PURPOSE AND NEED

It is my intention to lead healthcare transformation in post-acute and long term care (LTC) facilities including rural and medically underserved areas by training inter-professional (IP) teams of healthcare professionals in geriatrics and quality Improvement (QI), focusing on medication management in older adults.

Frail older adults in LTC invariably have multiple medical problems and take on average 10-12 medications per day, which increases the potential for harmful drug interactions and adverse drug events.[1,2] One in seven LTC residents will be hospitalized as a result of an adverse drug event, contributing to high health care costs.[1,2] In addition to adverse drug events, social determinants of health such as poor economic status of LTC residents add to poor outcomes relating to medications.[3,4] Centers for Medicaid and Medicare Services (CMS) recently called for harm prevention in nursing homes and identified medications as potential contributors for adverse events and suggested changes in LTC facilities to address this problem.[5] Older adults in LTC are cared for by IP health care workers who need more training in geriatrics and QI to be effective in teams and transform care by addressing problems related to high risk medications in older adults.[5]

I have the opportunity to use my current skills and further develop my expertise as a geriatrics educator to develop solutions for these problems. Duke University Health System's Population Health Management Office is now supporting a collaborative of community-based skilled nursing facilities (SNFs) led by Dr Heidi White (Primary mentor) and Heather Jacobson (member of my implementation team). The collaborative has recruited 23 local skilled nursing facilities across 6 North Carolina Counties including 6 SNFs located in 3 rural and underserved counties and is focusing on avoiding potential adverse events leading to hospital readmissions. For participating SNFs, this collaboration enhances quality and contains cost by strengthening referral relationships with our institution.

Dr Heidi White invited me to participate in the skilled nursing facility (SNF) collaborative of our institution. I saw an opportunity in this new collaborative to train IP teams in these SNFs in QI to make changes to improve care processes to avoid adverse events in older adults and prevent readmissions. Recently, I started to assist SNFs in utilizing QI methodology to enhance their transitional care processes. Dr White introduced me to Dr Adrienne Mims (secondary mentor), and under guidance from both of them, I developed a pilot project focused on teaching QI to IP provider teams in SNFs. I partnered with Heather Jacobson (key personnel) from the Duke PHMO office and delivered an interactive training session on QI principles to IP staff members from the 23 SNFs. After this lecture 6 of the SNFs in attendance volunteered for additional detailed coaching in QI, 4 of the 6 actually participated by assembling a 2-3 person IP team including SW, PT, Administrators, nurses, SW trainees, administrator trainees, to participate in QI coaching. They received a one hour long, in-person visit and weekly follow up conference calls (by Heather Jacobson and me) that involved check in on results and help to make changes and proceed with additional QI Plan-Do-Study-Act improvement

cycles. All 23 SNFs in the collaborative were asked to report progress on conducting QI projects on transitions after 3 months. However, only the SNFs that participated in coaching have made progress in improving transitional care. Recently, after updating our processes, we coached 2 additional facilities through this process and plan to complete a final cohort this spring of 3-4 SNFs. In leading this project, I learned that structured coaching improved successful completion of QI projects and improved care transitions processes in the LTC setting. Many IP health care workers educated in QI may still lack ability to embrace QI methodology without additional coaching. I have identified not only a need to educate IP health care workers in QI but importantly need for additional coaching that allows them to move this knowledge and skill set into daily workflow to make necessary systemic changes in their facilities to take care of older adults safely.

Ever since I started my fellowship in geriatrics at Duke and joined faculty, I have had the privilege to be mentored by excellent clinician educators and prior GACA recipients, Drs. Mitchell Heflin, Heidi White and Gwendolen Buhr. This mentoring started with a funded project during fellowship to increase Vitamin D prescribing in the nursing home.[6] Most of my prior experiences in my career have been geared towards building expertise in IP education and QI.[7,8,9]

1) I attended the Stanford Faculty Development Center for training in teaching skills. Along with another Stanford trained colleague at Duke, Dr Larry Greenblatt, I train IP teachers and trainees locally and internationally in teaching skills.

2) I earned a master's degree in health care quality and patient safety at Northwestern University which enhanced my skills in QI curriculum delivery. During this time, using a variety of education methodologies I developed QI curricula and published some of my work.[7,8] I have trained geriatric fellows and nursing students over the past few years in QI in LTC settings and fellows have presented their work at national meetings each year.[9] One QI project that is pertinent was conducted by geriatrics fellows and nursing students to reduce inappropriate medication use in the nursing home.[10] Medication lists of 80 residents were reviewed and modified by physicians and nurses. The average potential drug-drug interactions per patient decreased significantly from 2.16 to 1.66. The number of potentially inappropriate medications, according to the AGS Beers Criteria, decreased significantly from 0.45 to 0.34. Of the discontinued medications 65% were PRN and 45% were scheduled. While this project was successful in reducing medications for the residents, it required much effort by the trainees and did not give sufficient attention to broadly educating and changing work flows so that physicians, nurse practitioners, pharmacists and nurses could sustain the gains. I recognize that this project was not a solution for managing countless medication changes that happen in older adults from seeing different providers and transferring through different health care settings. I believe that staff empowerment through geriatric education related to medications and QI can introduce effective means to conduct medication review and reconciliation that is essential to counter adverse drug events related to medications.

3) Most of my clinical responsibilities at work are paired with training IP trainees in settings that including: IP geriatric focused preoperative clinic, telehealth services at the VA, inpatient geriatric consults and post-operative care.

4) As an associate program director of the geriatrics fellowship program, I work closely with geriatric fellows and many IP geriatric trainees. Our goal is to generate geriatricians who will be leaders and innovators in care delivery systems for older adults but we need additional opportunities for our learners to have meaningful experiences. Our fellowship program has one year of accredited clinical training and an additional year for selected fellows to pursue career development in one of three tracks (research, education, or QI/administrative leadership). We also have several geriatrics focused IP trainees including PT, OT, Pharmacy, Psychiatry and Nurse Practitioner. Each year I train all these IP trainees in clinical teaching skills based on the Stanford teaching skills model. They could benefit from participation in educational activities that will provide teaching skill practice and build education expertise. As associate director of the geriatrics fellowship program, I want to build capacity for trainees' participation in education of our current workforce and real world QI participation. The support of GACA will open opportunities to build geriatric training capacity through my activities during the award and over the span of my career.

I immensely enjoy being a geriatrics educator. Most of my clinical responsibilities are also focused around training IP trainees. I have worked on training IP healthcare workers and IP trainees in QI in several settings including outpatient, ICU and emergency department. However, several pieces of work as described above demonstrate my affinity for the post-acute and long-term care environment of skilled nursing facilities. Because of value-based care initiatives like the Duke SNF collaborative there is new opportunity to influence care. I will need additional training and mentoring to focus my expertise in this setting and lead health care transformation and educational initiatives for IP staff. The GACA will provide protected time to conduct the project work while I gain experience and expertise. I will be able to attend advanced training activities and benefit from mentorship from Dr Heidi White and Dr Adrienne Mims.

In this application I describe additional mentorship, a specific project and advanced training activities that will build my specialization in QI education and develop leadership skills that will enhance my ability to influence care transformation in skilled nursing facilities. I plan to contribute expertise to the current and future workforce. With the support of GACA I will have an opportunity to solidify my expertise and build regional and national reputation in leading IP geriatrics and QI education.

The GACA will provide time and resources that will allow me to focus in the midst of competing responsibilities, it provides a means of linking many important activities and ensuring that my career is not only of benefit to my institution but also appropriately develops my skills so that I can remain energized and productive as my career develops and ultimately impacts the field of geriatrics education and the care delivered to older adults.

RESPONSE TO PROGRAM PURPOSE:

(a) Work Plan:

Objective 1				
Lead Quality Improvement (QI) and education programs for inter-professional (IP) health care workers in Long Term Care (LTC) to improve care of older adults with regards to high risk medication management (opioids, anticoagulants, hypoglycemic and deliriogenic medications)				
Year	Key tasks	Partners	Start date	End date
Year 1	- Build IP teams with 3-4 IP health care workers from each LTC facility (geriatric resource teams -GRTs) - Train GRTs in opioid management in elderly patients - Provide tool kits to GRTs to teach opioid management to IP health care workers in their LTC facilities. - Coach the GRTs to implement QI projects in their facilities to decrease unnecessary opioid burden - Train and support GRTs through face to face and web based meetings.	PHMO (population health management office) Heather Jacobson Benjamin Smith Loretta Matters Adrienne Mims Heidi White	July 2019	June 2020
Year 2	- Train GRTs in anticoagulant management in elderly patients - Provide tool kits to GRTs to teach anticoagulant management to IP health care workers in their LTC facilities. - Coach the GRTs to implement QI projects in their facilities to decrease complications from anticoagulants - Train and support GRTs through face to face and web based meetings.	PHMO Heather Jacobson Benjamin Smith Loretta Matters Adrienne Mims Heidi White	July 2020	June 2021
Year 3	- Train GRTs in management of hypoglycemic medications in elderly patients - Provide tool kits to GRTs to teach hypoglycemic medication management to IP health care workers in their LTC facilities. - Coach the GRTs to implement QI projects in their facilities to decrease complications from hypoglycemic medications - Train and support GRTs through face to face and web based meetings.	PHMO Heather Jacobson Benjamin Smith Loretta Matters Adrienne Mims Heidi White	July 2021	June 2022
Year 4	- Train GRTs in management of deliriogenic medications in elderly patients	PHMO Heather Jacobson	July 2022	June 2023

	- Provide tool kits to GRTs to teach deliriogenic medication management to IP health care workers in their LTC facilities. - Coach the GRTs to implement QI projects in their facilities to decrease complications from deliriogenic medications - Train and support GRTs through face to face and web based meetings.	Benjamin Smith Loretta Matters Adrienne Mims Heidi White		

Objective 2				
Coach IP trainees (Geriatric fellows, Geriatric psychiatry fellows, Geriatric Physical therapy and Occupational therapy residents, Geriatric Nurse practitioner fellow, Geriatric Pharmacy residents) to become geriatrics educators				

Year	Key Tasks	Partners	Start date	End date
Year 1	-Train IP trainees in teaching skills -Train IP trainees in QI -Train IP trainees in coaching and facilitation skills -Involve trainees in teaching and coaching the GRTs in education and QI	Mitchell Heflin	July 2019	June 2020
Year 2	-Train IP trainees in teaching skills -Train IP trainees in QI -Train IP trainees in coaching and facilitation skills -Involve trainees in teaching and coaching the GRTs in education and QI - Evaluate and revise these trainings	Mitchell Heflin	July 2020	June 2021
Year 3	train IP trainees in teaching skills -train IP trainees in QI -train IP trainees in coaching and facilitation skills -Involve trainees in teaching and coaching the GRTs in education and QI - Evaluate and revise these trainings	Mitchell Heflin	July 2021	June 2022
Year 4	-Train IP trainees in teaching skills -Train IP trainees in QI -Train IP trainees in coaching and facilitation skills -Involve trainees in teaching and coaching the GRTs in education and QI - Evaluate and revise these trainings	Mitchell Heflin	July 2022	June 2023

Objective 3
Gain regional and national recognition as a leader in geriatrics education through gaining additional skills with further training and project work

Year	Key Tasks	Partners	Start date	End date
Year 1	- Complete Advanced training program, at Intermountain Health Care Institute - Apply for the Tideswell leadership program - Evaluate the effectiveness of the project and present at national meetings – AMDA/PALTC and AGS - Attend national meetings – American Geriatrics Society (AGS) and Society for Post-Acute and Long Term Care (PALTC) - Get involved in national committee in AMDA The Society for Post-Acute and Long Term Care -Attend regional meeting in LTC to present the project	Heidi White Adrienne Mims Mitchell Heflin Duke Office of Clinical Research (DOCR)	July 2019	June 2020
Year 2	- Complete Tideswell Leadership program – UCSF - Apply for ALICE leadership program at Duke - Evaluate the effectiveness of the project and present at national meetings – AMDA/PALTC and AGS - Attend national meetings – American Geriatrics Society (AGS) and Society for Post-Acute and Long Term Care (PALTC) - Start writing a manuscript and submit to journal - Work in national committee in society for Post-Acute and Long Term Care - Get involved in national committee in AGS - Present project in QI organization for North Carolina	Heidi White Adrienne Mims Mitchell Heflin DOCR	July 2020	June 2021
Year 3	- Complete ALICE leadership program at Duke - Evaluate the effectiveness of the project and present at national meetings – AMDA/PALTC and AGS - Attend national meetings – American Geriatrics Society (AGS) and Society for Post-Acute and Long Term Care (PALTC) - Start writing manuscripts and submit to journals - Work in national committee in AMDA/PALTC - Work in national committee in AGS - Apply for promotion to associate professor	Heidi White Adrienne Mims Mitchell Heflin DOCR	July 2021	June 2022
Year 4	- Evaluate the effectiveness of the project and present at national meetings – AMDA/PALTC and AGS - Attend national meetings – American Geriatrics Society (AGS) and AMDA The Society for Post-Acute and Long Term Care (PALTC) - Write manuscripts and submit to journals - Work in national committee in society for Post-Acute and Long Term Care - Work in national committee in AGS - Apply for promotion to Associate Professor	Heidi White Adrienne Mims Mitchell Heflin DOCR	July 2022	June 2023

(b) Methodology/Approach:

Objectives:

1. <u>Lead quality improvement and education programs for inter-professional health care workers in LTC to improve care of older adults with regards to medication management</u>:

The activities planned in this objective are to train IP healthcare workers in LTC facilities on how to manage high risk medications in elderly patients. I will perform the specific activities to build QI and geriatric education programs for IP healthcare workers in LTC facilities among our 23 skilled nursing facilities in our collaborative (mentioned in purpose and need section above). I will focus on 4 classes of high medications for this project which include: opioids, anticoagulants, hypoglycemic and deliriogenic medications. This will link with my second project purpose to coach IP trainees to be geriatric educators.

<u>Specific activities</u>:

It is very important to understand how the LTC IP staff feel about education and process improvement in their facilities with regards to high risk medication management. Therefore, I will meet with staff in the SNFs in the collaborative and administer nominal group technique[11] to understand needs and feasibility of interventions focused on appropriate high risk medication management in elderly patients in LTC settings. The focus of these meetings will be to identify an approach to train IP staff in SNFs to manage specific groups of high risk medications in elderly patients and understand staff and facilities' needs to implement process improvement. The purpose of this project is to focus on specific medication groups (opioids, anticoagulants, hypoglycemic and deliriogenic medications) that impact many patients and are associated with adverse events, but there will be room for my SNF IP partners to bring their own pain points and priorities to the process. This will be particularly relevant as I reach out to rural and underserved communities—these SNFs will likely have fewer resources, require more attention to align the activity with their perceived needs.

I will encourage administrators in the SNFs to identify 3-4 IP health care workers that can function as Geriatric Resource Teams (GRT) within their facilities. I have worked with a team of IP faculty in building geriatric resource teams in primary care practices and training them in QI as part of or the Geriatric Workforce Enhancement Program[11] (HRSA funded). The concepts from the above work will allow me to build geriatric resource teams and train them in QI. I will train the Geriatric Resource Teams about high risk medications and develop tool kits that they can use to educate the IP health care workers in their respective facilities about high risk medication management as part of staff development activities. The GRTs will be trained to do QI projects with in-person and tele-coaching as I did with the pilot project with the 6 SNFs in the collaborative. With my prior experience I found PDSA (plan-do-study-act) cycles to be effective in process change. I anticipate making use of teleconferences, video conferences, on-line modules, and adjusting my technology as experience is gained, problems are encountered and adjustments are needed, recognizing that SNFs are not advanced in the use of electronic medical

records or other technology that is more common place in hospitals and primary care practices.

An implementation team will be formed in the beginning of the project period and will include:

Role at Duke	Support Mamata Yanamadala	Role in GACA
Heidi White- Geriatrician	Mentor design, implementation and evaluation of the educational and QI coaching activities	Primary Mentor
Adrienne Mims- Geriatrician	Mentor design, implementation and evaluation of the educational and QI coaching activities	Secondary mentor
Ben Smith Pharmacist	Identify education content and help identify patient outcome measures related to medications	Key personnel
Heather Jacobson Program Manager	Support design, implementation and evaluation of the educational and QI coaching activities	Key Personnel
Loretta Matters Nursing Expert	Support with design and implementation of educational activities for the GRTs	Key Personnel
Dev Sangvai PHMO	Provide support through the PHMO office for additional resources	other

Each year I will focus on a medication group for education and quality improvement. I will start each year with training a small group of GRTs (4-6) and evaluate the effectiveness of training and plan for large scale dissemination to the other SNFs in the collaborative. Recruitment will focus on SNFs within rural and underserved counties. Each year SNFs will have the opportunity to continue if they have been fully engaged. Attrition will be handled with a call for new SNF participants. This will allow high performers to influence new participants. Tool kits, check lists, and durable educational materials (videos, handouts) will be made available to all SNF Collaborative participating SNFs but the focus of my GACA supported time will be developing the curriculum, coaching model and collaborative practice relationships with this small number of SNFs to allow for the involvement of IP learners/trainees. This will expand educational opportunities and help more trainees to see post-acute and long-term care practice as a viable career path.

Social determinants of health (SDOH) compound health disparities and adverse outcomes in LTC settings. Presence of diverse patient population in LTC dictates a need to equip LTC health care workers with skills in caring for the diverse population. Older adults in LTC with varying needs and resources based on economic levels might have varying health care outcomes especially related to medication choices at

discharge. Our HRSA funded Geriatric Workforce Enhancement Program (GWEP) provides education on SDOH through a series of monthly webinars that feature presentations on a range of topics including food insecurity, transportation, housing, healthcare access and medication safety. (https://geriatrichub.nursing.duke.edu/resources/duke-gwep-webinar-1-deprescribing) The webinars are recorded and available online for continuing education credits. These webinars will be made available to IP staff in SNFs. While implementing QI projects these SDOH are important for meaningfully making an impact on diverse population.

A sample curricular plan for one year is detailed in the table below. This education plan will be evaluated with rapid improvement cycles before broader dissemination to all the SNFs.

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Needs assessment:
- Conduct focus group discussion with the staff in SNFs to understand what educational platforms and methods might be feasible for staff and understand the time commitment from facilities.
- Consolidate themes from focus group discussion and present to all facilities in the collaborative in a group and seek further input to refine education methodology and refine participant expectations
- Recruit 4-6 LTC facilities for participation in pilot training
- Identify 3 IP staff that will form a GRT in each facility

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Educational content and instructional strategies:
- Gather, evaluate, modify and implement training material on medication management issues related to opioids
- Tool kits (videos, case studies, role play scenarios, competency check lists) for GRTs to teach content to IP providers in their SNFs will be developed
- Schedule in-person and web based meetings

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Objectives of education:
Train IP GRTs in geriatric content, education toolkits and QI to be change leaders:
1. Geriatric content: objectives:
a. Describe opioid safety in older adults
2. QI content: objectives
a. Conduct improvement cycles using the PDSA cycles
b. Implement a process to tapper and discontinue unnecessary opioids:
3. Training on teaching with tool kits
a. How to facilitate a group?
b. How to run a team meeting?
Train the GRTs in QI content
a. In person and telephone meetings
b. In person meeting with the GRTs at their facilities to discuss their QI project and plan the first PDSA cycle for QI project and plan for educating IP workers at their facilities about geriatric education

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> c. Web based weekly check-ins for delivery of education and conducting QI projects
> d. Data collection and review
> e. Final presentations of their work with other SNFs in the collaborative group

> **Build evaluation tools:**
> - Evaluation tools for knowledge, skills and attitude changes for GRTs
> - Evaluation tools for knowledge, skills and attitude changes for IP staff in SNFs
> - Program evaluation tools for continuous evaluation of the program
> - Process measures and outcome measures will be defined for the QI projects and data collected plan will be created for the QI projects

> **Rapid cycle improvement plan for the curriculum**
> - Revise and modify the above curriculum based on evaluations and adaptations needed for new content areas.
> - Deliver the above curriculum to other SNFs after revising the content as needed

2. <u>Coach IP trainees to be geriatric educators</u>: We are aware of shortage of geriatricians and a project like this that can achieve a broader reach can help more systems become age friendly. Very few clinicians chose to specialize in geriatrics and even fewer geriatricians and other geriatrics specialists choose to be educators. It is important for our geriatrics fellows and other geriatrics IP trainees to experience the impact of geriatrics expertise and QI implementation. Using these skills and teaching others they will be educators whether or not they assume a formal clinician educator position. They will be prepared to lead transformation of health care systems to be age friendly.

   In my geriatrics fellowship program, I train IP trainees along with geriatrics fellows in Clinical teaching skills based on the Stanford faculty development course. This project will provide opportunities to include geriatric fellows and IP trainees to practice and apply the teaching skills they have gained in the immersive teaching skills workshop. In the fellowship program I am currently involved in teaching QI to fellows and nursing students in LTC settings. The fellows and nursing students and other geriatric IP trainees in our institution will be involved in this project in learning QI along with the GRTs and participating in conducting QI projects at the SNFs. I will also involve the second year geriatric fellows who are interested in pursuing a career as a clinician educator in this project. Dr Mitchell Heflin (geriatrics fellowship director, secondary mentor) and I meet weekly to discuss fellowship administration and those meetings will lend space for planning to include IP trainees in this project and evaluate the effectiveness of this effort.

3. <u>Gain regional and national recognition as a leader in geriatrics education:</u>
   I will need to broaden my skill sets to accomplish the activities set forth in this application. I am confident that I will be able to gain additional skills through GACA by: a) close mentorship b) faculty development activities in leadership c) additional skill building as a QI educator

Activities in years	Specific activities
Mentorship (years 1-4)	Meet with primary and secondary mentors quarterly to discuss professional development and formal evaluation
Project (years 1-4)	Gain experiential learning, evaluate outcomes and publish work
Meetings (years1-4)	Attend local (Nursing Home Association) and national meetings (Post- Acute and Long Term Care) pertaining to LTC to interact with other leaders and gain further understanding of the LTC landscape. Attend American Geriatrics Society to interact with other clinician educators to broaden my skills and connections for future professional development. Attend the GACA meeting along with my mentor to gain guidance and support from other GACA participants
National committees (years 2-4)	Volunteer for committee work focused on QI education -AGS: Quality and Performance Measurement Committee -AGS/ADGAP Education Committee -AMDA – clinical practice committee -AMDA - education committee
Publications (years 2-4)	Create evaluation tools and gather data and analyze the effectiveness of the project and publish my work. Publishing my work would be extremely important to advance my career to associate professor
Advanced training (years1-4)	1. Attend an advanced training program offered by the Intermountain Healthcare Training Institute (https://intermountainhealthcare.org/about/transforming-healthcare/institute-for-healthcare-delivery-research/courses/advanced-training-program/).My previous education has given me a foundational understanding of theory and methodology. This course will engage me in the intricacies of broad QI implementation in complex health systems. I have recognized that this course will help me transform from teaching foundation elements of QI to trainees to lead large projects to coach the current workforce to incorporate QI methodology into daily process improvement activities. I have found this program with Dr Mims help and it will allow me to gain expertise in designing age-friendly health care systems in LTC that provide value based care. The Advanced Training Program is a 20-day course that offers leaders a practical, in-depth course designed for healthcare professionals who need to teach, implement, and investigate quality improvement, outcome

	measurement, and management of both clinical processes. This will be pursued in year 1
	2. Apply and attend the Emerging Leaders in Aging Program is a hands-on practical program for rising leaders in the field of aging. (http://www.tideswellucsf.org/tideswell-ags-adgap-national-leadership-development-program/). Year 2-3 This program will help me conceptualize my leadership potential within the professional community of Geriatric Medicine. The project-based nature of the program will allow me to have experiential learning through interacting with other leaders in the field of geriatrics
	3. ALICE program: (https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/alice-program) This year-long program will include a combination of full-day, half-day, and 1-2-hour sessions. Content will focus on personal leadership skills designed to help individuals gain greater self-awareness, management, and communication skills needed to deftly navigate leadership in academic medicine. This program will help me establish a network of similarly minded women leaders who are approaching mid-career and preparing for leadership positions within the academic arena. This will be pursued in year 3-4
QIO (years 3-4)	Present work at our Quality Improvement Organization for North Carolina and find opportunities to disseminate this work beyond the SNF collaborative
Peer network	- I will join and participate in Duke AHEAD (the Academy for Health Professions Education & Academic Development) which is a community of education scholars, fostering innovation in health professions education. Duke AHEAD offers innovative monthly faculty development sessions and Education Grand Rounds and I will attend those and present my work at the annual education day. - I will participate in the GACA Peer Mentorship Network. Peer mentorship within the select group of GACA awardees will be critical to fostering discussion and innovation. If selected, I will participate in a GACA Peer Mentorship Network incorporating GACA awardees from multiple institutions. This group will be IP, giving collegial support that is foundational to the grant's purpose. The University of Rochester, under the direction of GACA applicant Dr. Jennifer Muniak and Dr. Annette Medina-Walpole, Chief of Geriatrics and a nationally recognized geriatrics educator, has agreed to spearhead this activity for GACA awardees. Four mentorship groups consisting of 6-7 GACA recipients and a national senior education faculty facilitator will be

	established and convene quarterly via Zoom meetings. I will also meet with other GACA awardees in attendance at annual national professional society meetings.

Approach to dissemination:

1. The participants of the SNF collaborative at Duke meet monthly either in person or over the web. I'll make the reports of the project progress available during these meetings. Some of the meeting time can be used to disseminate reports of the project and talk about further recruitment. The sharing of this data will help foster healthy comparison of performance of outcomes and ideas to improve outcomes in respective facilities. Incentives will be provided for participation and high achievers. There will also be opportunities to share this approach and its results formally and informally with other ACOs at regional and national meetings. When other organizations who want to model this approach, I will make available opportunities to observe coaching sessions, recruitment activities, and report outs at our SNF collaborative group meetings.
2. I will present the results of the project to the North Carolina Health Care Facilities Association which has been an active partner with the Duke SNF collaborative. This is the trade organizations for skilled nursing facilities in NC. I will also present results at the regional chapter of AMDA/PALTC which includes SNF practitioners and medical directors from NC and SC. I will seek opportunities to create workshops at PALTC and AGS national meetings to disseminate the methodology.

Approach to IP Education Innovation:

The innovation in my plan centers on combining geriatrics education and process improvement through coaching that incorporates QI methodology for IP healthcare workers organized in geriatric resource teams to efficiently reach a pivotal setting for older adults, the skilled nursing facility. QI Education as a stand-alone intervention is ineffective in achieving meaningful patient care outcomes. Previously in my teaching, I focused on delivering QI content and methodology in a higher proportion and coaching in a relatively smaller proportion. With the pilot project I conducted with the SNF collaborative, I learnt that a very small portion of the QI methodology and higher portion of coaching that happens more frequently for shorter intervals was far more effective and this process was more efficient for IP health care workers to learn and implement change within a span of eight weeks. Therefore, this project is going to be unique in the sense that there is less classroom time expectation and more practical experience through ground work and project implementation and frequent short interval coaching. The IP healthcare workers in LTC settings or for that matter many clinical settings cannot spare much time for class room learning. Some of the learning in this project will be incorporated into their workflow and might make the learning less burdensome. I will make use of teleconference coaching to minimize travel time for both learners and teachers since the area the project will cover includes several counties in NC.

(c) Resolution of challenges:

- LTC settings experience high staff turnover which makes it challenging to implement QI activities. Developing geriatric resource teams as opposed to individual participants/champions for this project will help to mitigate this expected challenge. Team shared responsibility and vision so far has allowed projects to proceed even with busy participants and should help when staff turnover occurs. I will evaluate team stability with specific measures.[14]
- Limited Staff time for education and innovation is true in almost every healthcare setting. It is challenging to find additional chunks of time out of work flow for training and educational activities. In the pilot project I conducted for the SNFs in the collaborative I learnt that reducing classroom time and incorporating educational activities into work flow has made it more feasible for QI project implementation. I will use similar strategies (teleconferencing, brief 15-30 minute check-ins) to make the training more feasible.
- SNF recruitment might be challenging, especially with an expectation for frontline staff involvement for participating in the project. I observed that in person meetings to clarify expectations has helped with recruitment. I also learnt that seeing the results of participating SNFs has improved buy-in for other SNFs to participate. I will meet the SNFs in person along with Heather Jacobson to recruit SNFs for participating in the project. After our first cohort of 4 we had 2 more go through the program and now we will start our third cohort. We have encouraged facility leaders to consider, "When is the 'right time' for them to get involved?' in order to maximize benefit. This is especially important when there are other competing priorities and projects. Sharing data on what we have learned and how the program has been modified to be responsive to SNF culture and having SNFs present their projects has impact in getting buy-in for participation. I will also participate in regional meetings for NC Healthcare Facilities Association, AMDA regional chapter and Duke SNF collaborative meetings for marketing this project to recruit participants.
- My focus on rural and underserved SNFs will require extra attention. These SNFs are farther away from the medical center. They tend to have fewer resources. I will spend time reaching out specifically to the administrators, directors of nursing and medical directors for these SNFs to explain the benefits of this project and the connection with trainees since they may see a particular benefit of hosting and ultimately recruiting such individuals to their service area.
- Since this is a 4-year project and different medication issues will be focused over a 4-year period, there is a chance that the SNFs might have fatigue from conducting process changes. It would be essential to think about incentives for SNFs that are participating and performing better than their peers in the collaborative. This might motivate participation of the SNFs in the project.
- SNFs might have organizational priorities that come up for them to work on specific topic areas outside of this project. We will plan for attrition. Some facilities may move in and out of participation over the 4-year period. We will have to make allowances for survey periods and other events that could interfere with participation and create opportunities to 'catch-up' on participation. We will keep participation periods short (8-12 weeks) to help SNFs feel that they can indeed participate. The

topic area chosen for this project targets priority areas for CMS, ACO and QIO and this will help the SNFs to continue to work on these projects.

- Process measures for the QI projects might be highly variable from facility to facility depending on how existing processes are in each facility and this might make it challenging to measure the effect of QI projects on large scale and compare individual facility performances based on process measures.
- Educational activities and keeping SNFs engaged will require effort from the whole team that I have assembled, especially as the model flourishes in the third and fourth years. Additionally, I will recruit geriatric IP trainees in educational activities and engage them in the project work. This will enhance their experience as educators, extend the reach and will allow project dissemination.
- I will have limited time given my variety of responsibilities and I will need to carefully review the project implementation with my mentors to balance my work and strategies to deliver this project. There is a need to train and involve other faculty in geriatrics in our institution to engage in QI and educational opportunities.

Project Impact:
(a) Evaluation and Technical Support Capacity:
Evaluation is a core element of education and QI projects. Continuous evaluation of my career development plan is necessary to monitor progress and make changes as necessary to achieve the objectives of this project. Key evaluation staff will include the implementation team-Dr White, Dr Ben Smith, Dr Mims, Heather Jacobson and myself. Funds are allocated in the budget for Duke Office of Clinical Research (DOCR) to help with data gathering and data synthesis from surveys. The PHMO office will help gather data from the SNFs on performance measures. Specific measures for each of the objectives are identified below

1. <u>Become an expert in delivering geriatrics curricula to IP healthcare workers in LTC setting to have an impact on value based care for geriatric patients</u>
- Successful recruitment of SNFs for participation in this project will be a marker for effective marketing and gaining of understanding of the setting specific needs and motivation for change in SNFs including those in underserved and rural areas.
- Number of GRTs recruited will be evaluated and the IP members of the GRTs will be evaluated for knowledge gain, skilled development, confidence gain and attitude change, program satisfaction after participation in this project through online surveys created with the help of Duke Office of Clinical Research (DOCR). The data will be evaluated with the help of DOCR.
- Team work and team stability will be evaluated.[14]
- Number of IP health care workers trained with be tracked through the outreach of GRTs within their facilities.
- QI project with PDSA cycles implemented will be tracked.
- Process and outcome measures for high risk medication safety and QI project related measures. These measures will be tracked by the PHMO and Heather Jacobson and I will work with staff at the PHMO to evaluate the QI project related data.
2. <u>Coach IP trainees to be geriatrics educators:</u>

- IP trainees' involvement in the project will be measured for participation and reflection on the experience.
3. <u>Gain regional and national recognition as a geriatrics clinician educator leader:</u>
   It is important for me attend regional and national meetings for collegial exchange of ideas with other clinician educators in geriatrics and other experts in developing and disseminating new care models for older adults. I will plan to present my work at national meetings. I will track my attendance and presenting results of project work in national meetings both at PALTC and AGS national meeting will be tracked. My promotion to an associate Professor will be a key measure of this project. I will write manuscripts and publish results of this work and I will track this with my mentors.

Program Evaluation	
Category	Measure
GRTs	Satisfaction Number of GRTs recruited
IP trainees	Satisfaction Number of IP trainees involved Categories of trainees involved
IP health care workers in SNFs	Satisfaction Number of IP Healthcare workers trained Categories of IP staff involved
SNFs	Number of SNFs engaged Number of rural and underserved SNFs recruited
QI projects	Number of projects implemented Process and outcome measures related to high risk medications

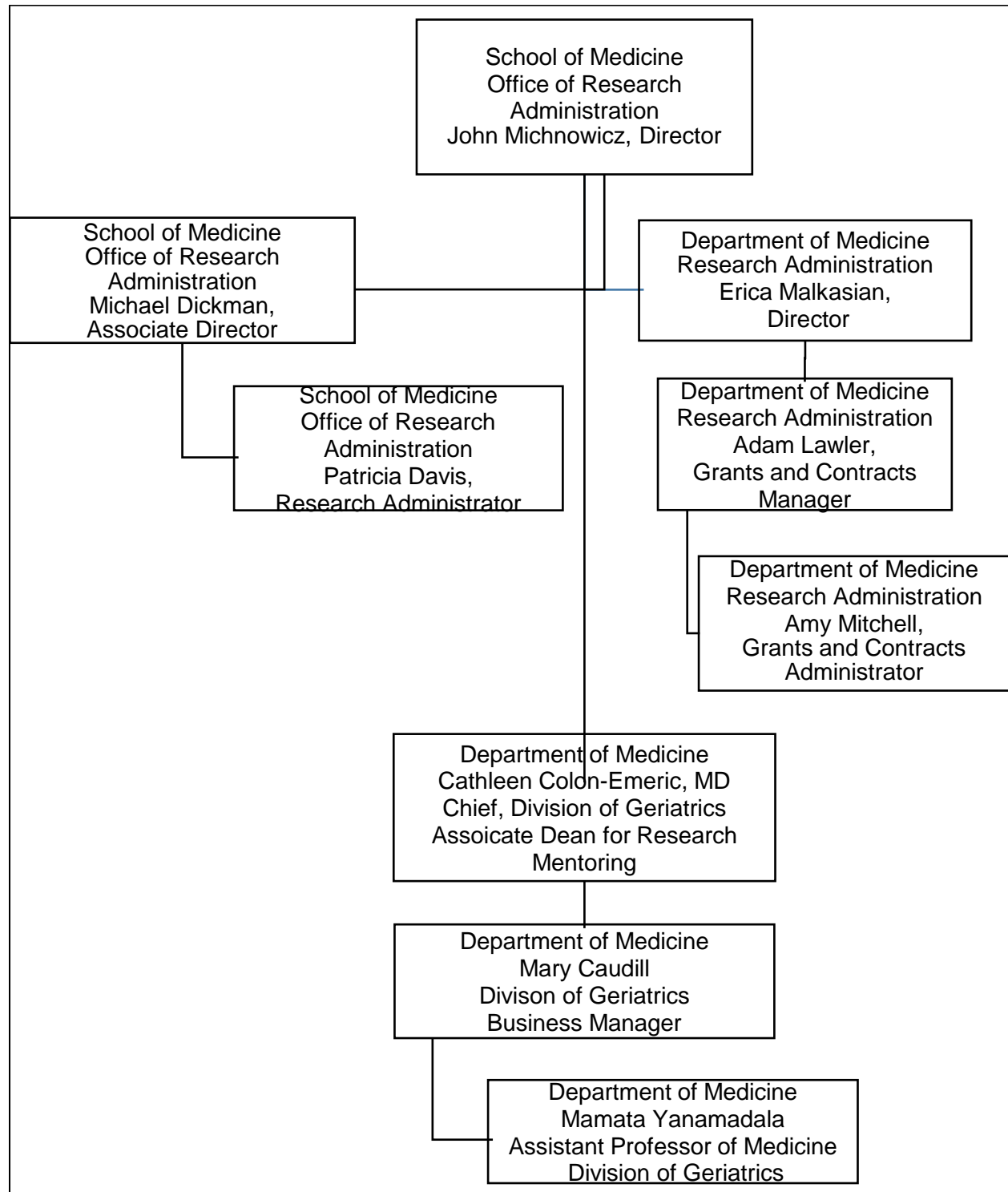| Participant Evaluation based on Kirkpatrick Level[13]				
Learners	Level 1 Reaction	Level 2 learning	Level 3 Behavior	Level 4 Results
GRTs	-Satisfaction	- Knowledge - Attitude - Confidence	- Team work - Successful education - QI project implementation	-QI projects -medication related outcomes
IP health care workers	-Satisfaction	- Knowledge - Attitude - Confidence	-participation in QI projects	
IP trainees	-Satisfaction	- Knowledge - Attitude - Confidence	- involvement in education activities - involvement in QI activities	-career path in education -career path in LTC -career path in QI

Career Development Evaluation	
Training	-Completion of Advanced training program in QI at Intermountain Healthcare Institute -Completion of Tideswell Leadership program –UCSF -Completion of ALICE leadership program at Duke
National Recognition	-posters at PALTC and AGS -involve in education and QI committees at PALTC and AGS -publications
Local recognition	-promotion to Associate Professor -present work at local quality improvement organization -present work at North Carolina Healthcare Facilities Association -mentor IP trainees in education

Data collection strategy: A detailed data management strategy is important for collecting, managing, analyzing and tracking data to measure process and outcomes. I will partner with Heather Jacobson in Duke PHMO to collect data from the GRTs about the impact of this project on them and their facilities. I will work with Dr White, Dr Mims and Dr Smith to identify measures and create tools such as surveys, pre and post-tests needed for evaluating progress of process and outcome measures. I will work with Duke Office of Clinical Research (DOCR) to build online evaluation tools and compile results and create tables and graphs to share the progress impact with target audiences. I have created evaluation tools and collected data and analyzed data in my previous QI education projects with the help from DOCR.[6,7] There could be some difficulty with compiling data collected with regards to QI projects conducted in SNFs. The process measures of QI projects might not be uniform across all the SNFs which might make it challenging to compare and compile data across SNFs. In addition, participating SNFs are likely to have different methods of documentation, including paper and electronic records This will be carefully reviewed with my mentors and we will try to identity process and outcome measures that are consistent across SNFs if possible.

I'll will meet with my mentors Dr White and Dr Mims regularly and follow the PDSA format for the Rapid Cycle Quality Improvement (RCQI) for the continuous monitoring of my ongoing career development plan, processes, outcomes of implemented activities, progress toward meeting GACA goals and objectives, and the implementation of necessary adjustments to planned activities to effect course corrections. I am familiar with the PDSA format of rapid cycle improvement and have applied this with several other educational projects in the past including the QI curriculum for trainees and the LTC healthcare workers. I will meet with my primary mentor Dr White and secondary mentors biweekly for short intervals to review steps in the PDSA for different stages of this project and make changes before my next meeting with my mentors. We have already established regular meetings for the work that I am currently doing and this will help with continuous evaluation of my work.

Organization chart for support of this project:

School of Medicine
Office of Research
Administration
John Michnowicz, Director

School of Medicine
Office of Research
Administration
Michael Dickman,
Associate Director

Department of Medicine
Research Administration
Erica Malkasian,
Director

School of Medicine
Office of Research
Administration
Patricia Davis,
Research Administrator

Department of Medicine
Research Administration
Adam Lawler,
Grants and Contracts
Manager

Department of Medicine
Research Administration
Amy Mitchell,
Grants and Contracts
Administrator

Department of Medicine
Cathleen Colon-Emeric, MD
Chief, Division of Geriatrics
Assoicate Dean for Research
Mentoring

Department of Medicine
Mary Caudill
Divison of Geriatrics
Business Manager

Department of Medicine
Mamata Yanamadala
Assistant Professor of Medicine
Division of Geriatrics

(b) Project Sustainability:
- Creating GRTs in LTC setting will help with sustainability of the project. The members of the GRTs can continue with staff educational activities with the expertise they have gained in conducting educational and QI activities. They will have an understanding of key concepts of education and QI methods that will empower them to apply these concepts to different priority areas in their settings. The plan is to recruit GRTs from 10-12 facilities in the SNF collaborative and with having created GRTs in the SNFs staff turnover improve and avoid brain drain. The QI process changes once made in the SNFs should be in place to manage high risk medications in the facilities. I will create a plan to check in with the SNFs once a year at their scheduled quarterly meetings to discuss updates and brainstorm hurdles for sustaining the projects.
- Market learning opportunities to incoming geriatric medicine fellows—Many fellowship slots in geriatric medicine go unfilled every year. However, many young physicians are eager to build a skill set that includes curriculum development, QI methodology and coaching that will make them attractive candidates to health care systems geared to master a population health approach in a value-based environment for the expanding older adult population. I will be positioned to recruit geriatric medicine fellows and train them to be clinician educators through this curriculum.
- Data collection and analysis will help determine if workforce enhancement and engagement of trainees can be supported through local resources
- The SNF collaborative within PHMO will evaluate outcomes and look for ways to sustain methodology and apply to other priority areas.
- The engagement with our quality improvement organization for the state of NC through Dr. Mims may open opportunities for dissemination of tools and methodology.
- I will need to work on gaining additional support to continue pursuing my passion through grants. I will pursue state and federal civil monetary penalty funds for a grant to further support my work beyond GACA.[15]
- I will pursue potential leadership roles in quality and safety in our division of geriatrics, department of medicine and health system.

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