pay a million dollars a month for it, then your choices are very limited." – provider	Control
	<i>Adjusting to SDM flow</i>	"In the short run, it's a bit more time-consuming, but as the conversation and the follow-up visits come, it doesn't take as long." – provider	Post-intervention facilitated
	<i>Navigating financial barriers</i>	"I think that just asking that question 'why' and asking it in the right way, helps you to learn a lot more ... and get an honest answer." – provider	Post-intervention facilitated
	<i>Change in clinic flow from SDM</i>	"I think that with the schedule, before it was, we'll follow-up whenever. Now [post-intervention] it's more scheduled follow-ups so we're capturing flu vaccines, we're capturing the change of seasons. I think that also helps to prevent exacerbations." – provider	Post-intervention facilitated
Education	<i>Misconceptions and misinformation</i>	"So that's what's confusing to me because I still, I'm in denial and think it's more so the allergies ... I don't know if that's why [the providers] diagnose me as having asthma. That's what's confusing to me. If it's actually asthma or just brought on from sinus infection." – patient	Post-intervention traditional

<i>Rescue versus controller medications</i> <i>SDM improved patient education</i>	"I feel I spend a lot of time in visits talking about how to use inhalers and the difference controlling medicines and short-acting [rescue] medicines." – provider	Post-intervention traditional
	"Now I know how to use it instead of just putting it in my mouth, breathing back out through my mouth." – patient	Post-intervention facilitated
	"Before ... [they said] we're going to give you this, this, and this ... but now I can explain more in detail what works well, what my triggers are, what I don't like." – patient	Post-intervention facilitated
<i>SDM and teach back training</i>	"I think that especially the patients who don't have a lot of understanding with their asthma, [the toolkit has] been more helpful ... Maybe makes them think about their reflux. Maybe makes them think about their triggers a little bit more. But especially people who don't have a lot of knowledge about triggers, about how to use an inhaler, about what a peak flow meter is, I think it makes a big difference." – provider	Post-intervention facilitated
	"I'd say: do you have an inhaler, how are you using it? Show me how you use it." – provider	Post-intervention facilitated
	"Being part of the study has really helped me to realize that there are so many variations in how people do things that we never would have thought of ... that's helped me to learn all the different nuances of how people interpret directions." – provider	Post-intervention facilitated
Awareness	"Talking to them about triggers makes them think ... allergies. If they tell me they're using their inhaler every day, their rescue inhaler ... if you're using that every day, something's wrong and you have to get more medicine for you." – provider	Post-intervention facilitated
	"We went to using nebulizer and doing that more often and more preventative ... it does work a lot better. It really does reduce the amount of sudden attacks that are really bad where I do have to use albuterol inhaler." – patient	Post-intervention facilitated
	"We're planning ahead for her not to miss school and not to have exacerbations by keeping in touch with it every single day. Whereas, when she is sick, we're not going to have to go through all we went through before to keep her breathing well." – parent	Pre-intervention facilitated
Planning	"Now we try to ask the patient's opinion and what they think of the plan and do they think the plan will work for them. Is it something they think is feasible for their lifestyle?" – provider	Post-intervention facilitated
	"That's one of the things that I've really learned as far as setting up a plan, working with people rather than just telling them what to do." – provider	Post-intervention facilitated
	"But directly asking me what my goals were with [asthma care]? I don't think they asked." – patient	Post-intervention traditional
Goal Setting	"We try to ask them what their goals are, too. What do they want to get? What do they want to do? That's helpful to discuss, make sure, if they want to be able to play sports, do this before you play sports." – provider	Post-intervention facilitated
	"I like to ask them what they would like, what would help you the most. Cause sometimes what I think is a goal is not going to be one for them ... it used to be, you do this, and this and now I say, what is your goal for the next year?" – provider	Post-intervention facilitated
	"We do have pictures of inhalers and we show [patients] and say can you point to which one you use and they usually can find it on that picture log. And that usually helps us kind of narrow down what they're taking." – provider	Post-intervention traditional
Resources	"I think we could probably do a better job of formalizing the process, doing like symptom-scoring sheets, something to pin things down a little bit more." – provider	Post-intervention traditional
	"It's just helpful for me to have, like with the longer visit and the standardization of the material, to some degree, is helpful to make it more efficient. So it's not necessarily the medicine piece that I really had thought most differently about but the way they present it was helpful." – provider	Post-intervention facilitated
	"I just think that the questions sometimes prompted the patients to think about things they wouldn't have thought about, [such as] oh I do have that or yeah it does seem to be at that time of the year, when you would talk about allergies or things like that." – provider	Post-intervention facilitated
<i>Toolkit prompted more thorough discussion</i>	"I think that it's helpful to have the guide sheet that you give us. And I think it's helpful to have the [health coach or nurse] go in ahead of us and get a lot of the history because I think that makes it more efficient. And to be able to go over the asthma diary and how people can use that, I think is helpful" – provider	Post-intervention facilitated
	"... I can really tell that the parents are like, ah-ha. This is really what's going on here." – nurse	Post-intervention facilitated
	"[The SDM toolkit] did give me the idea of how bad, how serious my child's asthma is ... that idea of knowing what level of asthma was really helpful." – parent of a patient	Post-intervention facilitated
<i>Toolkit improved patient education</i>	"[The provider] showed [the lungs page] to him so he could see exactly what she was talking about. I think it helped him understand what exactly was going on whenever he couldn't breathe." – parent	Post-intervention facilitated

Results

Themes consistent across all sites were communication, self-management, barriers, education, and patient awareness. After the intervention, compared to traditional and control sites, facilitated practices were more likely to discuss themes related to SDM, such as patient-centered communication, planning, goal-setting, and solutions to barriers.

Communication

Patient and providers across all study arms valued communication between patients and providers. There was no specific intervention-related change in communication for post-intervention control and traditional sites compared with pre-intervention. However, in comparison, patients and providers in post-intervention facilitated sites discussed changes in communication style related to the intervention. Providers stated the SDM training led them to speak more with patients' families to understand the complete picture of their asthma. A provider in a post-intervention facilitated practice said, "I am, especially now that we're trying to do more of the shared decision making, trying to work more with the family to see what works for their situation." Both patients and providers commented on how the SDM visits enhanced the patient-provider relationship. One patient said she felt more empowered due to the change in communication style, stating, "you have the veto authority ... if I had said, let's try for another couple weeks, [the provider] would have said, okay." Providers described using more probing questions to understand patient adherence. Some providers in post-intervention facilitated sites mentioned they occasionally assumed low cost was a patient's priority or considered using SDM to reach a shared goal but dismissed it if the patient's asthma care seemed too complicated.

Provider driven (41), rather than shared communication was noted at a post-intervention traditional practice where a provider commented, "sometimes education is more important at the time than engagement. You're trying to get them on the Qvar and the albuterol and you're explaining why but it's not, there's not a lot of give and take."

Self-Management

Across all study arms, many caregivers and patients with asthma stated that they were already practicing asthma self-management behaviors at home. There was no post-intervention change in discussion of self-management

from pre- or post-intervention control, traditional, or pre-intervention facilitated.

Compared to all other practices, patients and providers in the post-intervention facilitated practices discussed more patient empowerment and self-management of their asthma care. One post-intervention facilitated provider stated, "If you teach kids to be involved they take more responsibility for it. So, they're more likely to use the medicines and they're more likely to use them right." Compared to in all other practices, post-intervention facilitated caregivers and patients acknowledged they became more diligent in identifying triggers and understanding how to control asthma better. One patient reported, "[the SDM visits] have been really helpful too, like identifying the triggers, like the allergies and some of the inside pets, that way I know what to do and when to do it."

Barriers and solutions

In all practices, there was consistent discussion of cost barriers to asthma care, such as medication cost and insurance coverage. There was no change in discussion of communication from pre- or post-intervention control, traditional, or pre-intervention facilitated.

Compared to all other practices, providers and patients in post-intervention facilitated practices discussed barriers specifically to implementing the SDM intervention. Both patients and providers in post-intervention facilitated practices indicated the extra time needed for SDM visits was worth the investment; a provider said, "in the short run, it's a bit more time-consuming, but as the conversation and the follow-up visits come, it doesn't take as long." While many participants in all practices brought up the high cost of asthma medications and insurance challenges, only providers in post-intervention facilitated sites stressed using SDM to find out if a patient was not using their medications due to cost and acknowledged they had learned how to communicate better to navigate financial sensitivity of their patients.

Additionally, providers in post-intervention facilitated practices noted a decrease in patients relying on acute visits for asthma control and an increase in attendance at follow-up appointments.

Education

Patients and providers in all focus groups discussed aspects of asthma education, such as misconceptions, inhaler technique, and understanding rescue versus controller inhaler usage. There was no change in discussion of education from pre- or post-intervention control and traditional, or pre-intervention facilitated.

Compared to all other practices, patients and providers in post-intervention facilitated practices discussed improved patient education. A post-intervention facilitated site patient pointed out she better understood triggers and how to use her inhaler after the SDM visits. Another patient said, “before ...[they said] we’re going to give you this, this, and this ...but now I can explain more in detail what works well, what my triggers are, what I don’t like.” Providers in post-intervention facilitated practices noted that the SDM training prompted them to revisit asthma care education to increase their patient’s comfort level and do more teach back to confirm proper inhaler technique. Another provider pointed out how they viewed the SDM toolkit as particularly helpful for patients who needed extra education. Post-intervention facilitated providers described how the SDM intervention improved their patient care, saying, “being part of the study has really helped me to realize that there are so many variations in how people do things that we never would have thought of ...that’s helped me to learn all the different nuances of how people interpret directions.”

Awareness

Across all practices, patients occasionally discussed their awareness of asthma symptoms and triggers. There was no change in discussion of patient awareness from pre- or post-intervention control and traditional, or pre-intervention facilitated.

Compared to the other arms, in the post-intervention facilitated practices there was some patient awareness of asthma severity, symptom recognition, and proper medication usage. One patient explained, “we went to using nebulizer and doing that more often and more preventative ...it does work a lot better. It really does reduce the amount of sudden attacks that are really bad where I do have to use albuterol inhaler.”

Planning

There was no discussion of planning from any control focus groups or post-intervention traditional. Some planning for exacerbations was discussed in pre-intervention traditional and facilitated practices where some patients discussed planning ahead to avoid asthma exacerbations by keeping extra inhalers at school or at sports practice. In terms of the effect of the SDM intervention, there were changes in how patients and providers planned for exacerbations from pre-intervention facilitated to post-intervention facilitated where providers discussed making an effort to ask patients for input on their asthma plan. One provider mentioned “now we try to ask the patient’s opinion and what they think of the plan and do they think

the plan will work for them. Is it something they think is feasible for their lifestyle?” Another provider added, “that’s one of the things that I’ve really learned as far as setting up a plan, working with people rather than just telling them what to do.” One provider summed up the facilitated intervention experience with, “That’s pretty much the goal of all of this, to make sure we’re coming up with a plan that’s going to work for everybody, not something that just looks good on paper.”

Goal setting

There was no discussion of goal setting in control or pre-intervention traditional practices, but providers in pre-intervention facilitated and post-intervention traditional practices discussed goals of keeping patients out of the ER or from overusing rescue inhalers.

In terms of the SDM intervention, patients and providers in post-intervention facilitated practices discussed engaging with each other to make patient-specific and realistic goals. One post-intervention facilitated provider discussed the importance of asking a patient’s preferences, stating, “I like to ask them what they would like ...Sometimes what I think is a goal is not going to be one for them ...it used to be, you do this, this and this and now I say, what is your goal for the next year?” In post-intervention traditional practices, there was no mention of patients participating in goal-setting and one patient stated, “But directly asking me what my goals were with [asthma care]? I don’t think they asked.”

Intervention resources

Participants in all focus group sites were aware of the asthma action plan, an existing resource for asthma care. There was no change in discussion of resources from pre- or post-intervention control and traditional, or pre-intervention facilitated.

While both post-intervention traditional and post-intervention facilitated practices were given the asthma SDM toolkit as part of the intervention, there was no specific reference to this toolkit in post-intervention traditional focus groups. One provider in a post-intervention traditional practice described using pictures of asthma inhalers to help patients identify their own. Compared to focus groups in all other practices, only those in post-intervention facilitated practices discussed the asthma SDM toolkit by patients and providers. These patients and providers disliked the length of time required to complete toolkit materials and repetitiveness of questions, though many providers said the extra questions prompted more probing discussions. Post-intervention

facilitated providers liked the summary pages, history taking guide sheet, and medications listed out by insurance coverage due to their efficiency. A post-intervention facilitated practice provider noted, “I think that’s helpful to have an overall quick snapshot, a little summary of how they’ve been the past few months and kind of see right where [patients’] concerns are. I think that helps to be a little more efficient.” Another post-intervention facilitated provider commented on the overall SDM intervention, saying, “with the longer visit and the standardization of the material, to some degree, [the toolkit] is helpful to make it more efficient. So it’s not necessarily the medicine piece that I really had thought most differently about but the way they present it that was helpful.” Patients in the post-intervention facilitated practices liked the preventative information gained from SDM visits and stated the toolkit helped them better understand their asthma severity; a parent said, “[the SDM toolkit] did give me the idea of how bad, how serious my child is ... that idea of knowing what level of asthma would be really helpful.”

Discussion

This research sought to qualitatively evaluate, through focus groups with patients and providers at practice sites across the three arms of the study, whether elements of an asthma SDM intervention was discussed by patients and providers before and after the time of the SDM intervention rollout.

This analysis identified post-intervention use of the shared decision-making toolkit in practices mostly from the facilitator-led arm, and to a lesser extent from the traditional arm, where components of the toolkit were discussed by patients and providers. The differences in the extent of intervention discussion across the three arms may have been associated with less use and/or knowledge of the SDM intervention at the traditional and control arms. This would be an anticipated result for the control arm where the practices were not exposed to any intervention regarding the SDM toolkit. For the traditional arm, involving two lunch-and-learn discussions of the toolkit, the focus group members did make brief reference to toolkit resource materials being used but not to any other elements of the toolkit. Both providers and patients in post-intervention facilitated practices gave positive and negative toolkit feedback, implying a familiarity with the resources and that the toolkit was effectively incorporated into asthma visits.

While all sites emphasized the importance of communication between patients, providers, and clinic staff, only participants in post-intervention facilitated practice focus groups brought up changes in communication related to

the intervention. There appeared to be a shift in communication style, patients’ self-management behaviors, planning, and goal setting conversations due to the SDM intervention at facilitated sites. The post-intervention facilitated providers’ discussion of solutions to barriers surrounding clinic flow and incorporating SDM asthma visits specifically suggests engagement with the intervention.

A previous study confirms that resources should be perceived as valuable by both patients and providers for frequent utilization to occur (28). All sites highlighted the need for ongoing asthma education, though only in post-intervention facilitated practices did providers mention how the toolkit and SDM intervention aided in providing more thorough asthma education to their patients. What providers liked about the toolkit emphasized their desire for standardization and efficiency. Previous studies have shown that when providers are engaged in intervention adoption, implementation is more effective (42); and although SDM implementation may initially affect cost, efficiency, and workflow, benefits and potential cost savings can outweigh initial barriers (26). Facilitated site providers and patients discussing goal setting and asthma care plans offers further support of the intervention’s uptake into these practices. This study and others reinforce the need for additional education and training of providers to achieve improvements in communication and behavior change required for effective communication (27,43,44) and engaging patients in the decision making with their provider (28,29). These results add support to the concept that facilitated dissemination, involving working with the practice to lead them through the adoption of an intervention to the culture of the practice, may be more effective than traditional approaches, such as lunch-and-learn, in dissemination of complex interventions.

While other studies have shown positive provider perspectives of using a facilitated intervention, to our knowledge there have been no studies examining both patient and provider perspectives of the implementation process for complex chronic care interventions (45–47).

Limitations

Demographics were collected for Medicaid patients only in the practices and not for individual participants in the focus groups. Some practices were able to host more than one focus group over the course of the study (Table 1) while other practices did not agree to host focus groups. Therefore, selection bias in practices that agreed to host focus groups could imply these practices were more likely to implement the intervention. Unique patients were invited to each focus group even if multiple focus groups

were held at the same practice. Some providers participated in multiple focus groups due to small practice size limiting availability of providers in the practice.

Conclusions

The facilitated implementation method was associated with higher adoption of the SDM intervention based on patient and provider perceptions of asthma care. The themes and supporting quotes identified here add to the knowledge of best practices associated with implementing an evidence-based SDM intervention for asthma into primary care and will inform researchers, practices, and providers as they work to improve adoption of evidence-based interventions into primary care.

Abbreviations

ADAPT-NC	Asthma Dissemination Around Patient-centered Treatments in North Carolina
SDM	Shared decision making
PBRN	Practice-Based Research Network
PCORI	Patient-Centered Outcomes Research Institute

Conflict of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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