Implementation of an Acne Management SmartSet to Guide Primary Care Providers' Management of Acne Patients

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Abstract

Background: Primary care providers (PCPs) commonly refer adult acne patients to dermatology due to lack of confidence in treatment initiation and maintenance, resulting in delayed patient care, limited access to dermatology appointments, and an ongoing knowledge gap within the primary care setting. *Purpose:* To support PCPs with acne diagnosis and treatment recommendations by hosting acne education sessions and implementing an Acne Management SmartSet for acne treatment. *Methods:* The DNP student held acne education sessions during staff meetings at two primary care sites, then disseminated surveys to participants to determine if the education session and SmartSet were clinically useful. Data pertaining to the frequency of SmartSet use and number of e-consult and in-person referrals to dermatology for acne was collected over a three-month period and analyzed with descriptive statistics. *Results:* There was a 52% reduction in e-consults made to dermatology for acne management. There were zero in-person acne referrals made to dermatology generated from the SmartSet. 100% of responding PCPs valued the collaborative efforts with dermatology demonstrated by this project. *Nursing Implications/Conclusion:* The coupling of acne education and a decision-support tool may be useful to correct inefficient acne patient workflows between PCPs and dermatologists. Future extensions include collaboration between PCPs and dermatologists for other common dermatologic conditions, such as eczema, topical steroid use, and psoriasis.

Keywords: primary care providers, acne treatment, SmartSet

Implementation of an Acne Treatment SmartSet to Guide Primary Care Providers' Management of Acne Patients: A Quality Improvement Project

Primary care providers receive minimal formal training in diagnosing and treating dermatologic conditions (Beroukhim et al., 2015). Even simplistic dermatologic cases, such as acne, are commonly referred to dermatology because of PCP hesitancy to initiate treatment (Li et al., 2020). The aim of this quality improvement project was to provide dermatology-approved acne education to PCPs supported by a newly created Acne Management SmartSet[1] to improve PCP confidence in treating acne and reduce the amount of referrals to dermatology. Patients would directly benefit from PCP-initiated acne treatment, rather than having to wait for the dermatologist's recommendations from the e-consult or for an in-person appointment with a dermatologist.

Background

Family and internal medicine providers are trained to treat all body systems to ensure confidence and competence in independent practice. However, dermatologic conditions are hardly included in this otherwise comprehensive education. According to a national survey conducted in 2009, family and internal medicine residents spend approximately 10 hours total on dermatology education, accounting for a mere 0.3 percent of their four-year residency (Beroukhim et al., 2015). Primary care providers are likely uncomfortable diagnosing and treating even the most simplistic dermatologic conditions due to this lack of exposure (Kownacki, 2014). Consequently, dermatologists are inundated with referrals for conditions that

[1] A "SmartSet" is a special ordering function within electronic health record Epic software that allows providers to access consolidated order sets pertaining to a specific medical condition.

are well within the scope of practice for a PCP to treat. Studies show that the typical wait time between referral placement and date of appointment in dermatology ranges from 28 to 33 days, longer in many institutions (Heath, 2019; Franki, 2017; Zurfley & Mostow, 2017). Not only does this cycle delay patient care for treatment of uncomplicated dermatological conditions such as acne, it also delays patients with more serious and complex issues from getting time-appropriate medical attention from a specialist.

This issue is compounded by the national shortage of dermatologists. Glazer et al. estimate that dermatologist-to-patient ratio is three to 100,000 across more than 60% of the United States (2017). The answer to the need for increased dermatologic care for acne patients is not found through the addition of more dermatologists; it is to educate PCPs about how to diagnose and treat acne themselves without immediately referring to dermatology. Evidence-based acne education for PCPs is essential to bridge this gap in patient care. One way of doing this is to implement an Acne Management SmartSet to support PCPs in their decision- making during patient visits. Implementation of treatment algorithms or clinical decision-making support tools to assist PCPs in managing acne has proven effective in expediting patient treatment and reducing dermatologists' workload (Li et al., 2020).

Problem Statement

Risk of delayed or inappropriate acne treatment for adult patients is indicated by excessive simplistic dermatology referrals for acne, causing long wait times for appointments and treatment initiation. This results from a lack of PCP education and confidence in diagnosing, treating, and monitoring adult acne.

Organizational "Gap" Analysis of Project Site

The DNP student initiating this project works at an outpatient dermatology clinic and has completed multiple clinical rotations at primary care sites with family and internal medicine providers, and therefore has a unique understanding of the primary and specialty perspectives of patient care for dermatologic issues. Dermatology providers within the practice have disclosed that PCPs almost always refer patients to dermatology for a chief complaint of acne without first having prescribed any of the recommended first-line treatments themselves, especially in the context of the current five-month wait for an available appointment. Primary care providers have verbalized that they have limited experience in diagnosing, treating, and longitudinally managing acne, thus feel more comfortable referring patients to their dermatology colleagues. The DNP student aimed to empower PCPs to independently treat acne via acne educational sessions and SmartSet implementation, thereby expediting patient care and reducing unnecessary referrals to dermatology.

Review of the Literature

Scholarly, peer-reviewed academic research articles written in English and published between January 2016 and January 2022 were included in this review. The search terms “ambulatory care or outpatient care or primary care,” “acne,” and “confidence” were entered into the UMass Amherst Library database. However, this search term combination resulted in too narrow of a pool of literature. Therefore, the terms “ambulatory care or outpatient care or primary care,”,” “dermatology,” and “acne” were entered into the following data bases, producing a total of 489 results: Academic Search Premier (199), Complimentary Index (112), Gale OneFile (129), Directory of Open Access Journals (56), Cumulative Index to Nursing and Allied Health Literature (CINAHL) (25), and ScienceDirect (20).

All 489 abstracts were scanned for relevance. Two duplicative articles and one study published in Spanish were excluded. A total of 41 articles were identified to have some degree of relevance to the literature review topic. Exclusion criteria included opinion-based articles, articles that did not include scientific studies, and those that discussed PCP confidence levels in treating other dermatological conditions aside from acne. Fifteen full-text articles were identified that directly answered the purpose of this literature review: 13 quantitative studies and two qualitative studies. Mixed methods studies containing numeric data were classified as quantitative studies. The level of evidence of the studies included in this review was classified using the Johns Hopkins Nursing Evidence-Based Practice Guidelines (2017). Refer to Appendix A to review of the Guidelines.

Evidence-Based Practice: Verification of Chosen Option

Multiple barriers to initiation of acne treatment in primary care settings were identified in this literature review, the most notable being lack of PCP education about how to diagnose and treat acne. Cyr et al. found that patients living in rural areas were especially vulnerable to delays in treatment if their PCP was uncomfortable initiating treatment (2020). The PCP's diagnostic accuracy is crucial for prompt acne treatment initiation. Hesitation or insecurity about how to properly treat patients living in a rural area causes lengthy waits for sparse and geographically difficult-to-access specialists (Cyr et al., 2020). Even in more populated areas, lack of PCP education and confidence in treating simplistic dermatological conditions significantly impacted patient care (Barbieri et al., 2017; Carmody et al., 2020; Francis et al., 2017; Platt et al., 2020; Tan et al., 2021). Interview studies conducted by Platt et al. (2020) and Tan et al. (2021) highlighted the disordered prescribing sequence of acne treatments, unawareness of the efficacy of oral vs. topical medications, lack of appropriate follow up care, and mismanagement of patient

expectations of results by PCPs. Barbieri et al. (2017) and Francis et al. (2017) concluded that PCPs are skipping over first-line treatments and deviating from evidence-based treatment guidelines. Carmody et al.'s study produced similar findings of PCPs' nonadherence to treatment and monitoring guidelines related to ignorance or unawareness of the standards of care (2020). Solutions presented in the literature to improve PCP diagnostic and prescribing practices and timely patient treatment include development of a triage dermatology clinic (Rea et al., 2021), telederm consults (Dobry et al., 2021; Giavina-Bianchi et al., 2020), treatment algorithms (Borok et al., 2018; Burke et al., 2020; Li et al., 2018; Li et al., 2020), and provider education (Makaula et al., 2021; Sun et al., 2021).

Less Effective Solutions for Acne Treatment

In Rea et al.'s study, PCPs shadowed dermatology residents to expand their knowledge base on simplistic dermatologic conditions and collaborated on treatment modalities in real time (2021). If the patient required a higher level of dermatologic care for a simplistic condition beyond what the PCP could provide, the patient was referred to the Rapid Assessment of Skin Health (RASH) clinic within a large, urban, teaching hospital for an expedited dermatology appointment (Rea et al., 2020). While PCPs appreciated the education and patients appreciated the expeditious treatment process, the establishment of RASH clinics is not feasible for many institutions (Rea et al., 2020). Dobry et al. (2020) and Giavina-Bianchi et al. (2021) used teledermatology consults as an intermediate step between a visit with the PCP and dermatologist. Teledermatology was useful in providing feedback to the PCP in a short time frame and reducing unnecessary referrals to dermatology for conditions that the PCP could manage with the advice of their dermatology colleagues (Dobry et al., 2020; Giavina-Bianchi et al., 2021), yet still did not address the underlying issue of PCP apprehension to diagnose and treat acne.

Highly Effective Solutions for Acne Treatment

The most effective solutions were PCP education and implementation of treatment algorithms. Makula et al. (2020) and Sun et al. (2021) measured the efficacy of in-service sessions to PCPs focusing on the diagnosis and treatment of simplistic dermatologic conditions with quizzes and self-reported confidence scales. Provider competency was significantly higher after education as evidenced by higher post-test scores (Makula et al., 2020), and higher self-confidence ratings (Sun et al., 2021). Borok et al. (2018), Burke et al. (2020), Li et al. (2018), and Li et al. (2020) implemented stepwise treatment algorithms to assist PCPs in treating acne. While treatment algorithms were overall successful at gradually increasing PCP confidence in prescribing patterns, expediting treatment for patients, and reducing the total number of referrals to dermatology for simplistic conditions, they were not well-received by experienced providers or highly utilized if too many steps were required to proceed with treatment (Borok et al., 2018; Burke et al., 2020; Li et al., 2018; Li et al., 2020).

Synthesis

Primary care providers and dermatologists alike agree that the current workflow of acne treatment is unsustainable; dermatologists simply do not have the bandwidth to continue to treat patients for acne without first having the PCP attempt treatment (Li et al., 2020). As previously mentioned, the dermatology referral pool is flooded with referrals for both simplistic and complex patients, delaying care for all patients. Primary care providers conduct visits with frustrated patients who are eager to improve their skin condition, yet falter to commence the appropriate treatments (Cyr et al., 2020; Francis et al., 2017). Simple education sessions paired with a clinical decision support tool is the most effective way to empower PCPs to initiate acne treatment for patients (Borok et al., 2018; Burke et al., 2020; Li et al., 2018; Li et al., 2020;

Makaula et al., 2021 & Sun et al., 2021). Ideally, only patients with refractory acne (unresponsive to the traditional treatment modalities) should be referred to dermatology. This is a seemingly reasonable and attainable goal if PCPs are willing to participate by assuming responsibility for treatment initiation.

Theoretical Framework

Lewin's Three Step Model of Change provides the framework for this project (Hussain et al., 2018). The Model consists of unfreezing the current behavior, implementing a change process, and refreezing the learned behavior. Please refer to Appendix B for a visual of this Model. A successful and sustainable change requires buy-in from the impacted community. According to Shirey (2013), a higher sense of urgency about changing the problem is positively correlated with the success of the implemented action. Dermatologists feel the pressure to reduce unnecessary referrals, especially with the exceedingly long wait for an appointment. Primary care providers are also pressured to learn how to diagnose and treat simplistic acne to maintain patient satisfaction and trusting patient-provider relationships. Stage one is the unfreezing of unsatisfactory behavior. In the context of this DNP project, this is the process of unfreezing the PCPs' immediate referral of acne patients to the dermatology service without first attempting any treatments.

The second step of this Model is changing the unfrozen behavior, which should not be viewed as one-step action but rather as a process (Shirey, 2013). The change process consisted of PCP education about how to diagnose and treat acne, followed by the implementation of an Acne Management SmartSet to assist PCPs with treatment selection. The DNP student's site mentor at the dermatology clinic assisted the DNP student to create and approve the educational

PowerPoint (Appendix C) and Acne Management SmartSet (Appendix D), which were then shared amongst PCPs.

The final step of Lewin's Model is refreezing the new behaviors. The educational component of how to recognize and initiate acne treatment is arguably the most important aspect for sustainability of this intervention. While the treatment SmartSet is useful to support PCPs, basic education about the presentation, diagnosis, and management of adult acne is what will sustain and freeze this intervention into practice to expedite simplistic acne treatment and free up precious dermatology appointment space. Primary care providers will continue to have unrestricted access to the PowerPoint and SmartSet to utilize during their acne patients' visits.

Methods

The overall purpose of this DNP project was to improve PCP comfort of independently managing adult acne patients before referring to dermatology with an e-consult or in person referral. The DNP student provided education via a PowerPoint presentation to PCPs during staff meetings about acne evaluation and treatment and implemented an evidenced-based Acne Management SmartSet for providers to utilize during their visits with patients. This PowerPoint presentation was available for providers to access via e-mail for anyone who was unable to attend the initial presentation. Primary care providers could access the Acne Management SmartSet in the documentation section of Epic in real time during a patient visit. This module prompted the PCP to initiate first-line acne treatments based upon the patient's presentation and the clinical information gathered during the appointment. The SmartSet format guided the PCP through stepwise management of treatment, including length of time to use each therapy before escalating to the next.

The DNP student also sought out to understand if PCPs value collaborative efforts with dermatology colleagues. The DNP student disseminated a version of the Provider Satisfaction with Academic Detailing (PSAD) Survey to PCPs to better understand their perception of the DNP project's utility. Academic detailing is an "educational outreach strategy used to provide healthcare professionals with up-to-date, unbiased, evidence-based information that can improve patient care and health outcomes" (Monteiro et al., 2022, p. 1) occurring between providers with different backgrounds in medicine. Elements of this project are reflective of the dermatologists' approach to treating adult acne, considering their feedback and input on the creation of the PowerPoint and SmartSet. Survey responses provided insight on PCP opinions of the evidence-based, dermatology-approved tools employed for this project, and if collaboration with dermatology colleagues is helpful to their practice.

Goals, Objectives, and Expected Outcomes

The project objectives and outcomes are summarized in the table below:

Table 1

Goals, Objectives, and Anticipated Outcomes

Goal	Objective	Anticipated Outcome
The DNP student developed evidence-based, dermatologist-approved acne workflow/resources to guide PCPs' treatment practices and avoid unnecessary referrals to dermatology.	The DNP student worked with dermatology providers to develop an acne treatment SmartSet and complete the SmartSet with IT by October 1, 2023.	The DNP student successfully developed an Acne Management PowerPoint and SmartSet by August 1, 2022 and October 1, 2022, respectively.

	The DNP student presented the PowerPoint and SmartSet to providers at staff meetings and on a pre-recorded Zoom for those unable to attend. The presentation was available to all providers by October 14th, 2022.	The DNP student presented the PowerPoint and SmartSet to staff meetings on October 28 and November 1, 2022 to PCPs. The DNP student aimed to reach 75% of providers at both sites.
	PCPs from Site A and B completed the PSAD pre-intervention survey before November 1, 2022.	The DNP student collected at least 75% of survey responses from PCPs at both sites via Google Forms.
.	PCPs will utilize the SmartSet to employ first-line acne treatment modalities before referring the patient to dermatology during the months of Nov, Dec 2022, and Jan 2023.	PCPs will initiate same-day treatment for 75% of patients with a visit diagnosis of acne.
	PCPs will build confidence in their acne prescribing practices as evidenced by post-intervention surveys administered during the week of February 6-11, 2023.	The DNP student aimed for 75% of the participating PCPs to complete the post-intervention survey.
There was a reduction in the total number of e-consults make to dermatology because of the acne education PowerPoint and SmartSet	The DNP student reviewed the dermatology e-consult queue monthly for three months and recorded the number of e-	There was a 50% reduction in the number of e-consults to dermatology for acne management.

initiation	consults made to dermatology for acne.	
Primary care providers who use the SmartSet will not refer patients to dermatology from the initial visit.	The DNP student collaborated with an Epic specialist and received monthly analytic reports regarding dermatology referrals from the SmartSet.	There were zero in-person referrals placed to dermatology from providers who utilized the SmartSet during their patient visit.

Project Site and Population

The DNP student implemented the DNP project within a public, community-based health care network, serving over 140,000 patients in the Boston metro-north area across 13 primary care sites. There is only one dermatology clinic within the network to serve this immense patient population. The dermatology provider staff includes two male physicians, one female physician, and two female physician assistants who are responsible for seeing all internally referred adult patients.

The DNP student targeted two primary care sites within this system that employ family medicine, internal medicine, and resident providers. Fifty-six providers from Primary Care Site A and 31 providers from Primary Care Site B were invited to participate in this project. This group of providers includes physicians, resident physicians, nurse practitioners, and physician assistants. The DNP student reminded the family medicine providers that only patients over the age of 18 were eligible for this project, as the dermatology clinic only services adult patients.

Measurement Instruments

A model of the PSAD Scale was used to measure PCP attitudes on collaboration with dermatology specialists. This scale directly applies to the DNP project since it objectively

measures PCP willingness to utilize acne treatment guidelines provided by dermatologists to manage patients in primary care rather than referring to dermatology. The modified PSAD Scale survey and free-text comments aimed to capture PCP willingness to engage with the proposed change in acne treatment practice as well as openness to collaborate with dermatology colleagues.

This public-domain Likert Scale assesses nine different constructs of providers' opinions on academic detailing using a rating scale of one through five ("one" being "not at all," ranging to "five," indicating "extremely"). The constructs include knowledge, effectiveness of communication, effectiveness, usefulness, willingness to repeat experience, acceptability, feasibility, willingness to change, and consistency (Monteiro et al., 2022). Please refer to Appendix E to visualize the PSAD Scale. The following psychometric properties were addressed in the development of this scale: reliability, validity, construct validity, factor analysis, convergent validity, predictive validity, and item response theory (Monteiro et al., 2022). The tool is considered valid because it measures prescriber satisfaction as the developers intended. The scale's reliability was tested via the Cronbach α value, which remained consistently high: $\alpha=0.9285$ (Monteiro et al., 2022).

The PSAD Scale was used as a guide to formulate the questions for the post-intervention survey. Constructs of the DNP student's knowledge, effectiveness of communication, and feasibility were excluded from the survey questionnaire, as the DNP student was most interested in the response to the content of the PowerPoint, usefulness of the SmartSet, and willingness to participate in future collaboration with dermatology. The data extracted from the use of this tool reveals how providers feel about interacting and collaborating with each other, in this case PCPs and dermatologists. The PSAD Scale provides beneficial information beyond the scope of this

project to determine if future collaboration between these subsets of providers would be well-received.

Data Collection Procedure

The DNP student communicated with the medical directors of Primary Care Sites A and B to arrange staff meeting dates (October 28, 2022 and November 1, 2022, respectively) to present the acne PowerPoint and to introduce the Acne Management SmartSet to PCPs. The medical directors e-mailed their providers on the DNP student's behalf by November 7, 2022 with a link to the pre-intervention PSAD Scale survey and the acne treatment PowerPoint. Providers also had an opportunity to free-text feedback about the presentation and project. Google Forms served as the survey collection platform.

Data collection occurred across a three-month span from November 1, 2022, through February 3, 2023. During this time, the DNP student enlisted the help of an Epic analyst to track the frequency of the SmartSet use. The DNP student received monthly reports from the analyst with the following information about the SmartSet utilization: site, provider name, type of visit (televisits vs. in person) and date of visit. Additionally, the DNP student reviewed the dermatology e-consult queue each month and recorded the number of e-consults that were placed for acne management.

The medical directors sent a follow up email to all providers on January 9, 2023 on the DNP student's behalf in an attempt to remind providers of the project and promote provider participation after the winter holidays. The DNP student closed the intervention period on February 3, 2023 and e-mailed the post-intervention survey on February 6, 2023.

Data Analysis

The DNP student entered protected login credentials to access all survey responses on Google Forms. The following demographic data of the participating providers was obtained from each response: place of work (nominal, 1 = PCA, 2 = PCB), number of years practicing medicine (ordinal, 1-4, 5-9, 10-13, 14-19, 20+), and type of provider (nominal, 1 = MD, 2 = PA, 3 = NP, 4 = DO). Descriptive statistics were used to describe participating providers' demographic characteristics.

Next, the DNP student created a line graph to see if there was a trend between the monthly SmartSet and acne e-consult data. The DNP student was unable to run a correlation or paired t-test due to the limited sample size.

Ethical Considerations/Protection of Human Subjects

Approval from the University of Massachusetts, Amherst (UMass) and the project sites' Internal Review Boards (IRB) was obtained prior to initiating the DNP Project (Appendix F). The IRB approval from the pilot sites' is not included in an appendix to protect the confidentiality of the site. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) protected the privacy of all patient health information (Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notification Rules, 2013). Only the DNP student's private credentials were used to access the data. Participating primary care providers' identifiers were only accessible to the DNP student under a two-factor identification, passcode-protected login. Identifiable PCP characteristics were not included in the results. No patient information or identifiers were collected as part of data aggregation for this project. Ethical considerations of this project aligning with the American Nurses Association Code of Ethics with Interpretive Statements (2015) include:

Provision 2: The nurse's primary commitment is to the patient, whether an individual, family, group, community, or population.

Provision 3: The nurse promotes, advocates for, and protects the rights, health, and safety of the patient.

Provision 7: The nurse, in all roles and settings, advances the profession through research and scholarly inquiry, professional standards of development, and the generation of both nursing and health policy.

This quality improvement project did not involve unnecessary intrusion into a person's life, and patient privacy was honored throughout the entirety of the project. This project supported professional development in nursing by providing condensed education and an electronic decision-support tool for PCPs to utilize during visits with patients. The SmartSet especially was meant to improve the workflow and prescribing practices of PCPs who evaluated adult patients with acne.

Timeline

The DNP student obtained IRB clearance from UMass and the project sites on June 23, 2022. The DNP student created an inclusive acne education PowerPoint alongside the site mentor, which was ready for use by August 1, 2022. Dermatology providers, Epic support staff, and the DNP student finalized the Acne Management SmartSet on October 1, 2022. The DNP student presented the acne management PowerPoint, SmartSet, and the pre-intervention PSAD Scale survey during PCP staff meetings on October 28, 2022 and November 1, 2022. The DNP student received reports on the frequency of the SmartSet use and monitored the number of e-consult referrals made to dermatology for a diagnosis of acne over a three-month period (November 1, 2022 through February 3, 2023). At the end of the three-month intervention

period, the DNP student again disseminated the PSAD survey. Please refer to Appendix G for the timeline table.

Results

This DNP project was implemented across two primary care sites in the greater Boston area for a three-month duration. Eighty-seven providers were invited to participate in the acne education PowerPoint sessions held during staff meetings. Unfortunately, only nine providers (10.3%) responded to the intervention and PSAD scale survey; eight responded to the pre-intervention survey, while only one provider responded to the post-intervention survey (Table 2).

Table 2

Sample Characteristics of Participants

Sample Characteristics	*n*	%
Place of Work		
Site A	6	66.7%
Site B	3	33.3%
Number of Years Practicing Medicine		
0-5	1	11.1%
6-10	2	22.2%
11-15	1	11.1%

16-20	0	0
20+	5	55.6%
Provider Type		
MD	8	88.9%
DO	0	0
PA	0	0
NP	1	11.1%

Not all providers who responded to the pre-intervention survey utilized the SmartSet during the intervention period. Most providers who responded to the survey are physicians (88.9%, *n* = 8) who have been practicing medicine for over 20 years (55.6%, *n* = 5).

Due to the underwhelming response rate of providers post-intervention, the DNP student compiled all responses from the survey into a singular table for analysis in Table 3 below:

Table 3

Provider Satisfaction with Academic Detailing (PSAD) Scale Questionnaire

Question: Do you agree with the following statement?	**Not At All**	**Slightly**	**Moderately**	**Very Much**	**Extremely**
Collaboration with dermatology colleagues is an effective way to stay updated on acne treatments.	0	1	2	2	4

The content of the Acne Management PowerPoint presentation is useful to my practice.	0	0	1	3	5
I would be receptive to future presentations on different dermatologic conditions.	0	0	0	3	6
Acne management is an important topic.	0	0	0	6	3
My practice is likely to change as a result of this Acne Management PowerPoint and SmartSet.	0	1	2	4	2
The key messages of the PowerPoint and SmartSet are consistent with how I already practice.	0	0	4	4	1

The results revealed that all participating PCPs find value in collaborating with dermatology providers. The DNP student reflected that the phrasing of the first question was slightly ambiguous. Some PCPs did not feel that collaboration with dermatology is an effective way to stay updated on acne treatments (*n* = 1 “slightly” response, *n* = 2 “moderately” responses). It is possible that these PCPs feel that other methods are more useful, such as journals or studies. Posing the question in a more pointed manner might have produced a different response about the efficacy of collaboration.

Eight of the nine (89%) responding providers noted that the acne management PowerPoint was either very much (*n* = 3) or extremely (*n* = 5) useful when deciding how to assess and treat patients for acne. However, three providers noted that their evaluation and prescribing practices to treat acne were not significantly impacted by the PowerPoint or SmartSet (33.3%), and four providers noted that the messages of the PowerPoint were only moderately

consistent with their current practice (44.4%). The DNP student expected that PCP prescribing practices are either already consistent with the content of the PowerPoint (n = 6), or because PCPs did not find the information in the PowerPoint or layout of the SmartSet to be conducive to the way they practice. It is important to note that all information included in the acne management PowerPoint, education session, and Acne Management SmartSet is evidence-based and was reviewed and approved by dermatologists within the practice, making it less likely that the quality of PowerPoint or SmartSet was in question.

The results indicate that the concept of academic detailing was well-received by this participant pool: all nine of the responding providers (100%) either "very much" (n = 3) or "extremely" (n = 6) agreed that they would be interested in and receptive to future presentations about various dermatologic conditions. Additional comments from participants support this claim. Examples of free-text remarks about the concise, user-friendly nature of the SmartSet include:

"*I have used the SmartSet twice already - it is EXCELLENT!*"

"I found the med list and breakdown of types of acne to be very helpful!"

Other participants expressed interest in future collaboration with dermatology about various topics, including instructions about topical treatments, psoriasis, and eczema:

"Extremely helpful. I would be interested in learning more about conditions requiring a topical steroid, especially with detailed instructions to maximize efficacy while preventing overuse."

"Effective PowerPoint and supportive SmartSet. Would be interested in stepwise treatments with nuanced directions for eczema and/or psoriasis next."

Aside from PCP-willingness to collaborate with dermatology providers, the DNP student also sought out to determine if the SmartSet was useful at reducing the number of e-consults to dermatology for acne. The DNP student retroactively reviewed the queue of dermatology e-consults prior to initiating the intervention as presented in Table 4 below.

Table 4

Frequency of SmartSet Use and Number of E-consults Placed to Dermatology During the Intervention Period.

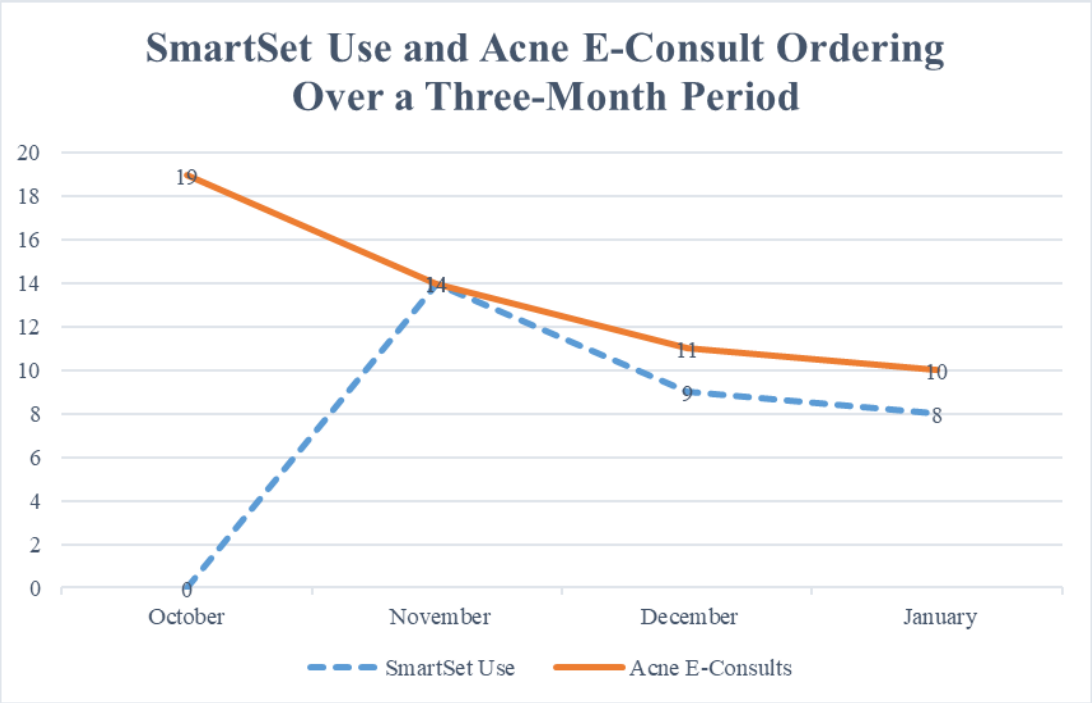
Month/Year	SmartSet Frequency	Number of E-consults
October 2022	x	19
November 2022	14	14
December 2022	9	11
January 2023	8	10
February 2023	0	x

Nineteen patients were referred to dermatology for an e-consult during the month of October before the intervention started. Sixteen different providers utilized the Acne Management SmartSet during the three-month intervention period, with some utilizing the SmartSet more than once.

The frequency of SmartSet usage was tracked as well as the number of e-consults sent to dermatology each month as presented in Figure 1 below.

Figure 1

Line Graph of SmartSet Use and Acne E-Consult Ordering Over a Three-Month Period



The DNP student expected a reduction in the number of e-consults sent to dermatology as a result of increased SmartSet use, thereby producing a negative relationship. There was a 52% reduction in the total number of acne e-consults made to dermatology during the intervention period, indicating that the Acne Management SmartSet was a useful tool for PCPs to utilize during patient visits. Data for February was not included in the graph since the data collection period closed on February 3, 2023, and there were no SmartSets or e-consults ordered during the first three days of the month.

Additionally, the DNP student received monthly reports from the Epic analyst about the SmartSet usage within PCP appointments and checked the dermatology e-consult queue monthly. The Epic analyst included data about if an in-person referral to dermatology was generated within the SmartSet. The DNP student found that there were zero in-person acne

referrals to dermatology generated from the SmartSet, suggesting that the SmartSet was beneficial at supporting PCPs with initiating acne treatment.

Cost-Benefit Analysis

There were no capital investment costs, as the systems needed for these changes were already in place. The DNP student used Google Meets and Microsoft PowerPoint for staff education, Epic for the SmartSet build, and Google Forms for response collection. Non-monetary costs included time spent on creating and revising the Acne Management SmartSet with Epic support personnel and dermatology providers, PCP attendance at staff meetings for the education sessions, PCP utilization of the SmartSet during patient visits, and PCP participation in the pre/post-intervention surveys. Expanded PCP knowledge and improved patient satisfaction were anticipated as well as a reduction in simplistic acne treatment referrals.

Estimated Cost-Savings

Primary care providers who successfully treated acne vulgaris spared patients a visit to the dermatologist. A new patient visit to the dermatology clinic typically costs around $330, whereas the cost of a visit for an established patient of dermatology is approximately $275 (billable to insurance). Co-pays at the time of dermatology visit are dependent upon the patient's specific insurance plan, which are an additional direct cost to the patient. New and established patient visit bills exclude the cost of any additional treatments or prescriptions from that visit. Additionally, avoidance of taking more time off from work/school and arranging transportation for a follow up visit to dermatology are extra savings for the patient.

Discussion

The educational sessions and SmartSet implementation proved to be beneficial for PCPs and the dermatology department. The qualitative data from the PSAD surveys and free-text

comments from providers demonstrate the DNP student's success at meeting the project goals. Participating providers commented that they found the acne education PowerPoint, SmartSet, and overall collaborative effort with dermatology colleagues to be useful. The SmartSet was used 31 times throughout the intervention period and resulted in zero in-person referrals to dermatology for acne treatment. There was a negative relationship between the Acne Management SmartSet use and acne e-consult orders, resulting in a 52% reduction in e-consults, surpassing the DNP student's initial prediction of a 50% reduction.

The SmartSet was effective at improving PCP prescribing practices within patient visits and reducing the workload of dermatologists who are tasked to review e-consults. The combination of education and electronic intervention has proven successful in past studies to improve PCP confidence in diagnosing and treating acne, remedy the long wait times for patients to start treatment, and reduce the burden of extraneous referrals to dermatology (Borok et al., 2018; Burke et al., 2020; Li et al., 2018; Li et al., 2020; Makaula et al., 2021; & Sun et al., 2021).

The intent of this project was to empower PCPs to treat patients themselves rather than referring to the dermatology clinic by educating them about how to assess, diagnose, and treat a relatively low-risk dermatologic condition. Use of the dermatology-backed treatment SmartSet also helped promote PCP confidence with easy access to evidence-based data to drive their plan of care. The DNP student successfully developed an evidence-based education module and decision support tool to improve the current workflow of how PCPs diagnose and treat adult acne.

Project Benefit and Value to Stakeholders and Patients

Patients directly benefit from receiving quality, evidence-based care at one appointment with their PCP rather than having to schedule a secondary visit to a dermatologist. Zero in-

person referrals were made to dermatology from the SmartSet, signifying that PCPs were comfortable initiating treatment with the guidance of the SmartSet. Primary care providers benefit from having direct access to an acne treatment PowerPoint in conjunction with an Acne Management SmartSet to use in real-time during patient visits. Dermatology providers benefit from the reduced burden of acne e-consults and the theoretical reduction of in person acne appointments.

Facilitators

The DNP student was well-supported by the site mentor, dermatology providers, primary care medical directors, and Epic support personnel. The site mentor reviewed the content of the PowerPoint with the DNP student prior to the scheduled presentations during PCP staff meetings. The dermatology providers happily provided input on the layout of the SmartSet. Primary care medical directors set aside time during staff meetings for the DNP student to present, and promptly sent out curated follow up e-mails on the student's behalf. Epic support personnel were pivotal in the construction of the SmartSet and tracking the usage throughout the intervention period. All stakeholders were extremely communicative, timely, and attentive to the DNP student's needs to meet the project goals.

Limitations and Future Recommendations

It was assumed that not all providers would participate in this project due to prior confidence in current dermatological diagnostic and prescribing practices, time constraints to participate in the acne education sessions and produce survey responses, and limited buy-in of the necessity of the project.

The DNP student implemented the project during the peak of the holiday season. Due to provider vacations and clinic closures surrounding the holidays, there were fewer opportunities

for providers to see acne patients and utilize the SmartSet during those times. The DNP student attempted to mitigate this issue by asking the medical directors of the pilot sites to send out a reminder about the project on the DNP student's behalf on January 9, 2023. Extension of the intervention period or selection of different intervention months might have been favorable to the DNP student's data collection.

Similarly, SmartSet utilization was largely dependent upon patients presenting with a chief complaint of acne. Even accounting for periods of completely booked schedules, providers cannot control the chief complaint of patient visits. The SmartSet was only applicable to patients presenting for a visit seeking treatment for acne.

The most significant limitation of the project was that the e-consult review was conducted on a monthly rather than a weekly or bi-monthly basis. Weekly or bi-monthly monitoring of the e-consult queue would have produced a more robust data pool for the DNP student to consider running a paired t-test. Unfortunately, the e-consult queue resets after 30 days so the DNP student could not retroactively collect more data during result analysis. Similarly, the e-consult queue review encompassed all e-consults placed within the care network, not just the two pilot sites. If the DNP student were to roll out this project to the entire network of primary care clinics, the total amount of e-consults placed to dermatology for acne management would be more reflective of the efficacy of the SmartSet use.

Summary

This DNP project was designed to help PCPs improve their knowledge base of evaluation and treatment of acne to improve patient access to care and reduce referrals to dermatology. The qualitative free-text and survey results indicate that PCPs valued the collaboration with the DNP student as an extension of the dermatology clinic. The combination of an educational PowerPoint

and SmartSet provided PCPs with tangible resources to treat acne patients without referring to dermatology. It is also significant that zero of the SmartSet occurrences resulted in an in-person referral to dermatology, suggesting that the SmartSet was efficacious in guiding PCPs in their acne treatment decision-making. Going forward, the DNP student could more regularly monitor the frequency of e-consult orders for acne to dermatology to produce a better yield of results.

One of the most important accomplishments of this project was the creation of the first-ever dermatologic-related SmartSet for this network of providers. The Acne Management SmartSet is an excellent tool for providers to access in real time while seeing patients. Knowing that the treatment options listed within the SmartSet are the recommendations that the specialist would make provides a sense of security for PCPs while prescribing. In the future, it would be beneficial to roll out the educational PowerPoint and Acne Management SmartSet for all PCPs within the network. Continued education and practice with the SmartSet will likely only help empower PCPs to treat acne patients themselves and subsequently reduce the number of extraneous referrals to dermatology.

The education and electronic support tool can also translate into other areas of dermatology. For example, PCPs free-texted recommendations about the creation of a SmartSet to assist with eczema and psoriasis treatment. Many recommended topical treatments have limitations for the application area or length of use. Similarly, many oral or injectable medications used to treat these conditions also require routine lab monitoring and specific administration instructions. Dissemination of a dermatologist's approach on how to not only accurately recognize/diagnose these conditions, but also how to initiate treatment, seems like it would be well-received by PCPs.

This DNP project was successful at introducing academic detailing between dermatology and PCPs to improve the patient experience of care. Education about acne management joined with the creation of a new SmartSet provided a platform for PCPs to improve upon one aspect of their dermatologic patient care. There were no in person referrals made to dermatology for a complaint of acne within any of the completed SmartSets, which is a positive indication for analogous projects in the future.

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Appendix A

Johns Hopkins Nursing Evidence-Based Practice Guidelines

Johns Hopkins Nursing Evidence-Based Practice

Appendix D

Evidence Level and Quality Guide

Evidence Levels	Quality Ratings
Level I Experimental study, randomized controlled trial (RCT) Explanatory mixed method design that includes only a level I quaNtitative study Systematic review of RCTs, with or without meta-analysis	**QuaNtitative Studies** **A High quality**: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence. **B Good quality**: Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. **C Low quality or major flaws**: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.
Level II Quasi-experimental study Explanatory mixed method design that includes only a level II quaNtitative study Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis	**QuaLitative Studies** No commonly agreed-on principles exist for judging the quality of quaLitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers' efforts to meet the appraisal criteria. *For meta-synthesis, there is preliminary agreement that quality assessments of individual studies should be made before synthesis to screen out poor-quality studies[1].* **A/B High/Good quality** is used for single studies and meta-syntheses[2]. The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry. Evidence of some or all of the following is found in the report: • Transparency: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. • Diligence: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. • Verification: The process of checking, confirming, and ensuring methodologic coherence. • Self-reflection and scrutiny: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. • Participant-driven inquiry: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. • Insightful interpretation: Data and knowledge are linked in meaningful ways to relevant literature. **C Low quality** studies contribute little to the overall review of findings and have few, if any, of the features listed for high/good quality.
Level III Nonexperimental study Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis Exploratory, convergent, or multiphasic mixed methods studies Explanatory mixed method design that includes only a level III quaNtitative study QuaLitative study Meta-synthesis	
Level IV Opinion of respected authorities and/or nationally recognized expert committees or consensus panels based on scientific evidence Includes: • Clinical practice guidelines • Consensus panels/position statements	**A High quality:** Material officially sponsored by a professional, public, or private organization or a government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise clearly evident; developed or revised within the past five years **B Good quality:** Material officially sponsored by a professional, public, or private organization or a government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise clearly evident; developed or revised within the past five years **C Low quality or major flaws:** Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the past five years
Level V Based on experiential and nonresearch evidence Includes: • Integrative reviews • Literature reviews • Quality improvement, program, or financial evaluation • Case reports • Opinion of nationally recognized expert(s) based on experiential evidence	**Organizational Experience (quality improvement, program or financial evaluation)** **A High quality**: Clear aims and objectives; consistent results across multiple settings; formal quality improvement, financial, or program evaluation methods used; definitive conclusions; consistent recommendations with thorough reference to scientific evidence **B Good quality**: Clear aims and objectives; consistent results in a single setting; formal quality improvement, financial, or program evaluation methods used; reasonably consistent recommendations with some reference to scientific evidence **C Low quality or major flaws**: Unclear or missing aims and objectives; inconsistent results; poorly defined quality improvement, financial, or program evaluation methods; recommendations cannot be made **Integrative Review, Literature Review, Expert Opinion, Case Report, Community Standard, Clinician Experience, Consumer Preference** **A High quality**: Expertise is clearly evident; draws definitive conclusions; provides scientific rationale; thought leader(s) in the field **B Good quality**: Expertise appears to be credible; draws fairly definitive conclusions; provides logical argument for opinions **C Low quality or major flaws**: Expertise is not discernable or is dubious; conclusions cannot be drawn

1 https://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/6_4_ASSESSMENT_OF_QUALITATIVE_RESEARCH.htm
2 Adapted from Polit & Beck (2017).

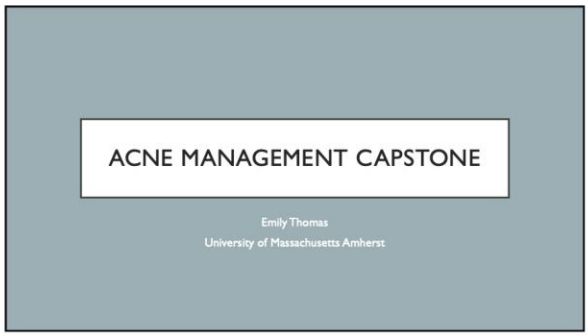
Appendix B

Lewin's Three Step Model of Change

(VisualParadigm, 2022)

Appendix C

PowerPoint Presentation



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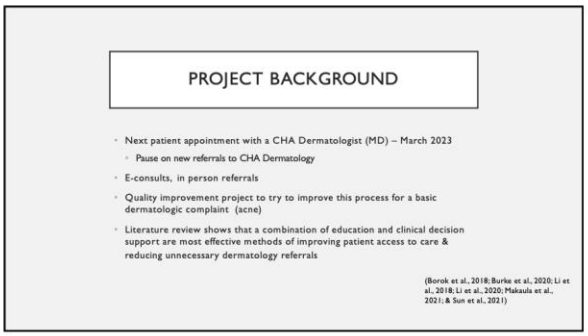

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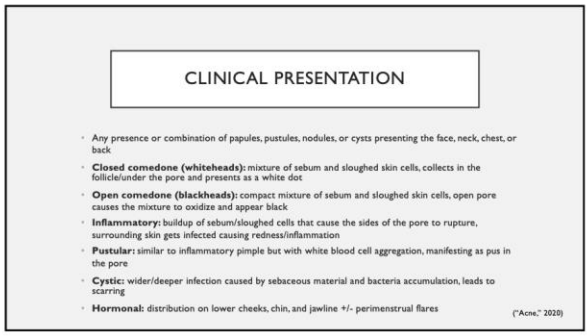

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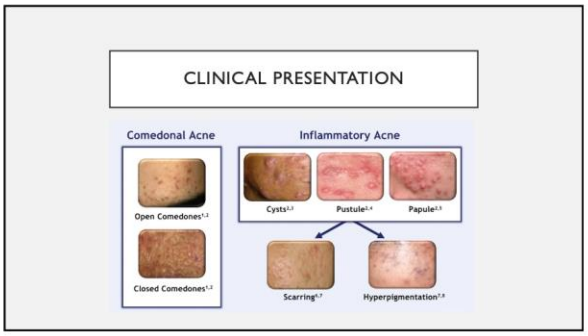

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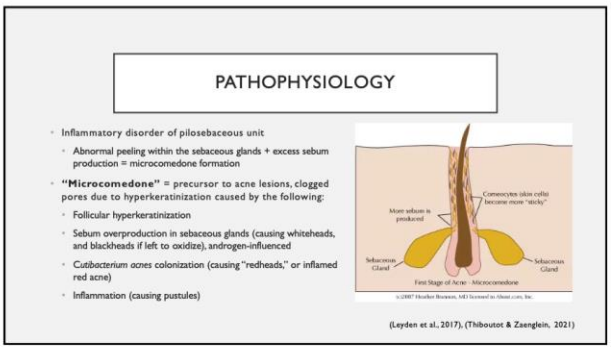

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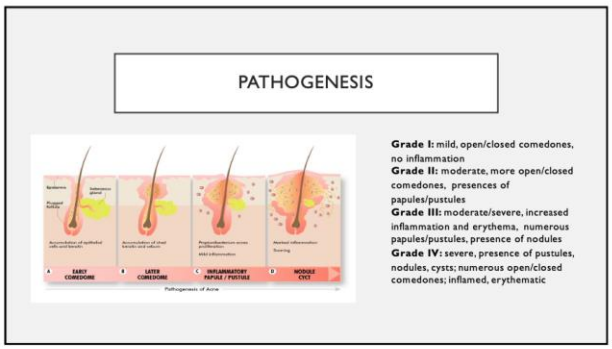

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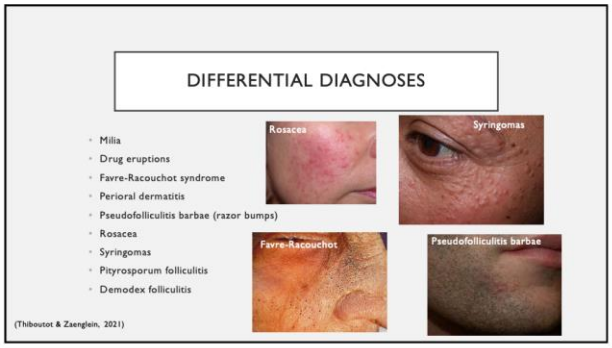

8

MANAGEMENT

- Dependent on the following:
  - Age of onset
  - Medical history including medications
  - Association with menses
  - Other signs of virilization (hirsutism, male pattern hair loss, deepening of voice)
  - Current/prior treatments and response
  - Severity
  - Effect on self-esteem

(Graber, 2021)

9

TREATMENT

- The Basics:
  - Cetaphil or CeraVe cleanser and moisturizer
    - Non-comedogenic, fragrance free, non-irritating
- First Line Treatments:
  - **Benzoyl peroxide (OTC) –** bactericidal
  - **Salicylic acid (OTC) –** chemical exfoliant, reduces sebum production/targets clogged pores
  - **Azelaic acid –** targets clogged pores, better for sensitive skin, helps with skin discoloration, *only pregnancy-safe treatment*
    - **20% cream usually more expensive/not covered**
    - **15% gel less expensive**
    - **10% available OTC (doesn't work as well)**

("Acne," 2022), (Hauk, 2017)

10

TREATMENT (CONT.)

- **Topical retinoids (tretinoin, adalapene) –** comedolytic, encourages cell turnover and collagen stimulation, helpful for acne scarring
  - **Adalapene gel (Differein) is available OTC, less potent than tretinoin**
  - **Tretinoin may require PA, if not covered then $15 with 340b pricing**
    - **0.025, 0.05, 0.01% strengths**
- **Topical antibiotics (clindamycin, erythromycin) –** slow/stop bacterial growth, reduce inflammation, *should be used with benzoyl peroxide to avoid creating abx resistance
  - **Clindamycin gel 1% and clindamycin lotion 1% available (patient preference)**

(Hauk, 2017), (Owen, 2021)

11

TREATMENT CONT

- Oral treatments:
  - **Antibiotics (tetracyclines or macrolides) –** used for moderate/severe, cystic acne, max 3-4 month rx period, continue with topicals
  - **Spironolactone –** anti-adrenergic for hormonal acne, will decreased sebum production, hormonal acne typically located on jawline/cheeks
    - **Typically start at 50 mg, titrate up to 200 mg**
  - **Oral Contraceptive Pills (OCP) –** estrogen-containing OCP, decreases circulating androgens
  - **Isotretinoin –** shrinks sebaceous glands, decreases sebum production which inhibits *C. acnes* colonization

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TREATMENT (CONT.)

- **Isotretinoin** needs to be prescribed by an iPledge-enrolled provider
- iPledge = FDA-required tracking website of those prescribed isotretinoin
- Considerations before initiating isotretinoin:
  - Alcohol use
  - Birth control methods
  - Blood donation
  - Med sharing
  - Psych history
  - Dosing (goal cumulative dose of 120 to 150 mg/kg and acne improvement)
  - Adherence to follow up lab work and follow up appointments

(Owen, 2021)

13

LABS

- Not necessary to diagnose acne
- Necessary for medication management while on oral isotretinon:
  - *Isotretinoin*: CBC, LFTs, triglycerides, urine hcg; frequency dependent on male vs female patient, abnormalities in previous tests, and dose changes
    - Can causes elevated of LFTs and triglycerides
  - *Spironolactone:* monitor renal function if history of renal disease or elevated creatinine, monitor potassium if history of hyperkalemia, if >40 years old

14

PROVIDER EDUCATION

- Pt-specific skin goals and treatment motivation factor into treatment planning
- Managing expectations re improvement time, length of treatment – "less is more" with the right products
- Explanation of what each topical does and how it should be used (including step down/ramp up tips)
- Early intervention with moderate/severe acne
- Pregnancy considerations – no topical retinoids, spironolactone, isotretinoin, topical or oral tetracyclines (doxy, minocycline)

(Graber, 2021)

15

PATIENT EDUCATION

- **All of these medications are contraindicated in pregnancy (topicals/orals)**
  - **Azelaic acid is the ONLY safe acne medication to use!**
- Close attention to exercise patterns, stress, alcohol consumption and diet
  - Skin milk, whey protein supplement, high glycemic food, vitamin B12 supplementation
- Order of application for topicals (medicated topical first, absorption time, followed by moisturizer – or mix if medicated topical is too drying/irritating)
- Side effects of medications:
  - Topical retinoid – redness, burning, peeling, irritation, dryness
  - Spironolactone – dizziness, lightheadedness, headaches, breast tenderness, menstrual cycle irregularities, polyuria
  - Doxy – GI upset, photosensitivity

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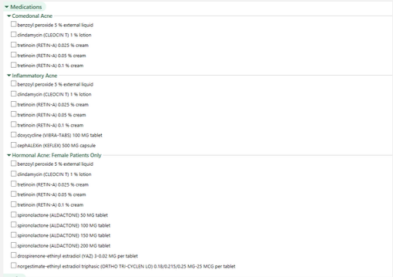
"ACNE MANAGEMENT" SMARTSET

- Development of an Acne Management SmartSet for you to use in real time during your visit with a patient with acne

17

MEDICATION LIST



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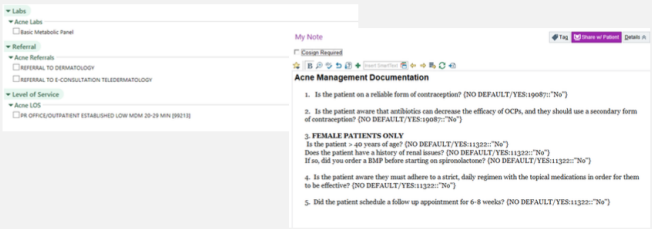
LABS, REFERRAL, & NOTE



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CLOSING STATEMENTS

- CHA analyst will assist with tracking SmartSet use over the next 3 months
- Will monitor number of e-consults and in person referrals to dermatology for acne management
- Pre- and post-intervention survey (will be e-mailed next week)
- Expansion to other CHA sites
- Usefulness of collaboration to help determine future SmartSets/algorithms for other dermatologic conditions

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Appendix D

Acne Management SmartSet

Acne Management Smartset

- Diagnosis
  - Acne Diagnosis
    - [x] Acne vulgaris [L70.0]
- Documentation
  - Acne Management Documentation
    - [x] Acne Management Note
- Medications
  - Comedonal Acne — Click for more
  - Inflammatory Acne — Click for more
  - Hormonal Acne: Female Patients Only — Click for more
- Labs
  - Acne Labs — Click for more
- Referral
  - Acne Referrals — Click for more
- Level of Service
  - Acne LOS — Click for more

CHA OUTPT PHARMACY-MALDEN, MA - 195 CANAL ST. STE 104 781-338-8990

Associate | Edit Multiple | Phase of Care | Providers | Remove | Pend | Sign

Restore | Close | Previous | Next

- Medications
  - Comedonal Acne
    - [ ] benzoyl peroxide 5 % external liquid
    - [ ] clindamycin (CLEOCIN T) 1 % lotion
    - [ ] tretinoin (RETIN-A) 0.025 % cream
    - [ ] tretinoin (RETIN-A) 0.05 % cream
    - [ ] tretinoin (RETIN-A) 0.1 % cream
  - Inflammatory Acne
    - [ ] benzoyl peroxide 5 % external liquid
    - [ ] clindamycin (CLEOCIN T) 1 % lotion
    - [ ] tretinoin (RETIN-A) 0.025 % cream
    - [ ] tretinoin (RETIN-A) 0.05 % cream
    - [ ] tretinoin (RETIN-A) 0.1 % cream
    - [ ] doxycycline (VIBRA-TABS) 100 MG tablet
    - [ ] cephALEXin (KEFLEX) 500 MG capsule
  - Hormonal Acne: Female Patients Only
    - [ ] benzoyl peroxide 5 % external liquid
    - [ ] clindamycin (CLEOCIN T) 1 % lotion
    - [ ] tretinoin (RETIN-A) 0.025 % cream
    - [ ] tretinoin (RETIN-A) 0.05 % cream
    - [ ] tretinoin (RETIN-A) 0.1 % cream
    - [ ] spironolactone (ALDACTONE) 50 MG tablet
    - [ ] spironolactone (ALDACTONE) 100 MG tablet
    - [ ] spironolactone (ALDACTONE) 150 MG tablet
    - [ ] spironolactone (ALDACTONE) 200 MG tablet
    - [ ] drospirenone-ethinyl estradiol (YAZ) 3-0.02 MG per tablet
    - [ ] norgestimate-ethinyl estradiol triphasic (ORTHO TRI-CYCLEN LO) 0.18/0.215/0.25 MG-25 MCG per tablet

My Note

Tag | Share w/ Patient | Details

Cosign Required

Insert SmartText

Acne Management Documentation

1. Is the patient on a reliable form of contraception? {NO DEFAULT/YES:19087::"No"}

2. Is the patient aware that antibiotics can decrease the efficacy of OCPs, and they should use a secondary form of contraception? {NO DEFAULT/YES:19087::"No"}

3. **FEMALE PATIENTS ONLY**
Is the patient > 40 years of age? {NO DEFAULT/YES:11322::"No"}
Does the patient have a history of renal issues? {NO DEFAULT/YES:11322::"No"}
If so, did you order a BMP before starting on spironolactone? {NO DEFAULT/YES:11322::"No"}

4. Is the patient aware they must adhere to a strict, daily regimen with the topical medications in order for them to be effective? {NO DEFAULT/YES:11322::"No"}

5. Did the patient schedule a follow up appointment for 6-8 weeks? {NO DEFAULT/YES:11322::"No"}

Appendix E

PSAD Survey

	Construct	Item	Response scale				
			Not at all	Slightly	Moderately	Very	Extremely
1	Knowledge	The detailer was knowledgeable					
2	Effectiveness of Communication	The detailer was an effective communicator					
3	Effectiveness	Academic detailing is an effective way to stay updated on important topic(s)					
4	Usefulness	The printed material was useful					
5	Willingness to repeat experience	I would be receptive to future visits					
6	Acceptability	This topic was relevant to my practice					
7	Acceptability	This is an important topic					
8	Feasibility	The key messages are feasible to implement in my practice					
9	Willingness to change[a]	My practice is likely to change as a result of this visit					
10	Consistency[a]	The key messages were consistent with my practice					

[a]The construct and question related to items 9 and 10 were added after recommendation from expert panel.

(Monteiro et al., 2022)

Appendix F

UMass IRB Approval

UMassAmherst

Human Research Protection Office

Mass Venture Center
100 Venture Way, Suite 116
Hadley, MA 01035
Telephone: 413-545-3428

Memorandum – Not Human Subjects Research Determination

Date: June 23, 2022

To: Emily Thomas, Nursing

Project Title: *Implementation of an Acne Treatment Algorithm to Guide Primary Care Providers' Management of Acne Patients: A Quality Improvement Project*

HRPO Determination Number: 22-107

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

☐ The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].

☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].

☒ The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].

Submission of an Application to UMass Amherst IRB is not required.

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes. ***Researchers should NOT include contact information for the UMass Amherst IRB on any project materials.***

A project determined as "Not Human Subjects Research," must still be conducted ethically. The UMass Amherst HRPO strongly expects project personnel to:

- treat participants with respect at all times
- ensure project participation is voluntary and confidentiality is maintained (when applicable)
- minimize any risks associated with participation in the project
- conduct the project in compliance with all applicable federal, state, and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.

Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.

Jorge A. Guzman, Assistant Director
Human Research Protection Office

Appendix G

Timeline

Task	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
IRB approval of project from pilot sites and UMass	x									
Creation of acne PowerPoint with site mentor		x	x							
Creation of Acne Management SmartSet with dermatology providers and Epic Support			x	x	x					
Present projects to Primary Care Sites A and B					x	x				
Send out pre-intervention survey						x				
Intervention period with live SmartSet						x	x	x	x	
Data collection of SmartSet use and e-consult review									x	
Post-intervention survey dissemination									x	
Data analysis									x	
Results write-up									x	x