Abstract

Kentucky Rural & Underserved Geriatric Interprofessional Education Program

Kent School of Social Work, University of Louisville, Louisville, KY, 40292

Program Director- Dr. Anna C. Faul, 502-852-1981; anna.faul@louisville.edu; www.louisville.edu/kent

Request $750,000 + $100,000 (ADRD initiative)

Funding priority: Rural and underserved populations

This proposed project (July 2015-June 2018), the Kentucky (KY) Rural & Underserved Geriatric Interprofessional Education Program (KRUGIEP) addresses the following needs in 6 rural counties of KY: 1) the shortage of the geriatric and primary care health workforce; 2) the need to train a health care workforce that can deliver culturally appropriate services to the growing Hispanic population; 3) the difficulties experienced in decreasing the chronic disease burden in rural KY; 4) the lack of supportive rural environments to promote health, specifically for the older rural populations; and 5) the need for ADRD Supportive Education and Resources.

KRUGIEP will serve older adults 65+ in KY, living in the rural counties of Hart, Metcalfe, Barren, Bullitt, Henry and Shelby Counties with an additional special emphasis on Spanish speaking older adults. These counties represents underserved rural areas in KY.

The project has a threefold purpose: 1) to develop an interprofessional education center at the University of Louisville Institute for Sustainable Health and Optimal Aging, that educates and prepares students and professionals from medicine, nursing, social work, dentistry, pharmacy, and community health partners, to function within a transformed integrated patient-centered geriatric primary care and community based service delivery system; 2) to focus the education on creating a workforce that improves the patient experience and clinical outcomes, reduces the cost of care, and improves the work life for those delivering care, and 3) to create ADRD–friendly communities through ADRD education and training of clinical staff, community partners, persons with dementia, and caregivers.

The goals of the project are to: 1) Transform clinical training environments with the development and delivery of an Interdisciplinary Curriculum for Geriatric Education (ICGE); 2) Transform primary care sites to deliver Integrated Patient-Centered Geriatric Primary Care and Community Based Services (IPC-GPC-CBS) to older adults 65+ with two or more chronic conditions; and 3) Provide training and community engagement resources to create ADRD–friendly communities in the geographic area served.

The study will use Kirkpatrick's Training Evaluation Model to assure that student learning is transferred to clinical sites in order to transform them to Integrated Patient-Centered Geriatric Primary Care sits where clinical health care teams work in an integrated fashion with community health teams to deliver coordinated care to older adults. Learners will be students and professionals from medicine, social work, nursing, dentistry, pharmacy and law, one pharmacy fellow, medical residents, direct care workers, community organizers, peer mentors, community volunteers, patients, families, and caregivers.

To transform primary care sites in the 6 counties to deliver Interdisciplinary Patient Centered Geriatric Primary Care and Community Based Services (IPC-GPC-CBS), collaborative partner agreements were established with primary care sites to start the process of transformation in year 1. These sites are Glasgow Family Medicine Clinic serving the counties of Barren, Hart and Metcalfe, Shelby Family Medicine and Mercy Medical in Shelby County, KY River Medical Partners in Henry County, UofL Geriatrics Home Case Practice in Bullitt County. To facilitate community health team engagement, collaborative partnerships were established with KIPDA and Barren River Area Agencies on Aging and Independent Living.

Project Narrative

Purpose and Need

a) Purpose

This proposed project, the Kentucky Rural & Underserved Geriatric Interprofessional Education

Program (KRUGIEP) has a threefold purpose: 1) to develop an interprofessional education (IPE) center at the University of Louisville (UofL) Institute for Sustainable Health and Optimal Aging, that educates and prepares students and professionals from medicine, nursing, social work, dentistry, pharmacy, and community health partners, to function within a transformed integrated patient-centered geriatric primary care and community based service delivery system; 2) to focus the education on creating a workforce that improves the patient experience and clinical outcomes, reduces the cost of care, and improves the work life for those delivering care[1]; and 3) to create ADRD–friendly communities through ADRD education and training of clinical staff, community partners, persons with dementia (PWD), and caregivers.

The project is unique in its integration of community health teams and mental health specialists within integrated geriatric primary care delivery systems, using a systemic approach of collaborative care to develop an interagency consortium strengthening linkages among related services for older adult patients and to study patient outcomes of such a unique consortium.

b) Demographics of the population that will be served

The proposed project serves older adults in KY, living in the nonmetropolitan rural Hart & Metcalfe Counties, the micropolitan Barren County, and the fringe metro Bullitt, Henry and Shelby Counties (Figure 1). Although the 2013 rural urban continuum codes[1] put 3 counties within a metro classification, large percentages of the pop. are seen as rural, based on pop. density, count and size thresholds (Table 1)[2]. The total pop. in the 6 county region is 202,726, with 27,955 (13%) being 65 and older. The median age is higher or at the KY median of 38 years.

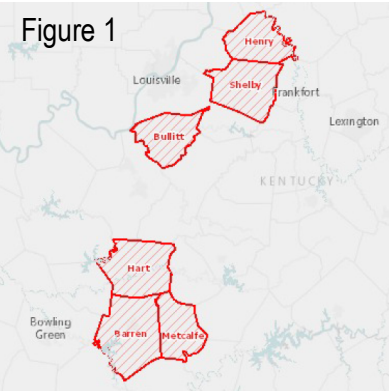


Figure 1

The projected 65+ pop. growth for the 6 counties is > the US or KY average at 149%, with both Bullitt and Shelby Counties outliers at over 200% projected growth. For all 6 counties together, more than half of the pop. (55%) are rural – > both the US and KY average. The same situation is true for the rural pop. 65+, who are much larger for the region than in KY or in the US[2]. The counties together represent underserved areas within KY with a multitude of barriers to effective and efficient health care.

The racial profile of the region is shown in Table 2. Of particular interest is the Hispanic pop. change between 2000 and 2010 that shows a % growth much > the US average and > the KY average for Barren, Bullitt and Shelby Counties.

Table 1[3]	Population Data					
	Total Population[4]	Median Age[4]	Pop 65+[4]	65+ Pop growth 2010 - 2050[5]	Rural Pop[2]	Rural Pop 65+[2]
US	**309,138,709**	**37**	**13%**	**114%**	**19%**	**22%**
KY	**4,340,167**	**38**	**13%**	**114%**	**42%**	**44%**
Counties	**202,726**	**40**	**13%**	**149%**	**55%**	**56%**
Barren	42,229	**40**	16%	89%	63%	54%
Bullitt	74,431	38	11%	239%	30%	31%
Hart	18,278	41	15%	50%	87%	83%
Henry	15,428	41	14%	55%	100%	100%
Metcalfe	10,074	42	17%	43%	100%	100%
Shelby	42,286	38	12%	204%	47%	52%

Table 3 shows the social and economic factors relevant for the 6 counties. The per capita income for the region is < the US average, with the % people in poverty at the US average. The per capita income comparison between Hispanics and Non Hispanics show strong disparities in terms of income. The % individuals 65+ receiving Medicaid is at the US and KY average. The same applies to households receive Supplemental Nutrition Assistance Program (SNAP) benefits. The region has a higher % of people >25 without a high school diploma than the US and KY average. The comparison between Hispanics and

[1] Purpose 1 & 2 will embed ADRD content and focus due to the high prevalence of ADRD in the adult 65+ population. If ADRD funds are awarded, more intense work will be done within the communities to change them to ADRD friendly communities and a more elaborate caregiver support system will be put in place than what will be possible without the additional funds.

Non Hispanics show again the strong disparities in terms of education. The region is at the national average in terms of unemployment rates.

Table 2[3]	Racial and Ethnic Distribution[4, 5]							
NH=Non-Hispanic	NH Whites	NH Blacks	Hispanic	NH Other	Hisp. 65+	NH 65+	Hisp. Pop change 00-10	NH Pop change 00-10
US	64%	12%	16%	8%	6%	15%	43%	4%
KY	86%	8%	3%	3%	3%	14%	122%	7%
Counties	91%	3%	3%	2%	2%	13%	144%	13%
Barren	91%	4%	3%	2%	1%	16%	213%	9%
Bullitt	96%	1%	1%	2%	4%	11%	171%	20%
Hart	92%	5%	1%	1%	2%	15%	74%	4%
Henry	92%	3%	3%	2%	1%	15%	32%	2%
Metcalfe	95%	2%	1%	2%	12%	17%	117%	0%
Shelby	81%	8%	9%	2%	1%	13%	153%	20%

Table 3[3]	Social and Economic Factors[4, 6]											
	Per Capita Income	Per Capita Income Hispanic	Per Capita Income NH	Income below 100% FPL	Hisp. income below 100% FPL	NH income below 100% FPL	65+ receiving Medicaid	House-holds receiving SNAP* benefits	>25 without high school diploma	Hisp. >25 without high school diploma	NH >25 without high school diploma	Not empl.
US	$28,050	$15,993	$30,407	15%	24%	13%	15%	16%	14%	37%	10%	5%
KY	$23,209	$12,953	$23,529	19%	32%	18%	16%	12%	18%	36%	17%	4%
Counties	$22,577	$10,985	$22,977	15%	34%	14%	16%	15%	19%	49%	19%	5%
Barren	$19,613	$10,536	$19,854	20%	22%	20%	20%	21%	21%	37%	21%	5%
Bullitt	$23,951	$14,537	$24,085	10%	7%	10%	14%	11%	16%	37%	16%	5%
Hart	$18,137	$8,535	$18,276	24%	53%	23%	22%	23%	30%	60%	29%	5%
Henry	$21,303	$10,191	$21,659	19%	51%	18%	14%	19%	20%	54%	19%	5%
Metcalfe	$17,347	$15,555	$17,369	16%	38%	16%	19%	18%	31%	90%	31%	6%
Shelby	$26,750	$10,259	$28,360	12%	39%	10%	10%	12%	16%	52%	13%	4%

c) National, state, and local health status indicators of older adults 65+

Table 4 shows the health outcomes data for the 6 counties. High blood pressure for those 65+ is > the US average and at the KY average. The % of the pop. who are obese is also > the US average and at the KY average. The same is true for the pop. 65+ with a disability. Lung cancer incidence is much > the US average and at the KY average. Poor dental care is > the US average, but < the KY average, with Hart County being a negative outlier. Poor general health is worse than the US average and at the KY average with Hart and Metcalf Counties being negative outliers.

Table 4[3]	Health Outcomes[7, 8]								
* per 100,000	Diagno-sed Diabetes 65+	Heart Disease 65+	High Blood Pressure 65+	High Choleste-rol 65+	% Obese	Pop with a Disabi-lity 65+	Lung cancer Annual Incidence*	Poor Dental Health	Poor General Health
US	27%	29%	55%	45%	27%	37%	65	16%	16%
KY	29%	31%	59%	46%	32%	43%	99	24%	21%
Counties	28%	30%	58%	46%	31%	43%	96	19%	20%
Barren	30%	30%	58%	45%	31%	46%	100	22%	22%
Bullitt	28%	31%	58%	47%	31%	42%	93	24%	21%
Hart	32%	29%	61%	47%	33%	48%	111	28%	25%
Henry	28%	32%	59%	52%	33%	39%	113	21%	15%
Metcalfe	29%	29%	56%	45%	34%	58%	104	0%	33%
Shelby	24%	30%	56%	43%	31%	35%	80	9%	14%

Table 5 shows the mortality data for the 6 counties. Years of potential life lost is > the US average and < the KY average with Barren, Henry, and Metcalfe Counties being much > the KY average. Lung disease and cancer mortality is > the US average and < the KY average with Metcalfe County being an outlier (lung disease) and Henry, Hart and Metcalfe being > the KY average (cancer). Stroke and suicide mortality is > the US and KY average with Barren, Henry and Shelby Counties being much > the KY average (stroke) and Henry and Metcalfe Counties being negative outliers (suicide). Coronary heart disease is > the KY

average with Metcalfe County being a strong negative outlier.

d) Needs addressed with KRUGIEP

This project addresses 5 critical problems experienced in the 6 counties in KY: 1) the shortage of the geriatric and primary care health workforce; 2) the need to train a health care workforce that can deliver culturally appropriate services to the growing Hispanic pop.; 3) the difficulties experienced in decreasing the chronic disease burden in rural KY; 4) the lack of supportive rural environments to promote health, specifically for the older rural populations; and 5) the need for ADRD Supportive Education and Resources.

Table 5[3]	Mortality[9, 10]					
* per 100,000	Yrs of Poten-tial Life Lost	Lung Disease Mortality *	Stroke Mortality *	Cancer Mortality*	Coronary Heart Disease Mortality *	Suicide Mortality *
US	**6,851**	**43**	**40**	**174**	**185**	**12**
KY	**8,776**	**62**	**47**	**207**	**217**	**14**
Counties	**7,441**	**55**	**51**	**194**	**214**	**16**
Barren	8,499	47	60	198	230	13
Bullitt	6,614	56	33	189	175	14
Hart	7,806	67	46	232	234	21
Henry	9,511	60	60	241	231	26
Metcalfe	11,072	91	55	221	266	30
Shelby	6,097	46	70	157	239	11

Shortage of the geriatric and primary care health workforce. Inadequate access to clinical care is a major problem for KY residents, specifically those in rural areas. Even though rural communities contain about 20% of America's pop., < 10% of physicians practice in these communities. Poverty and health care are intertwined: persons without resources cannot afford health services, and rural communities without resources have difficulty attracting and retaining health care providers[11].

Barren, *Henry*, and 6 census tracts within *Bullitt* County are designated as Primary Medical Care Health Provider Shortage Areas (HPSA) based on their low-income pop. with significant access barriers to care. *Metcalfe* and 3 census tracts within *Hart* County are designated as Primary Medical Care HPSAs based on their geographic area where primary medical professionals are over utilized, excessively distant, or inaccessible to the pop.. Furthermore, *Barren, Henry* and *Metcalfe* Counties are all designated as Mental Health HPSAs. *Hart, Metcalfe, Bullitt* and 4 census tracts in *Barren* County are designated Medically Underserved Areas (MUA), based on their ratio of primary medical care physicians per 1,000 pop., infant mortality rate, % of pop. with incomes below the poverty level, and % of the pop. age 65 and over[12].

The health care workforce in KY (Table 6) shows significant projected gaps for certain providers.

Table 6[13]	PCPs			Dentists			APRNs			PAs		
	2012	2017	2017 Gap	2012	2017	2017 Gap	2012	2017	2017 Gap	2012	2017	2017 Gap
KY	**10,457**	**11,776**	**1,319**	**1,711**	**2,230**	**519**	**3,057**	**1,802**	**-1,255**	**985**	**937**	**-48**
Barren	104	109	5	13	21	8	31	17	-14	4	9	5
Bullitt	33	170	137	22	32	10	19	27	8	0	14	14
Hart	10	45	35	5	9	4	6	7	1	1	4	3
Henry	6	47	41	3	9	6	0	7	7	4	4	0
Metcalfe	1	28	27	2	5	3	2	4	2	0	2	2
Shelby	41	111	70	17	21	4	14	17	3	5	9	4
	RNs			**LPNs**			**MHP (50% LCSWs)**			**Total health care workforce**		
	2012	2017	2017 Gap	2012	2017	2017 Gap	2012	2017	2017 Gap	2012	2017	2017 Gap
KY	**48,093**	**36,055**	**-12,038**	**11,770**	**9,591**	**-2,179**	**8,538**	**8,284**	**-254**	**84,611**	**70,675**	**-13,936**
Barren	469	337	-132	202	90	-112	60	77	17	883	660	-223
Bullitt	143	520	377	71	138	67	50	120	70	338	1,021	683
Hart	67	138	71	47	37	-10	8	32	24	144	272	128
Henry	29	145	116	23	39	16	15	33	18	80	284	204
Metcalfe	19	85	66	20	23	3	12	20	8	56	167	111
Shelby	201	341	140	68	91	23	70	78	8	416	668	252

Primary care physician (PCP) FTEs show a provider gap in 2017 across KY and in all of the counties. A key gap is that there are only 15 geriatric medicine specialists in the whole of KY, representing 0.14% of

the physician workforce. The provider gap for dentistry is also across KY and in all of the counties. While Physician Assistants (PAs) will not have a gap across KY or Henry County in 2017, they will in all other counties. Also, while Advanced Practice Registered Nurses (APRNs) and Registered Nurses (RNs) will not have a gap across KY or in Barren County by 2017, they will in all other counties. Mental health providers (MHPs), with half of the workforce being licensed clinical SWers (LCSW), show a shortage in all counties, except Barren County. It is interesting to note that although Shelby County is not designated as a HPSA or a MUA, Table 6 shows that there will be significant gaps in Shelby County in the primary care workforce. Also, Shelby County has one of the fastest growing undocumented, uninsured Hispanic populations in KY with significant barriers to access care[14].

This gap in workforce results in an important access problem to primary care physicians, with the amount of people per 100,000 who have access in the 6 counties nearly 50% < the US or KY average (Table 7). The pop. living in health shortage areas is at the US average but > the KY average with Hart and Henry Counties being strong negative outliers. Lack of a consistent source of primary care is also slightly > the US or KY average. This lack of access is seen in the % pneumonia vaccinations for 65+ that are < the US average, as well as preventable hospital events for Medicare enrollees that are > the US average and slightly < the KY average with Hart County a strong negative outlier.

Table 7[3]	Clinical Care				
* per 100,000	Access to Primary Care Physicians	Lack of Consis-tent Source of Primary Care	Pneu-monia vaccina-tions 65+	Population living in health shortage area	Preventable Hospital Events (per 1,000 Medicare enrollees)
US	**75**	**22%**	**68%**	**38%**	**59**
KY	**64**	**19%**	**67%**	**23%**	**94**
Counties	**37**	**23%**	**60%**	**36%**	**84**
Barren	70	24%	54%	15%	58
Bullitt	17	24%	60%	17%	92
Hart	44	20%	58%	82%	121
Henry	33	29%	No data	43%	80
Metcalfe	10	No data	85%	42%	92
Shelby	44	20%	27%	No data	81

Primary care physicians can best provide comprehensive and coordinated care for chronic disease and will be expected to play an increasingly critical role in providing health care as the pop. ages and the burden of chronic disease grows[15]. However, to revitalize general medicine it is important to reduce administrative burdens and introduce payment reform. KRUGIEP is aimed at training students and the primary care workforce to overcome reimbursement barriers for coordinated care that delivers better health outcomes. A report by Deloitte prepared for KY[13] recommends the development of training programs that will support more efficient sharing of responsibilities between physicians and other mid-level health professionals. They further suggest that support systems be integrated into small practices in rural and underserved areas. For example, it was recommended to provide distance learning continuing education (CE) hours to the healthcare workforce to support better care coordination in the rural and underserved areas, and to connect these practices with supervision, oversight and support via remote mentorship options. This will address retention of rural practitioners. These suggestions will be implemented as part of KRUGIEP.

Need to train a health care work force that can deliver culturally appropriate services to the growing Hispanic population in the 6 targeted counties. By 2050 it is expected that the Hispanic pop. 65+ will grow exponentially. Based on national pop. estimates, the non-Hispanic pop. aged 65+ will reach 71 million in 2050, up from 37.4 million in 2010, almost doubling. In comparison, the Hispanic pop. 65+ is projected to grow from 2.9 million to 17.5 million, a more than sixfold increase. The 85+ Hispanic pop. is projected to be 15% (2.9 million), up from 5% in 2010 (305,000), representing a ninefold increase. For the non-Hispanic pop. the increase in the 85+ pop. will be tripled from 5.5 million to 16.2 million[16]. It is predicted that in the next 4 decades rural KY will become a state where international migrants, especially Hispanics, fill the labor void and will no longer be isolated from the latest waves of immigration.[17] The growth of the Hispanic pop. is seen as an important reality for which the healthcare workforce must

prepare. The CDC Health Disparities and Inequalities Report shows that Hispanics have a > prevalence of obesity, diabetes, periodonititis, and HIV infection than White non-Hispanics. Smaller percentages of Hispanics reported being up to date with colorectal cancer screening, and having their blood pressure under control[18]. Research has shown it is important to deliver health messages that culturally represents the minority groups. For example, in Hispanic culture, social influence is critical for motivating health behavioral changes[19]. Promotores have been shown to play a crucial role in reducing health disparities among Hispanic populations as they are natural helpers within the community that deliver messages prepared for the community[20]. The grant team has been successful in building trust within the Shelby County Hispanic community using promotores and a free clinic on two different Passport Health funded projects. Vital lessons were learned during these projects that will contribute to culturally sensitive training materials and integrated geriatric primary care services that will form part of KRUGIEP.

The difficulties experienced in decreasing the chronic disease burden in rural KY. KRUGIEP will take place in the context of a state that is already overly burdened by disease. KY ranked 47th in national health rankings in 2014, dropping from 45th in 2013 and 43rd in 2012[10, 21]. This includes 49th in smoking, 46th in obesity, 33th in diabetes, 50th in poor mental health days, 47th in poor physical health days, 50th in cancer deaths, 48th in cardiac heart disease, 46th in high blood pressure; 49th in high cholesterol, 41st in annual dental visits, 44th in premature death, 47th in strokes; and 48th in heart attacks[21]. These devastating rankings lead to an extreme burden on state and federal health financing.

Goals for improving the health of US citizens can only be achieved if non-metropolitan and rural populations are included to remove the risk factors associated with chronic diseases. Low population density makes it difficult to target service delivery and prevention strategies to rural areas. Groups that are specifically at risk include older adults, the poor, racial and ethnic minorities and persons with disabilities. Chronic disease burden normally increases with decreased urbanization. This is specifically true for death rates for adults age 65+ and cerebrovascular death rates due to hypertension. With KRUGIEP the goal will be to connect already overburdened primary care practices with geriatric doctors and supervisors who can provide guidance on evidence-based practices in the care of older adults with multiple chronic conditions. Care-coordination is almost absent in rural areas, and will be addressed with the service delivery model implemented in the transformed practices. Also, KRUGIEP will connect older adults with supportive community health teams that will provide a community support system to patients and caregivers.

The lack of supportive environments to promote health, specifically for the older rural populations. One of the problems facing KY is the lack of supportive environments promoting health and preventing risk behaviors for chronic disease development for the older rural populations. Table 8 shows the physical environment barriers and behavioral risk factors for the 6 counties. The counties have less access to grocery stores than the national and KY average. There is a strong racial disparity index in the 6 counties in terms of access to healthy food. KY has a long history of poor nutrition habits and obesity. It was one of the first states reaching an obesity rate of over 30%. KY and the 6 counties have more people with inadequate fruit and vegetable consumption than the national US average, ranking 45th compared to other states[22]. Recreational and fitness facility access is < the US or KY average, with three counties (Hart, Henry, Metcalfe) not having any facilities. Lack of participation in any physical activity is > for the 6 counties than the KY average and much > the US average. For older adults, walking is a preferred way to exercise yet, in the rural counties it is dangerous to walk because of a lack of sidewalks. Complete Street Initiatives have not been successful in any of the nonmetropolitan counties of KY. Recent research on Complete Streets indicate that older adults are among the groups that are disproportionately represented in pedestrian deaths[23]. Also, residents of rural communities and small towns are more likely to be hurt or killed as pedestrians than those in urban areas.[24]

Table 8[3]	Physical Environment[4, 25, 26]	Behavioral Risk Factors[7]
*per 100,000 pop; ** 0= no disparity; 1-15 =some disparity; over 15=high disparity		

	Grocery store access*	Pop with low or no health food access, racial disparity index**	Recreational and Fitness Facility Access*	Use of public transpor-tation	Adult smokers	Pop with Inadequate Fruit / Veg. Consump-tion	Pop with no Leisure Time Physical Activity
US	**21**	**17**	**9**	**5%**	**18%**	**76%**	**22%**
KY	**19**	**22**	**7**	**1%**	**26%**	**81%**	**28%**
Counties	**17**	**30**	**6**	**0%**	**29%**	**81%**	**31%**
Barren	24	50	5	0%	29%	80%	30%
Bullitt	7	17	11	0%	27%	81%	31%
Hart	38	60	0	1%	29%	87%	33%
Henry	13	12	0	0%	28%	No data	33%
Metcalfe	20	66	0	0%	37%	No data	32%
Shelby	19	32	5	0%	30%	No data	31%

Adult smokers in the 6 counties are much > the US or KY average. This is directly related to the strong history tobacco has in KY as it remains 1 of 2 largest tobacco-producing states, with more tobacco farms than any other state[27]. Estimates show that nearly 8,000 KY adults die from smoking related illnesses each yr. and that KY spends more than 1.5 billion in annual health care costs directly related to smoking[28].

Public transportation is nearly non-existent in the 6 counties. This is a significant barrier to health care access. The poorest 5th of US families spent 42% of income on transportation (mainly private cars due to lack of public transportation infrastructure) leaving little money for healthy food. Older rural adults without access to private cars are isolated from health care providers and other services in the community[29].

Through KRUGIEP students, professionals and community teams will be trained to develop a public health approach in dealing with chronic diseases affecting older adults. The importance of community support networks will be part of the geriatric educational focus in the developed curriculum. Also, the integrated support systems developed in the 6 counties by the community health teams will specifically address the barriers in the rural communities that make healthy behaviors difficult.

Need for ADRD Supportive Education and Resources

Approximately 5.2 million persons in the US have Alzheimer 's disease (AD), with 5 million being over age 65. Growth over the next years is expected to triple from 5 million to 16 million by 2050 without any scientific discovery to prevent or slow down the disease. An estimated $109 billion in direct healthcare costs are attributable to those with ADRD[30]. Expenditures for dementia care are nearly equal to those for heart disease and are much greater than expenditures for cancer. By 2040, these expenditures for dementia care are projected to more than double to $511 billion[31].

The 2010 Census found 80,000 persons in KY with AD, an overall increase of 8% over the 2000 census, with 4,900 persons between 65-74 years old, 41,000 persons between 75-84 and 35,000 persons age 85+. The growth rate of persons with dementia (PWD) in KY is estimated at 28.4% between 2014 and 2025. An estimated 94% of PWD live with spouses or families and an estimated 20-35% live alone in the community[30].The annual mortality rate in KY for those living with ADRD is 33.7/100,000 compared to the national average of 27 per 100,000. The number of ADRD caregivers in Kentucky in 2013 was estimated at nearly 267,000 providing over 301 million hours in unpaid care. The health care cost of KY caregivers was an estimated $155 million in 2013[30]. The most recent assessment of the needs and service supports for persons living with ADRD in KY was published in 2008 and, with the estimated growth rate of the ADRD pop. expected to increase 255% over the next 10 years, the need for a current assessment is high.

High expenditures for dementia are attributable to lack of caregiver and family support whereby the PWD transitions to residential care instead of remaining at home. Cost of residential care greatly exceeds the cost of community-based care, thus caregiver interventions of support and education are the greatest chance for providing economic savings over time. A growing body of literature demonstrates that these type of non-pharmacological educational interventions are effective in improving the quality of life for PWD and their caregivers[32, 33] and will be the focus of the ADRD goal 3.

e. Current training activities focused on the needs of the healthcare workforce, older adult

patients, their caregivers and families.

Department of Family and Geriatric Medicine/UofL Geriatrics at the UofL School of Medicine. UofL Geriatrics will provide geriatric expertise to all students, professional and community team learners. Their current trainings are multifaceted, including: 1) The Chief Resident Immersion Training (CRIT) delivered to chief residents, program directors and faculty mentors reinforces the importance of interdisciplinary collaboration in caring for older adults; 2) The UofL Geriatric Medicine fellowship, established in 1998 with 39 fellow graduates, trains 3 fellows annually in the care of older adults.; 3) UofL Geriatrics, (7 geriatricians, 4 nurse practitioners (NPs), geriatric medicine Pharm D), teaches fellows, residents, medical students and other learners using a team based model with weekly didactics and rounds; 4) UofL Geriatrics is actively involved in med. management trainings through their Polypharmacy Program dedicated to polypharmacy education, research and public outreach for complex older adult medication management; 5) UofL Geriatrics staffs an outpatient office, a hospital service, a nursing home service and a home care program, using an interdisciplinary team approach, 6) UofL Geriatrics' team of geriatricians, nurse practitioners, a er, a geriatric pharmacist, and a psychologist participate in the Geriatric Evaluation and Treatment (GET) program which provides comprehensive geriatric assessment for patients and their families/caregivers; and 6) UofL Geriatric hosts monthly Geriatric Medicine Grand Rounds, monthly Journal Club and a weekly didactic conference.

Institute for Sustainable Health and Optimal Aging (ISHOA). The Annual Geriatrics Symposium, housed within ISHOA, is a daylong event offering interdisciplinary CEs and immersion in geriatric training skills. The symposium presents the most updated skills training and theories related to geriatrics.

Interdisciplinary Curriculum for Oncology Palliative Education (iCope). In 2010, UofL Medical School, in collaboration with the School of Nursing, the School of SW and the UofL Hospital Chaplaincy Resident Program (Head, Schapmire, Faul, Woggon), received a 5 year R25 grant from NIH to develop iCope, exposing 551 learners to an interdisciplinary curriculum focused on caring for adult oncology patients at end of life. The faculty met the mandates of IPE by creating a curriculum that is centrally-driven, mandatory for all learners, requires participation in interdisciplinary face-to-face learning experiences, and is designed to be efficient and sustainable[34]. The lessons learned in iCope will be used extensively in KRUGIEP to inform the curriculum delivery.

Kent School of SW, UofL. Kent School will provide mental health and community health team expertise to students and professional learners. Their current trainings are multifaceted covering a wide range of activities: 1) In 2010, Kent School (Faul, Yankeelov, D'Ambrosio) received a 2.5 million grant from the CDC in partnership with KIPDA Area Agency on Aging and Independent Living (AAA/IL) (one of our partners in KRUGIEP) to eliminate diabetes-related disparities in vulnerable populations in 3 rural KY counties (Bullitt, Henry and Shelby). The 5-year initiative focused on the reduction of diabetes-related complications for people of low socioeconomic status by developing improved personal diabetes self-management practices. Personal behavior change focused on better eating and exercise habits, reduction of smoking, and better glucose monitoring and medication adherence [35]. As part of this initiative, a 3 county coalition was developed to guide the community education events and interventions[36]; 2) In 2012, Kent School (Faul, Yankeelov, D'Ambrosio) implemented a project in Shelby County for uninsured Latino families affected by diabetes focusing on a family multilevel lifestyle education intervention.The project resulted in trust relationships built within the Latino community, and creation of a food pantry; 3) Kent School faculty (Faul, D'Ambrosio) are advanced trained Motivational Interviewing (MI) therapists, and provided MI training to over 300 Aging and Disability Resource Center staff and Case Managers, Support Brokers, Community Organizers and Peer Mentors over the past five years; 4) The Ohio Valley Appalachia Regional Geriatric Education Center (OVAR-GEC), affiliated with the Kent School (Shiels), provides education and training in fall prevention, dementia and emergency preparedness; 4) Kent School has a master level student gerontology specialization.

School of Nursing, UofL. The School of Nursing does the following trainings: 1) An Adult Primary Gerontology Nurse Practitioner program; 2) The Caregivers Program (Robinson) includes a community engagement goal of community caregiving and Alzheimer's disease education to community groups. Through this program 160 caregivers of Alzheimer patients have been trained in the individualized Progressively Lowered Stress Threshold (PLST) intervention by providing education and support to caregivers; and 3) An enhanced Interprofessional Collaborative Practice (Nash) between nurse practitioner students and dental students via a technology enhanced IPE model focused on the oral-systemic health connection per a DHHS, HRSA grant.

School of Dentistry, UofL. The School of Dentistry trains dental and nursing students in the Smiles for Life Curriculum assessing oral health (Hupp). This curriculum is available online.

Area Agencies on Aging and Independent Living (AAAIL): AAAILs deliver: 1) The Stanford's Chronic Disease Self Management Program, a 12 week program to help older adults with multiple chronic conditions manage their conditions; 2) Tai Chi for Arthritis program designed to increase balance and flexibility; 3) A Matter of Balance community-based program focused on reducing fear of falling and increased activity; 4) Walk with Ease community-based program designed to decrease disability and improve arthritis symptoms, efficacy, control, balance, strength, and walking pace; 5) Cooper/Clayton Smoking Cessation community based program aimed to help people stay smoke-free ; 6) Arthritis Exercise community based low impact exercise program to improve functional ability, self-confidence, self-care, mobility, muscle strength and coordination; 7) Health Rhythms interactive drum group program focused on reducing anxiety, reducing blood pressure and improving overall mood; 8) Falls Talk, a self-guided computer-based approach to improving participant outcomes in falls prevention; 9) HomeMeds, a computerized application for homebound older adults to record medications to assess for potential interactions and complication from multiple prescriptions; 10) Training for caregivers of older adults and grandparents raising grandchildren to manage work, family and caregiving responsibilities; and 11) Benefit counseling by trained State Health Insurance Program (SHIP) staff and volunteers who help Medicare beneficiaries understand and enroll in Medicare benefits.

The gap in current training activities. Reviewing the above training provided by UofL schools and their partners leave the impression of strong expertise in the field of geriatric education. However, apart from the iCope curriculum, most of the trainings and educational opportunities are very discipline specific with just a few exceptions on a limited level (UofL Geriatrics, Nursing). Competencies, strategies and accreditation requirements for IPE are clearly outlined; however, developing and implementing IPE activities at the grass roots level challenges institutions. In fact, the literature contains few examples of comprehensive and mandatory IPE endeavors in the health sciences. iCope created a unique opportunity to develop a curriculum addressing institutional challenges with self-directed online learning, experiential learning and interdisciplinary team experiences. The lessons learned from iCope will be used in KRUGIEP to develop the Interdisciplinary Curriculum for Geriatric Education (ICGE).

Current Health Care Delivery Training Systems. UofL Geriatrics is seen by many patients as their primary care practice, providing geriatric experts (half of the geriatric experts in the state of KY are practicing at UofL Geriatrics). However, services are mainly delivered to older adults in Jefferson County with a limited reach to the rural surrounding counties (15% of clients served in the last year). One physician at UofL Geriatrics, Dr. Patrick Murphy, has a home care practice in Bullitt County that serves as the main outreach to surrounding counties done by the UofL Geriatrics practice. UofL Geriatrics is an excellent site that will provide supervision to remote rural primary care sites on integrating geriatrics into primary care.

The Kent School of SW Community Outreach programs and activities are excellent sites to train students on integrating public and population health into the primary care service delivery. However,they have been run separately from primary care delivery systems, despite much outreach for collaboration.

The Glasgow Family Medicine Center (GFMC) (the primary training site for UofL medical residents that

will be transformed to deliver integrated geriatric and primary care) delivers outpatient primary care to approximately 10,000 patients per year. The clinic is managed by T.J. Sampson Community Hospital, which serves Barren, Hart and Metcalfe Counties. The Center provides care for nursing home residents, inpatient and hospital follow-up care and psychological counseling. They work closely with the South Central KY AHEC to educate health professionals and are a University Administered Family Medicine Residency Program training 4 residents/year. Residents complete 36 months of training to be eligible for their Family Medicine Boards administered by the American Board of Family Medicine (ABFM). Twelve residents live and train at the GFMC. They have graduated 58 family physicians, with approximately 70% of their graduates going on to deliver care in rural and underserved areas. One of the physicians at GMFC completed the CRIT training and has some experience in integrating primary care with geriatrics. None of the other counties targeted with KRUGIEP have any practices with expertise in integrating geriatrics into primary care, as well as community-based support services.

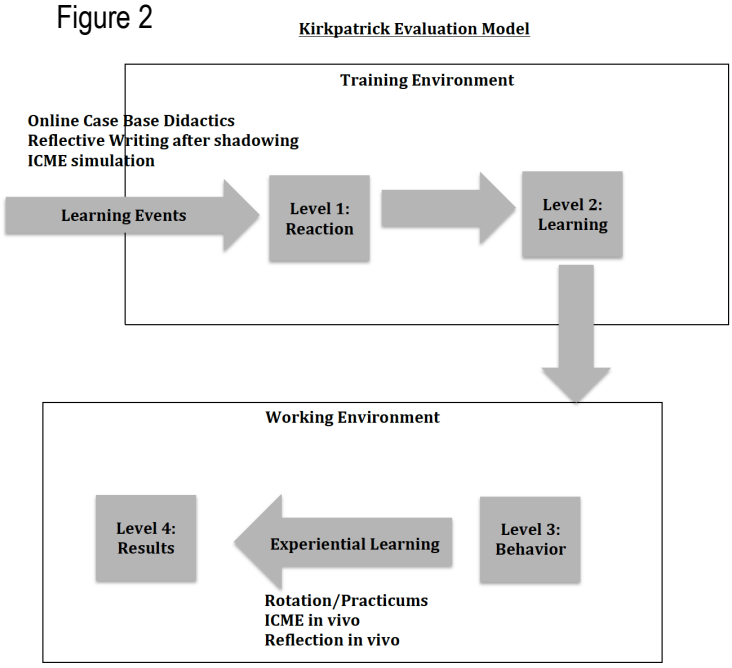
Response to Program Purpose

(a) Methodology

KRUGIEP addresses all of the focus areas as described in the RFP, with the specific goals as follows: 1) Transform clinical training environments with the development and delivery of an Interdisciplinary Curriculum for Geriatric Education (ICGE); 2) Transform primary care sites to delivery Integrated Patient-Centered Geriatric Primary Care and Community Based Services (IPC-GPS-CBS) to older adults 65+ with 2 + chronic conditions; and 3) Provide training and community engagement resources to create ADRD-friendly communities in the 6 counties.

The premise of the first 2 goals is based on Kirkpatrick's Training Evaluation Model (Figure 2)[37]. According to Kirkpatrick, learning is only effective if what is learned within a training environment is transferred to work environments. In order to facilitate this transfer, various primary care clinical sites will be transformed to Integrated Patient-Centered Geriatric Primary Care sites where clinical health care teams work in an integrated fashion with community health teams to deliver care to older adults. Students, professionals and community health teams will first be trained with an interdisciplinary curriculum to ensure the necessary knowledge, skills and attitudes of interdisciplinary geriatric care, and then will transfer this knowledge to the transformed primary care sites. This transfer of learning to a real life primary care environment will lead to better care of older adults[37].

Figure 2



Goal 1: Transform clinical training environments with the development and delivery of an Interdisciplinary Curriculum for Geriatric Education (ICGE)

The major objectives for goal 1 are the following: 1) By the end of year 3, the interdisciplinary project team will have transformed the clinical training environment for an interdisciplinary group of

students/residents/fellows at UofL (medicine, nursing, SW/MFT[2], dentistry, pharmacy, law) with ICGE where content area, curricular learning objectives and student learning outcomes are aligned and focused on teaching general principles of interdisciplinary geriatric care using problem based learning; 2) By the end of year 3, the interdisciplinary faculty will have created a professional continuing education (CE) environment in KY where ICGE form part of professional CE hours for medicine, nursing, SW/MFT, dentistry and pharmacy; 3) By the end of year 3, ICGE will be delivered to interdisciplinary students, professionals, and community health teams where 90% of the learners will show satisfaction with learning, and increased knowledge, skills and self-efficacy in interdisciplinary geriatric care. The specific activities that will make these objectives a reality are shown in the **Work Plan**.

The **Interdisciplinary Curriculum for Geriatric Education (ICGE)** will be modeled after the Interdisciplinary Curriculum for Oncology Palliative Care Education (iCOPE), a curriculum developed at the UofL Medical School in response to a NCI R-25 grant. The interdisciplinary content areas, learning objectives and student learning outcomes of ICGE (Table 9) were developed through a systematic review of: 1) the Geriatric Competency Grid (GCG)[38] designed for dentistry, medicine, nurse practitioner, pharmacy and SW and based on program requirements for residency education in internal geriatric medicine, gerontological NPs primary care competencies, geriatric pharmacy curriculum guide, list of competencies for dentistry from the Univ of Maryland and the geriatric SW competency scale; 2) The National Consensus Project for Quality Palliative Care[39]; 3) Standards of care for geriatric case management[40]; 4) Core Competencies for Interprofessional Collaborative Practice from the IPE Collaborative[41]; 5) The National Quality Strategy's six priorities designed to help focus efforts and accelerate meaningful change within the healthcare system[42, 43]; 6) The Partnership for Health in Aging Multidisciplinary Competencies in the Care of Older Adults at the Completion of the Entry-Level Health Professional Degree[44], and 7) Clinical Practice Guidelines on the Comprehensive Care of People with Alzheimer's Disease and Other Dementias[45].

Table 9: Interdisciplinary learning objectives and student learning outcomes

Content area	Curricular learning objectives	Student learning outcomes
Interprofessional collaborative practice	Work effectively with colleagues of multiple professions, across multiple settings	Work effectively with individual of other professions to maintain a climate of mutual respect and values.
		Use the knowledge of one's own role and of other professions' role to appropriately assess and address the health care needs of the older adults.
		Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease.
		Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-centered care that is safe, timely, efficient, effective, and equitable.
Physical assessment, care and evaluation	Provide effective physical care to address geriatric care needs.	Assess the physical symptoms affecting the patient.
		Formulate discipline specific interventions addressing physical symptoms.
		Construct an interdisciplinary plan of care for addressing physical symptoms.
		Evaluate the interdisciplinary plan of care for addressing

[2] At Kent School of Social Work students can enroll in a dual certification in Social Work and Marriage and Family Therapy, both licensed clinical professions providing mental health services.

		physical symptoms and adjust when appropriate.
Psychosocial, spiritual and cultural assessment, care and evaluation.	Provide patient-/family centered care that addresses the unique psychological, spiritual, social, and cultural orientation and needs.	Assess the psychosocial, spiritual, and cultural needs and resources of the geriatric patient, caregiver and family.
		Formulate specific interventions addressing psychosocial, spiritual, and cultural needs of the patient and family.
		Construct an interdisciplinary plan of care for addressing psychosocial, spiritual, and cultural needs of the geriatric patient, caregiver and family.
		Evaluate the interdisciplinary plan of care for addressing psychosocial, spiritual, and cultural needs of the geriatric patient, caregiver and family and adjust when appropriate.
Environmental risk assessment, care and evaluation.	Provide patient-/family centered care that addresses the environmental risks in the care of the older adult.	Assess the environment within which the geriatric patient functions and determine risk factors.
		Formulate specific community interventions addressing the risk factors.
		Construct an interdisciplinary community plan of care addressing the environmental risk factors.
		Evaluate the interdisciplinary community plan of care addressing the environmental risk factors and adjust when appropriate.
Teaching/ Coaching	Provide disease management teaching and coaching to older adults, their caregivers and families.	Deliver quality interdisciplinary disease management education to older adults, their caregivers and families.
Ethical/Legal	Identify and address ethical and legal issues impacting older adults and their caregivers and families	Apply ethical and legal principles to the practice of geriatric care.
		Recognize how one's own values, beliefs, and feelings influence geriatric practice.
Managing and negotiating health delivery systems	Provide effective care transition guidance to older adults, their caregivers and families	Demonstrate the ability to navigate complicated systems of care to ensure the best care possible for older adults, caregivers and families.
Communication	Communicate effectively with patients, families, and colleagues	Demonstrate effective communication skills in interactions with older adult patients, families, caregivers and colleagues.

The education modalities for ICGE are fourfold with a differential exposure for learners depending on their status as student, professional or community health team (CHT) member (Table 10).

Table 10: Educational modalities for ICGE

Curriculum Component	Students	Professionals	CHT
A: Online Case Based Didactics	Yes	Yes	Yes
B: Simulated Interprofessional Case Management Experience (ICME)	Yes	No	Yes
C: Shadowing health care sites with reflective writing exercise	Yes	No	No
D: Rural Primary Care Site Infusion with ICME and Reflections (In vivo)	Yes (rotations/ practicums at sites)	Yes (at sites)	Yes (in counties where sites are)

The online case based didactics, and the ICME video vignettes will be developed in the first 6 months by an interdisciplinary team of faculty from medicine, nursing, pharmacy, SW/MFT, chaplaincy and the law. Note that ADRD curricular content will be embedded within ICGE as part of the main project due to the prevalence of this condition in the older adult 65+ population, and the need to train the workforce in early

detection and treatment. Therefore, 1 of the online case based didactics and 1 of the video vignettes for ICME will be focused on a PWD and his/her caregiver and family. Goal 3 directed specifically to ADRD education focuses mainly on caregiving/community education and supports.

The development of the online case based didactics and video vignettes will be directed by iCOPE faculty (Faul, Head, Schapmire), gerontologists who understand how to develop case scenarios for IPE. After the online modules and the written case video vignettes are developed, they will be sent to 2 interdisciplinary education experts for review. A 1-day retreat will then be planned with the project team and the 2 experts for quality educational critique.

To transform primary care sites in the 6 counties to deliver Interdisciplinary Patient Centered Geriatric Primary Care and Community Based Services (IPC-GPC-CBS), collaborative partner agreements were established with primary care sites to start the process of transformation in year 1. These sites are GFMC serving the counties of Barren, Hart and Metcalfe (Dr. Wright), Shelby (Dr. Waldrige, Shelby Family Medicine), Henry (Dr. Gatewood), and Bullitt (Dr. Murphy, ULGeriatrics). Mercy Medical agreed to participate as a free clinic serving the large Hispanic population in Shelby County and surrounding areas. Although they won't be able to provide medical preceptors, nursing nor SW/MFT supervisors at their practice (they are staffed with volunteer medical providers, nurses, pastoral caregivers), they will function under Dr. Waldridge, using Spanish-speaking students. (See attachment 2 for letters of agreement).

During year 1+, additional collaborations will be established with smaller rural practices, in collaboration with the Area Health Education Centers (AHECs) and the AAA/ILs. Two small rural practices in Hart and Metcalfe Counties have shown interest to collaborate starting in year 2 of KRUGIEP. Also, Dr. Waldridge from Shelby Family Medicine, the chairman of KYOne Physicians group, will help recruit more sites for this new transformed service delivery approach through this network.

All 4 committed sites already have preceptor agreements with the UofL Medical School to place medical students on their AHEC rotations, making it easier to implement in the last 6 months of year 1 when the curriculum will first be offered. Practicum placement agreements with SW/MFT students and nursing students will be developed in the first 6 months of this project. UofL Geriatrics already has a partnership with the University of KY College of Pharmacy to accept two PharmD students every 6 weeks under the direction of a Pharmacy Fellow who will provide remote medication management services to the sites. The Fellow will start working in year 2, with an annual stipend of $45,000 plus health benefits.

To ensure effective community-based services, collaborative partner agreements were established with the KIPDA AAA/IL as well as the Barren River AAA/IL. (See attachment 2 for letters of agreement). All of these partners took an active role in the original design of KRUGIEP.

Table 11 provides an overview of the projected involvement of each discipline in ICGE, for the first full academic year of implementation (Year 2), indicating how many will be exposed to each of the ICGE components. (For this calculation, it is conservatively estimated that only the current collaborative partner sites will accept students). As seen from the table, medical residents and students on required AHEC rotations will all become part of ICGE. SW students in the gerontology specialization, as well as those interested in medical SW, nursing students, undergraduate and those in the graduate adult primary gerontology NP program, will be part of ICGE. One fellow from pharmacy and students in their 4th year PharmD program will take part in ICGE. Students in the professional dental and undergraduate dental hygiene programs will be part of some aspects of ICGE. Law students will use their service hours as part of ICGE. Professionals in medicine, SW, nursing, pharmacy and dentistry will be able to be part of ICGE for CE hours. A variety of health and service delivery disciplines as well as community volunteers will be part of ICGE and eligible to receive gerontology certificates from ISHOA. It is estimated that 595 learners in year 2 & 3 will complete different parts of ICGE (assuming no additional partner sites). In year 1, with only 6 months of implementation the amount of learners will be 237.

Table 11: Learner Involvement in ICGE annually

Learner	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mrch	Apr	May	June	Annual Totals
Family Medicine													
3rd year medical students on AHEC rotation (3 weeks, 4 sites)		A B C D		A B C D		A B C D		A B C D		A B C D		A B C D	
Total # of students		***4***		***4***		***4***		***4***		***4***		***4***	***32***
3rd year medical students on AHEC rotation (NOT at sites) (3days)		A B C		A B C		A B C		A B C		A B C		A B C	
Total # of students		***6***		***6***		***6***		***6***		***6***		***6***	***48***
Medical res. (GFMC)	ABCD												
Total # of residents	***4 (1st year post graduate); 4 (2nd year post graduate); 4 (3rd year post graduate)***												***12***
Practicing PCPs at sites	ABCD												
Total # of prof. PCPs	***1 at each of the 4 transformed sites***												***4***
Practicing PCPs from affiliated hospitals and specialty practices (CME) (8hrs)	A	A	A	A	A	A	A	A	A	A	A	A	
Total # of professional physicians	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***48***
Total # family medicine participation													***144***
Social Work													
1st year MSSW students as health coaches (450 clinical hours)*			ABCD										
Total # of students			***1 at each of the 4 transformed sites***										***4***
2nd year MSSW students as clinical SW/MFT interns (450 clinical hours)*			ABCD										
Total # of students			***1 at each of the 4 transformed sites***										***4***
2nd year MSSW students in gerontology specialization/electives (3 days Fall/Spring; 4 months Summer*)	ABCD		ABC				ABC				ABCD		
Total # of students	***4***		***4***				***4***				***4***		***16***
Practicing SWers (CE) (8hrs)	A	A	A	A	A	A	A	A	A	A	A	A	
Total # of prof. SWers	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***48***
Total # SW participation													***72***
Nursing													
Adult Primary Gerontology Nurse Practitioner (NP) Students (672 hours)*	ABCD												
Total # of students	***3 at transformed sites (Shelby, Henry and Bullitt Counties)***												***3***
4th year BSN students in final year (3 days)	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	
Total # of students	***8***	***8***	***8***	***8***	***8***	***8***	***8***	***8***	***8***	***8***	***8***	***8***	***96***
Practicing nurse practitioners (CE)(8hrs)	A	A	A	A	A	A	A	A	A	A	A	A	
Total # of prof. NPs	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***4***	***48***
Total # nursing participation													***147***
Pharmacy													
Pharmacy fellow	ABCD												
Total # of fellows	***1***												***1***
3rd year pharmacology students under supervision of fellow on	A B C		A B C		A B C			A B C		A B C		A B C	

6 weeks clinical rotation	D		D	D			D	D		D	D		
Total # of students	***2***		***2***	***2***			***2***	***2***		***2***	***2***		***14***
Practicing pharmacists (CE) (8hrs)	A	A	A	A	A	A	A	A	A	A	A	A	
Total # of professional pharmacists	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***24***
Total # pharmacy participation													***39***
Dentistry													
2nd year Professional Dental (DMD) students & 4th year Dental Hygiene (B.S.DH) students			AB				AB						
Total # of students			50				50						**100**
Practicing dentists (CE) (8hrs)	A	A	A	A	A	A	A	A	A	A	A	A	
Total # of prof.dentists	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***24***
Total # dentist participation													***124***
Law													
Law students completing public service (30 hours) (D limited based on need)	AD	AD	AD	AD	AD	AD	AD	AD	AD	AD	AD	AD	
Total # of students	***1***	***1***	***1***	***1***	***1***	***1***	***1***	***1***	***1***	***1***	***1***	***1***	***12***
Total # of law participation													***12***
Variety of health and service delivery disciplines													
Frontline workforce (5 days) (D limited based on need)	ABD		ABD	ABD			ABD	ABD		ABD	ABD		
Total # of CHT frontline workforce	***5***		***5***	***5***			***5***	***5***		***5***	***5***		***30***
Community organizers	ABD												
Total # of CHT COs	***3 Community Organizers (COs)***												***3***
Total # of health and service delivery disciplines													***33***
Community volunteers													
Peer mentors & Other volunteers (eg. Ministers)	ABD	ABD	ABD	ABD	ABD	ABD	ABD	ABD	ABD	ABD	ABD	ABD	
Total # of CHT team peer mentors	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***2***	***24***
Total # of community volunteers													***24***
Total # of learners													***595***

A: Online Case Based Didactics; B: Simulated Interprofessional Case Management Experience; C: Shadowing health care sites with reflective writing exercise; D: Rural Primary Care Site Infusion with ICME (In vivo) and Reflections (In vivo)

* and nurse practitioner students completing practicum placements at the transformed primary care sites are eligible for small tuition stipend of $500 per semester.

All learners will begin ICGE by completing **(A) 3 geriatric online case based didactic modules,** focused on the care of an older adult with complicated co-morbid chronic conditions and lack of community support. Content for the modules will be provided by geriatric medicine, pharmacology, nursing, nutrition, dentistry, SW/MFT, chaplaincy, and the law. The modules use problem-based learning to introduce core interdisciplinary geriatric care concepts and put learners on the same level from diverse background and experiences. A 4th module will address **interprofessional teams** and practice specifically care planning. A 5th module will focus on family system level training in **Motivational Interviewing (MI)** where learners will be trained to intervene using systemic MI that looks at the system surrounding the patient as the change unit. Learners complete all five modules prior to other learning activities. Modules are adapted after the iCOPE modules that were created using Softchalk©[46] which allows for interactive quizzes and activities, immediate learner feedback, and web linking. Online delivery allows for efficiency and provides flexibility to busy learners. Learners will complete the case based didactics either for course credit, professional CE's or

gerontology certification, depending on the discipline (Table 9).

The (B) simulated ICME component focuses on learners working as interdisciplinary teams to address geriatric care needs. *Student learners from medicine, SW/MFT, nursing, dentistry, and pharmacy* work together with a faculty facilitator. Written materials and video vignettes present to the students a patient with advanced geriatric care issues working with a healthcare and community provider team. Each case is unique in setting, patient demographics, and biopsychosocial, ethical/legal and community issues. Learners participate as team members representing their own discipline in a real-time simulation of a clinical case management team meeting. Faculty facilitators are guided by facilitative theory, rather than directing the learner-centered experience[47]. *Community health team members,* specifically *community organizers, peer mentors, and frontline workers* will participate in an ICME component similar to the one done by other learners, but with a focus on simulating a community case management team meeting, using video vignettes and written materials of the same cases presented to student learners. SW/MFT students, NP students, the pharmacy fellow and community organizers will take part in 4 simulated ICME experiences annually, whereas, medical students on AHEC rotations, medical residents, BSN nursing students, pharmacy, dental and law students, as well as the frontline workers, community organizers and peer mentors will only be exposed to 1 simulated ICME experience annually (Table 9).

The **(C) shadowing of health care sites with reflective writing exercises** expose all student learners from *medicine, SW/MFT, dentistry and nursing* to a health care site where they will shadow the care delivered to an older adult and his/her caregiver and family. Students placed at the transformed primary care sites will complete this shadowing at the beginning of their placement/rotation/residency. Students not placed at the transformed primary care sites, will be placed at any AHEC site (medical students on rotation), UofL hospital, UofL Geriatrics (pharmacy students), an Area Agency on Aging and Independent Living (AAA/IL) or another site arranged centrally by the project team for 1 day. For the *reflective writing* component, students write a semi-structured reflection, 3-4 pages about their shadowing. The writings include the learners' patient summary, a care critique, team function and limitations, and personal impact. Writings are submitted after the shadowing experience to a faculty facilitator who responds with written feedback. The reflective writing sessions are interprofessional groups of 5-7 learners with one faculty member. Medical students on AHEC rotations, medical residents, SW/MFT students, BSN nursing students, and the pharmacy fellow and students will all be exposed to 1 reflective writing exercise.

The **(D) Rural Primary Care Site Infusion with ICME (In vivo) and Reflections (In vivo)** will reinforce and embed ICGE learning experiences for *medical students, medical residents, SW students, and NP students* with direct patient and team experiences. Professionals and community health teams affiliated with the transformed primary care sites are also part of the rural primary care site infusion. Older adult patients at the primary care sites will be exposed to the integrated health care team consisting of a *clinical interdisciplinary team* at the site and a *community health team* in the community. SW students designated as health coaches will connect the two teams (See goal 2 & figure 3). The *pharmacy fellow* and *PharmD students* will serve all sites remotely by using electronic records of patients and Skype interviews with the clinical/community teams. As part of their 30-hour public service requirement, *law students* will work with the community health teams to provide legal/ethical support to older adults, caregivers and families.

Each older adult and his/her caregiver and family, will undergo an ICME experience, with the clinical and community team. The *clinical interdisciplinary team* will be made up of a doctor, medical student, NP and/or NP student, and a clinical SW/MFT student. They will develop a clinical care plan for the older adult and caregiver and the *health care coach* (SW student) will communicate the clinical care plan to the community health team. The *community health team* will be comprised of an AAA/IL caseworker, peer mentor, community organizer, and if warranted their minister or frontline workers. During each of these meetings, an in-vivo reflection will be done with the group led by the LCSW/SW clinical student based on the work of Andersen[48]. The purpose of the reflect team process is to create collaborative relationships

and engage in meaningful dialogue with the older adult, caregiver and family. After 3-months of service delivery, the ICME experience will be repeated with both the teams as part of case management review to ensure proper implementation.

An interdisciplinary faculty team will provide team supervision to the primary care sites and community health teams 2x year on site to ensure effective transfer of knowledge. However, they will be available via remote technology to provide supervision on a case-by-case basis. Both UofL Geriatrics and the ISHOA have technology capabilities to connect remotely with health coaches and other team members at the sites who will be provided with iPads.

All the medical residents in Glasgow, some medical students on AHEC rotations, the family physicians at the transformed sites, all nurse practitioners and students, all SW/MFT students, the pharmacy fellow and students, law students, frontline workers, community organizers and peer mentors, will be part of the rural primary care site infusion.

To increase the diversity of the health workforce for older adults in the identified counties, special recruitment will be promoted to include minority medical students to be placed at the sites during their AHEC rotations, with the requirement that at least 1/3 of all students placed at the sites during a year must be from a minority group. All students on AHEC rotations completing ABC of ICGE will be representative of the current study body where 31% are from a minority group. For the 3 SW students that will be placed at each site every year, it will be a requirement that at least 1/3 students will be of a minority group – a number that will represent the 33% of minority students in the Kent School. All BSN nursing completing ABC of CGE will be representative of the current study body where 18% of students are from a minority group. Dentistry students doing parts A and B will be representative where 20% of students are from a minority group. Only 13% of law students are currently from a minority group. It will be a requirement that at least 2/12 students doing their legal public service hours in the targeted counties must be from a minority group. It will be required that at least 33% of the pharmacy students on rotation at UL Geriatrics will be from a minority group. To address the need for a Spanish speaking health care workforce, $13,500 tuition scholarships will be provided to 3 Spanish speaking students from any discipline who participate in the rural primary care site infusion, starting in year 2. The pharmacy fellow will be recruited from graduates of the DPharm degree from a school of pharmacy. Special emphasis will be placed to recruit a minority fellow to fill this position. Throughout the implementation period, faculty will review evaluations each semester and refine the curriculum, as needed.

Goal 2: Transform primary care sites to deliver Integrated Patient-Centered Geriatric Primary Care and Community Based Services (IPC-GPC-CBS) to older adults 65+ with 2 or more chronic conditions.

The major objectives for goal 2 is the following: 1) By the end of year 3, at least 50% older adults 65+ with 2 or more chronic conditions and their caregivers/families at each transformed site will have received IPC-GPC-CBS and show improved patient experience, improved clinical outcomes and reduced cost of care; 2) By the end of year 3, all members of the clinical care team as well as the community care team will be engaged in team self care that promotes improved work life for those delivering care, and will show an improved level of satisfaction with health care and community service delivery. The specific activities that will make these objectives a reality are shown in the **Work Plan**.

The Integrated Patient-Centered Geriatric Primary Care and Community Based Services (IPC-GPC-CBS) (Figure 3) is based on Vermont's blueprint for medical homes and community health teams [49], and is enhanced with Coleman's Care Transitions Intervention focused on patient-centered team care[50], and the Program of All-inclusive Care for the Elderly (PACE)[51].

Each of the transformed sites will consist of interdisciplinary professional teams consisting of primary care physicians trained in family medicine, NPs, a licensed medical mental health therapist (if already employed at the site), and medical students/residents, nurse practitioner students and SW/MFT students

completing part D of ICGE. If there is no licensed clinical SWer on staff, an outside LSCW/LMFT will be recruited to provide supervision to the SW/MFT students. Health coaches (SW students) will be the main care coordinators, bringing the PC teams and community health teams together to serve patient needs. They will also be the overall managers of the interdisciplinary case management plans (CMPs), securing effective, coordinated service delivery.

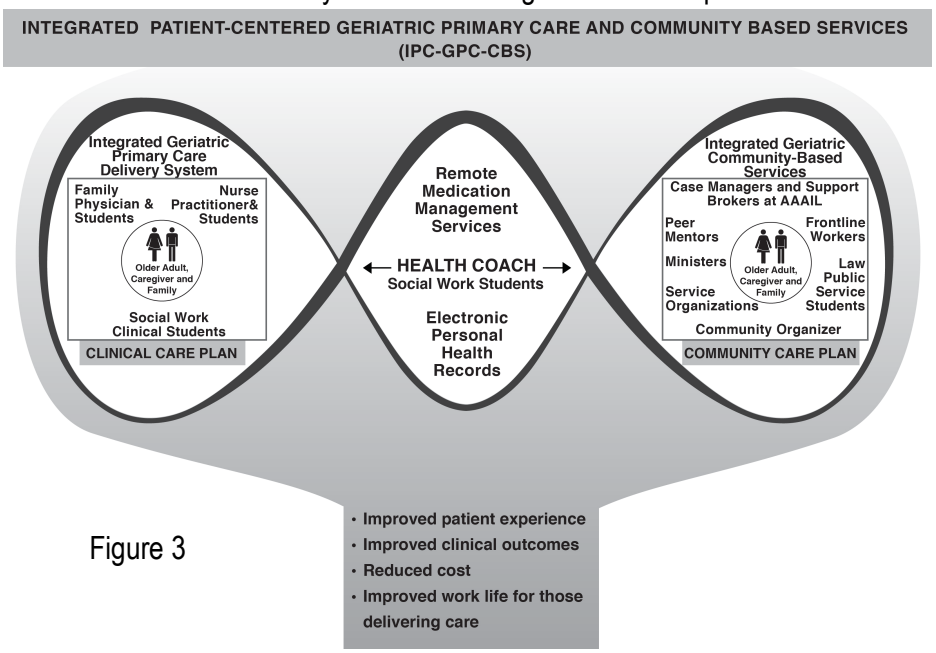


Figure 3

Geriatric community-based service coalitions in each of the participating counties will work closely with the transformed sites to assess patient's needs, coordinate community-based support services, and provide interdisciplinary care for the patients. These coalitions will consist of community organizers (COs), AAA/IL staff, service organizations, frontline workers, ministers, law students providing public service, peer mentors and older adults/caregivers/families.

Henry, Bullitt and Shelby Counties already have active COs with active geriatric community-based service coalitions working with older adults with Type 2 Diabetes and other co-morbid conditions. As part of a CDC funded grant, these community organizers built a network of support for older adults in the counties. The 3 Cos appointed to KRUGIEP will build on these networks in Bullitt, Henry and Shelby Counties. They will expand their reach by helping the rural counties of Barren, Hart and Metcalfe to develop similar geriatric community-based service coalition. The main role of the COs will be to bring the resources in the community together to support integrated services to older adults and their caregivers and families. Within each of the counties, peer mentors will be recruited to provide social support to the older adult patients. The peer mentor engagement will be modeled after a successful CDC funded peer mentor program established in Bullitt, Henry and Shelby. Ideally, peer mentors will be paired with patients who have similar chronic conditions as the peer mentors. As part of the development of the interdisciplinary community care plan, peer mentors, under the supervision of the health coach, will do a home assessment of each client. As indicated law students will be available in all the counties to provide legal and ethical support to the patients, caregivers and families. Pharmacy students will provide remote medication management services. (During year 1 Antimisiaris will perform these duties).

As part of patient empowerment, older adults will be trained in the creation of a portable electronic Personal Health Record (ePHR). The ePHRs will be used to teach older adults to take an active role in monitoring their health. Each patient will receive a "Key 2 Life" keychain to store their health information. Health coaches will ensure patients keep records current.

Older adults will be exposed to disease-specific education and training, provided both online and in monthly face-to-face trainings. Also, older adults will be exposed to the 6 week Stanford Chronic Disease Self-Management Program (CDSMP) currently offered through the AAA/ILs in the 6 selected counties.

Current patients 65+ at the transformed sites with 2+ chronic conditions will be eligible to receive IPC-GPC-CBS. To ensure the development of a reimbursement structure for integrated services within the

constraints of the KY state law and the CMS initiatives in the state, a coding specialist from the KY Medical Association (KMA) will work closely with the sites to determine the best reimbursement structure for integrated service delivery (See attachment 2 for letter of agreement). The eligibility requirements for participation (2+ chronic conditions) will allow sites to bill with a new CMS code (CPT 99490) specifically a monthly 20-minute chronic care consultation.

Agreements will be established with affiliated hospitals and rehabilitation services to refer patients to the transformed sites. Agreements are already established with the AAA/IL in the region served to refer clients who need services to IPC-GPC-CBS. A trained employee at their Aging and Disability Resource Market will ensure that clients who call for assistance will be evaluated using a biopsychosocial checklist and referred to IPC-GPC-CBS if a need is determined.

In order to address the well-being of the interdisciplinary clinical and community teams at the transformed sites, clinical SW/MFT students in their 2nd year of MSSW studies, will engage teams in self-care and team care, or what has been referred to as the 4th aim. The goal will be to create enhanced practice environments with well-functioning clinical and community teams whose jobs provide joy and satisfaction[52]. Healthcare should be a symbiotic relationship between those that provide care and those that receive care[53]. In order to accomplish the 4th aim, intentional and deliberate action needs to be taken to assure the care of the healthcare workforce. Shifting to higher levels of clinical support will result in high-functioning teams, improved professional satisfaction and greater joy in practice[54].

Goal 3: Provide training and community engagement resources to create ADRD–friendly communities in the geographic area served.

The major objectives for goal 3 are the following: 1) By the end of year 3, the ADRD project will have transformed effective service delivery in 6 counties to PWD, their caregivers and families through the establishment of Dementia Friendly Communities; 2) By the end of year 3, a train the trainer model has been developed where community members train others in the PWD/Caregiver intervention; and 3) By the end of year 3, the PWD/Caregiver intervention will be delivered to patients in the 6 counties via the IPC-GPC-CBS and other referrals, where 70% of caregivers will show satisfaction with the intervention, and improved health and mental health outcomes and reduced cost of care. The specific activities that will make these objectives a reality are shown in the **Work Plan**.

Goal 1 ensures that ADRD content is infused in ICGE to afford timely diagnosis of ADRD and referral to supportive services. A Community-Based ADRD Subcoalition (ADRD-SC) to the Geriatric Community Based Service Coalition will bring together community leaders from business, PCPs, health care, social services, faith-based organizations, previous caregivers of PWD, adult day care providers and contract caregiver services to do an environmental assessment of ADRD services and gaps. The ADRC Subcoalition will disseminate community education about ADRD, assist in development of community services for PWD and their caregivers/families, and contribute to increased referrals to PCPs for accurate ADRD diagnosis. A community education curriculum will be developed to create a unified message for all partners, using ADRD educational material from OVAR-GEC.

The second focus of this ADRD specific goal will develop a train-the-trainer model, using a methodology similar to the CDSMP, where community members train others in the PWD/Caregiver intervention. The intervention will include manuals, workbooks and online videos from Hall and Buckwalter's PLST Intervention (as implemented by Robinson and colleagues[55]). The support intervention will incorporate three components: 1) *behavior management education* as the disease progresses based upon the PLST caregiver intervention[55]; 2) *family systems education* based upon the New York University Caregiver Intervention to provide education and support for recognizing needs of PWD, caregivers and families through family therapy[56]; and 3) *social skills training* provided for caregivers to better access community resources and ask for help[57]. PWD and caregivers will be referred from the participating transformed sites, the community health teams and members of the ADRD-SC. Caregivers will be trained

in the use of the ePHR to track their own health and the health of the person with PWD.

Innovation

The proposed project is **innovative** for a variety of reasons. First, ICGE offers a creative, novel solution to the challenges of meeting the mandates for IPE. The curriculum is unique in that it is centrally driven by a core project team housed at the interdisciplinary ISHOA, it is mandatory for most learners, it requires participation in interdisciplinary face-to-face learning experiences, and is designed to be efficient and sustainable. Also, the curriculum content is a unique blend between seven disciplines, namely geriatric medicine, pharmacology, nursing, dentistry, SW/ MFT, chaplaincy, and the law.

The IPC-GPC-CBS transformation of primary care sites is innovative in the way it is designed to bridge the gap between primary care delivery systems and community-based services. Its use of COs, health coaches, peer mentors, ePHRs and legal guidance provide a unique way to provide excellent patient-centered integrated and efficient coordinated health care to older adults, their families and caregivers.

IPC-GPC-CBS focuses not only on improving health outcomes for older adults based on the Institute for Healthcare Improvement Triple Aim of improved patient experience, improved clinical outcomes and reduced cost[58], but an added fourth aim of improved work life for those delivering care[53]. A method of transformation will be used that shifts the burden of providing care from a physician-centric model of work distribution and responsibility to a shared-care model, that includes a high level of clinical and community support staff per physician and continuous forums for communication that will result in high-functioning teams, improved interpersonal job satisfaction and great joy in practice[59].

The Alzheimer intervention is innovative in its focus on creating Alzheimer friendly communities. Through the community assessment that will be done by the ADRD-SC, and with involvement from PWD and caregivers, the stigma associated with ADRD will be challenged, community activities will become accessible for PWD, their potential will be acknowledged, appropriate diagnosis and post-diagnostic support will be facilitated, they will be empowered to participate in community life, independence will be fostered, and community environments will become easier to navigate[60].

Evidence

The Mandate for IPE: The need to educate health professional students collaboratively was recognized many years ago and has been cited as a way to improve patient outcomes, particularly those related to quality and safety[61, 62]. Models of care foundational to recent healthcare reform mandate team-based, patient-centered, collaborative care. Numerous studies of healthcare education conducted by the Institute of Medicine have concluded that IPE education is essential if future practitioners are to be prepared to work effectively in present healthcare environment[63, 64]. In 2009, six healthcare educational associations partnered to form the IPE Collaborative (IPEC) and jointly established Core Competencies for Interprofessional Collaborative Practice to guide IPE efforts[41]. Additionally, the World Health Organization's report, Framework for Action on IPE and Collaborative Practice, claimed that IPE and practice was necessary across the globe and offered strategies for implementing IPE[65]. An analysis of accreditation documents for 10 health professions identified 60 statements significant to IPE[66].

The Geriatric Care and IPE Connection: Interdisciplinary teams have long been integral to geriatric care. According to the American Geriatrics Society a team workforce consisting of physicians and other healthcare professionals trained in the care of older persons is necessary to achieve the goals of geriatric medicine. One of the successful geriatric training models for advanced practice nurses, medical residents, and SWers that were able to overcome the barriers of IPE is the Geriatric Interdisciplinary Team Training (GITT), funded by the John A. Hartford Foundation. GITT addresses the need for teams in the care of older adults within managed care and health care cost containment. GITT has served to help understand attitudes towards teams in the care of older adults, how teams function, and how teams should be trained in the changing health care environment, where length of stay of older adult patients is dramatically different from the earlier team training projects. Geriatric interdisciplinary training and practice typically

involves medicine, nursing, and SW, and sometimes pharmacy, nutrition, and rehabilitative therapies. Dentistry has rarely been included in academic interdisciplinary geriatric team experiences, despite the importance of oral care. Mezey and colleagues[38] propose that the inclusion of dental programs in the training of geriatric healthcare professionals are vital to ensure effective care delivery.

Evidence supporting problem-based learning: Problem based learning has been promoted in medical education for decades as the most effective way of educating future physicians[67]. Problem-based learning has two fundamental assertions: 1) learning through problem-solving is more effective for creating a body of knowledge usable in the future than traditional memory-based learning; and 2) health team skills most important for patients are problem-solving skills, not memory skills[67]. The following problem-based learning characteristics were shown to be effective in iCOPE and will be used again in ICGE: 1) Students learn from complex, real world situations in which there is no correct answer (3 online case-based modules and 4 video-case scenarios built around team involvement with geriatric patients, clinical experience and critical reflection exercises); 2) Students collaborate in teams to confront problems, identify gaps in care, and develop team-based solutions (ICME); 3) Students gain new information through self-directed learning (clinical exposure, critical reflection written assignment, completion of on-line modules); 4) Faculty act as facilitators rather than instructors (ICME and reflective exercises); and 5) Problems presented lead to the development of clinical problem-solving abilities (ICME, modules).

Evidence supporting the success of the iCOPE model used to develop ICGE: Interdisciplinary experiences for students face barriers such as difficulties in scheduling courses and clinical rotations, lack of faculty with interdisciplinary skills, and the perception of faculty that interdisciplinary courses and activities carry less weight than other activities in promotion and tenure decision[38]. The iCOPE model was able to overcome these barriers, bringing 4 disciplines together in a unique way[34]. A pre-post mixed method design was used to evaluate the impact of the iCOPE curriculum on a total of 527 students from nursing, medicine, SW and chaplaincy over five semesters. Pre/post measures evaluated palliative care-specific educational needs and skills, self-efficacy perceptions related to learning collaboratively in interprofessional teams, and knowledge related to interdisciplinary palliative care. All disciplines demonstrated a significant improvement on all these measures. Their experience resulted in an improved understanding of and respect for other disciplines, enhanced communication skills when talking with palliative patients, and a recognition of the importance of patient/family-centered interdisciplinary care[68].

The Mandate for Geriatric Integration into Primary Care: For seniors with multiple chronic conditions and variable social, emotional, or physical support, creating an evidence-based patient-specific plan and facilitating self-management can be difficult in the traditional primary care setting where primary care physicians have limited time, tools and training in education, coaching, motivating, and problem solving with patients. Various research studies showed that to serve older adults effectively within the primary care setting, an interdisciplinary approach to care is needed, together with the integration of novel technology approaches to care coordination, and aligned financial incentives for these integrated services[69].

The Mandate for Primary Care Practices Integrated with Community Health Teams: The Vermont's Blueprint for Health is a state-led initiative with the following characteristics: 1) advanced PCP practices recognized as patient centered medical homes; 2) multi-disciplinary core community health teams and additional specialized care coordinators; 3) evidence-based self-management programs; 4) multi-insurer payment reforms that fund medical home transformation and community health teams; 5) implementation of health information technology to support health information exchange; and 6) multi-faceted evaluation systems to determine impacts of health care reform[49]. This model currently serves 514,385 patients in Vermont. The first statewide evaluation of the model showed a significant reduction in annual expenditures per capita for traditional healthcare; improved utilization, including a reduction in inpatient hospitalizations and related expenditures; an increased use of non-medical support services by Medicaid beneficiaries; a shift towards less specialty care with higher utilization of primary care services; and a trend toward higher

rates of recommended assessments reflective of preventative care. Objective assessment suggested early improvements in clinical quality and use, and better control of chronic conditions[49].

Coleman's care transition intervention comprises 4 conceptual pillars, namely medication self-management, a patient-centered record, primary care and specialist follow-up and knowledge of "red flags" indicative of a worsening condition[50]. In a randomized controlled trial 750 patients were assigned to the intervention or usual care. Intervention patients received guidance from a "transition coach". Patients exposed to the Coleman intervention had lower rehospitalization rates at 30, 90 and 180 days. Also, the mean hospital costs were lower for intervention patients[70]. Additional studies showed intervention patients reporting high levels of confidence in obtaining essential information for managing their condition, communicating with members of the healthcare team, and understanding their medication regimen[50].

The PACE program is an innovative, interdisciplinary team-based model of health care delivery for frail seniors that provides a full spectrum of health care services to enable its enrollees to live independently in the community. The teams meet regularly to evaluate each enrollee's needs and design a care plan. Outcomes data of 3,042 older adults served by 23 PACE programs show that the functional status of enrollees improve, as well as the reduction in the use of institutional care. The broad scope of care coordination among a diverse group of disciplines has been attributed to these outcomes[51].

The Mandate for family systems level MI: Individual level MI is usually employed in health promotion. However, the focus of IPC-GPC-CBS is systematically addressing all the systems that older adults 65+ and their families/caregivers are involved in. This approach has been used effectively in addictions and substance abuse interventions[71].

The Mandate for the Fourth Aim: The pressures to achieve patient-centeredness as anticipated by the Triple Aim could cause burnout for the healthcare workforce. It has been found that a dissatisfied healthcare workforce is associated with lower patient satisfaction[72]. Healthcare workforce burnout could lead to overuse of resources that could increase the cost of healthcare[73]. More EMR functions intended to promote the Triple Aim are associated with more burnout and intent to leave the practice[74]. In order to achieve the Triple Aim it is important to have a satisfied and fully functioning workforce to improve their chance of success. Without addressing the work life of the healthcare team it has been found that Triple Aim measures are likely to worsen[75].

The Mandate for non-pharmacological interventions for ADRD: A growing body of literature demonstrates that non-pharmacologic interventions are effective in improving the quality of life for PWD and their caregivers[32]. The New York University Caregiver Intervention found a delay in residential care placement by an estimated median of 557 days before the PWD was placed in a residential facility. Intervention group direct care costs were reduced by an average of $996 million[56]. The REACH II trials I and II found that caregiver stress and burden were not results of a single problem but rather resulted from multiple problems of varying severity. REACH II created an individualized intervention following an initial risk appraisal. Results from the clinical trial indicated significantly improved quality of life and lower depression in the treatment group across groups of African Americans, Caucasians and Hispanic samples[76]. Many states (Minnesota, North Dakota, Alabama etc.) have translated evidence-based REACH caregiver support interventions into their usual service delivery systems[77-79].

(b) Work Plan

The work plan for KRUGIEP is shown in the tables below. The logic model summarizing the work plan can be seen in Attachment 4. The evaluation activities are not addressed in the work plan and will be detailed under Impact.

Goal 1: Transform clinical training environments with the development and delivery of an Interdisciplinary Curriculum for Geriatric Education (ICGE).

Measurable Outcome(s): 1) 90% of learners will show at least a mean of 4/5 on all satisfaction survey items for all 4 components of ICGE; 2) 90% of learners will score at least 80% on an Interdisciplinary

Geriatric Care Knowledge Test (IGCKT); 3) 90% of learners will score at least a mean of 8/10 on the Self-Efficacy for Interprofessional Experiential Learning Scale (SEIEL); 4) 90% of learners will score at least a mean of 4/5 on the Professional Geriatric Care Skill Survey (PGCS).

Key Tasks	Person Responsible	Start/End Date
Objective 1: By the end of year 3, the interdisciplinary project team will have transformed the clinical training environment for an interdisciplinary group of students/residents/ fellows at UofL (medicine, nursing, SW, dentistry, pharmacy, law) with an ICGE where content area, curricular learning objectives and student learning outcomes are aligned and focused in teaching general principles of interdisciplinary geriatric care using problem based learning.		
Develop 3 geriatric cases to form the basis of the online case-based didactics (one case ADRD focused)	Faul, Head & Core Faculty (CF)	7/15-9/15
Adapt the iCOPE online didactic module on interprofessional teams and practice to fit ICGE context.	Head, Schapmire	7/15-9/15
Create a family systems motivational interviewing (MI) online didactic module.	Faul, D'Ambrosio	7/15-9/15
Create 4 video-vignettes of 4 geriatric cases for interdisciplinary case management experience (one case ADRD focused)	Faul, Head & CF	7/15-9/15
Send online case-based didactics and case studies for video vignettes to 2 geriatric content experts for review	Faul, Jones, Head, content experts	9/15-10/15
Faculty retreat with context experts to review and refine didactics and video vignette case studies	Faul, Jones, Head, content experts	10/15
Produce video-vignettes	Head, Jones, some faculty, standardized patients, UofL IT Contract Tech support	11/15-12/15
Secure rotations and practicum placements for medical, SW, and nursing students at the participating primary care sites. (*in collaboration with Dunn, Faul, Nash, Hupp & Hill and in-kind support from participating school deans)	Jones*	7/15-12/15
Secure public service arrangements for law students as part of community health teams.	Program manager, public service, Law School (in kind)	7/15-12/15
Develop a system for the pharmacy faculty (y1) and pharmacy fellow (y2) to serve all sites remotely with drug therapy reviews and medication management	Antimisiaris	7/15-12/15
Recruit pharmacy fellow	Antimisiaris	7/15-5/16
Secure pharmacy student placements at UofL Geriatrics to work with pharmacy fellow	Antimisiaris	1/16-5/16
Work with all program directors and deans (medicine, nursing, SW/MFT, dentistry) on placing curriculum into existing coursework.	Faul, Jones, Head	7/15-12/15
Develop facilitator guides, train core faculty on how to act as interdisciplinary facilitators for B, C and D of ICGE	Faul, Head, Schapmire	12/15
Develop a database that can house all learner data	Faul, Yankeelov, Linzy	7/15-12/15

Key Tasks	Person Responsible	Start/End Date
Objective 2: By the end of year 3, the interdisciplinary project faculty will have created a professional CE environment in KY where ICGE (component A: case based didactics) form part of professional continuing education hours for medicine, nursing, / MFT, dentistry and pharmacy.		
Secure CME hours for medical professionals.	Helm, Dunn	7/15-12/15
Secure CE hours for nursing professionals.	Helm, Head, Nash	7/15-12/15
Secure CE hours for and MFT professionals.	Helm, Faul, D'Ambrosio,	7/15-12/15
Secure CE hours for dentistry professionals.	Helm, Hill, Hupp	7/15-12/15
Secure CE hours for pharmacy professionals.	Helm, Antimisiaris	7/15-12/15
Market CE hours to medical, nursing, SW/ MFT, dentistry and pharmacy professionals.	Helm	1/16-6/18
Objective 3: By the end of year 3, the ICGE will be delivered to interdisciplinary students, professionals, and community health teams where 90% of the learners will show satisfaction with learning, and increased knowledge, skill and self-efficacy in interdisciplinary geriatric care.		
Sign up learners from all disciplines in ICGE Blackboard site.	Jones	1/16-6/18
Arrange for all learners to complete the 3 online case-based didactic modules as well as IPE module.	Jones	1/16-6/18
Deliver simulated ICME to students and CHT.	Jones, CF on rotation	1/16-6/18
Arrange for shadowing of health care site with reflective writing exercises (medicine, SW/MFT, nursing).	Jones, CF on rotation	1/16-6/18
Arrange for rural primary care site infusion by placing students (medical, nursing, SW/MFT) at the transformed primary care sites and in the community health teams (law).	Jones in collaboration with program directors and associate deans	1/16-6/18
Provide interdisciplinary team supervision to the primary care sites once a semester.	Faul, Wright, Furman, Nash, D'Ambrosio, Antimisiaris	1/16-6/18
Provide interdisciplinary team supervision to the community health teams once a semester.	Faul, D'Ambrosio, Yankeelov	1/16-6/18
Supervise pharmacy fellow in serving all sites remotely with drug therapy reviews and medication management.	Antimisiaris, Schapmire	6/16-6/18
Supervise pharmacy students to provide remote drug therapy reviews and medication management strategies.	Pharmacy fellow, Schapmire	6/16-6/18
Supervise the delivery of ICME (in vivo) and reflections (in vivo) with each older adult patient served at the primary care sites.	CF on rotation schedule, Jones	1/16-6/18
Supervise the review of active cases every 3mths with interdisciplinary team and reflection on learning.	CF on rotation schedule, Jones	1/16-6/18

Goal 2: Transform primary care sites to deliver Integrated Patient-Centered Geriatric Primary Care and Community Based Services (IPC-GPC-CBS) to older adults 65+ with 2 or more chronic conditions.

Measurable Outcome(s): 1) 90% of older adults served by the transformed primary sites will show at least a mean of 4 out of 5 on all the Patient Assessment of Chronic Illness Care (PACIC) subscales; 2) 70% of older adults served will reach the optimal targets in blood pressure, body mass index, blood glucose and/or cholesterol levels; 3) 70% of older adults served will show a 10% improvement in confidence to manage

their health, as measured by the Self-Efficacy for Managing Chronic Disease scale; 4) 70% of older adults served will show 10% improvements in their health behaviors, specifically less smoking, less alcohol consumption, better diet, and/or more exercise; 5) 70% of older adults served will show a 10% improvement in mental health as measured by the GDS-15; 6) 70% of older adults served will show a decrease in social isolation as measured by the UCLA loneliness scale; 7) the rate of emergency department (ER) visits for older adults served will be reduced by 30%; 8) the rate of 30 day readmission rates to hospitals of patients served by the transformed sites will be reduced by 30%; 9) All team members (clinical and community health teams) will show a 10% improvement in satisfaction with their collaborative practice as measured by the Collaborative Practice Assessment Tool; 10) all transformed sites will score a 9 at the end of year 3 on the Assessment of Chronic Illness Care (ACIC).

Key Tasks	Person Responsible	Start/End Date
Objective 1: By the end of year 3, at least 50% older adults 65+ with 2 or more chronic conditions and their caregivers/ families at each transformed site will have received IPC-GPC-CBS and show improved patient experience, improved clinical outcomes and reduced cost of care.		
Secure the primary care team at the transformed sites (medicine, nurse practitioner, SW/MFT) who will provide services and/or supervise students.	Wright, Faul, D'Ambrosio, Dunn, Nash	7/15-9/15
Appoint community organizers (CO's).	Faul, D'Ambrosio	7/15-8/15
Secure peer mentors for each county.	COs	7/15-12/15
Create a geriatric community-based service coalition within each county with representation from community organizers, AAAIL staff, service organizations, frontline workers, ministers, law students, peer mentors and older adults with their caregivers and families.	COs	7/15-9/15
Train sites in a reimbursement structure.	KMA, Jones	9/15-12/15
Develop an electronic Personal Health Record system (ePHR).	Faul, Wright, Hill, Hupp, Furman, Nash, Antimisiaris	9/15-12/15
Develop disease specific modules for older adults (both online and in person).	Wright, Furman, Antimisiaris, Hill, Hupp, Nash	7/15-12/15
Develop a referral system to transformed sites of older adults 65+ with 2 or more chronic conditions.	Faul, D'Ambrosio	7/15
Develop a clinical CMP for each older adult served.	Primary care team (PCT) and students/residents	1/16-6/18
Deliver clinical services based on the clinical CMP.	PCT and students/residents	1/16-6/18
Coordinate the need for any remote supervision sessions between rural sites and the core faculty team	Schapmire	1/16-6/18
Provide remote drug therapy reviews and medication management strategies.	Antimisiaris, Schapmire	1/16-5/16
Perform 3-month clinical case management reviews for each older adult served.	CF, PCT and students /residents	1/16-6/18
Develop a community CMP for each older adult served.	CHT (CHT) and students	1/16-6/18
Train older adults/caregivers in setting up and maintaining ePHR.	CHT and students	1/16-6/18
Deliver disease-specific education and training to older adults/caregivers/families (both online and in person).	CF rotation; CHT	1/16-6/18
Deliver Stanford Self-Management Education Programs.	CHT; students	1/16-6/18
Deliver services based on the community CMP.	CHT; students	1/16-6/18

Key Tasks	Person Responsible	Start/End Date
Perform 3-month community case management reviews for each older adult served.	CHT; students	1/16-6/18
Objective 2: By the end of year 3, all members of the clinical care team as well as the CHT will be engaged in team self care that promotes improved work life for those delivery care, and will show an improved level of satisfaction with service delivery.		
Develop self-care workshops to be held every three months.	Faul, D'Ambrosio, SW/MFT students	1/16-6/18
Facilitate monthly team meeting at the various sites.	Faul, D'Ambrosio, SW/MFT students	1/16-6/18

Goal 3: Provide training and community engagement resources to create ADRD-friendly communities in the geographic area served.

Measurable Outcome(s): 1) there will be an overall increase of 10% in services provided to and for PWD and their caregivers in the 6 counties as a result of becoming Dementia Friendly Communities; 2) participants in the community education program will show a 20% improvement in their attitudes towards PWD; 3) Outcomes 2-8 of Goal 2 (Triple Aim)

Key Tasks	Person Responsible	Start/End Date
Objective 1: By the end of year 3, the ADRD project will have transformed effective service delivery in the 6 counties to PWD/caregivers/families through the establishment of Dementia Friendly Communities.		
Recruit and engage community leaders in health, medical, social services, dementia advocacy, faith-based organizations & business leaders to serve on ADRD-SC.	Shiels, Robinson, AAA/IL, Alzheimer's Assn (AA)	7/15-3/18
Sustain Advisory groups through life of grant, through annual guided interviews with Advisory Group members.	Shiels, Robinson	5/16-5/18
Undertake a comprehensive needs assessment of support services, medical expertise, community-based programs available through non-profit, for profit and faith-based organizations, and a directory of federal and state-funded programs available to PWD and their caregivers.	Robinson, Shiels, Jester	7/15-5/18
Include an environmental assessment of ease of access to services, leisure and commercial activities.	Robinson, Shiels, Jester, ADRD-SC	7/15-12/15
Complete regional environmental assessments of services provided to and for PWD and their caregivers, identify barriers to PWD participation in leisure and commercial activities in the communities and propose community-based solutions.	Robinson, Shiels, Jester, ADRD-SC	9/15-1/18
Undertake focus group of consumers and their families to explore existing resources, perceived needs as well as unmet needs (utilize AAA/IL database to invite consumers with present or past caregiving experiences)	Robinson, Shiels, SW students, CHT	1/16-2/16
Synthesize result of ADRD-SC input, needs assessment, focus groups and consumer groups to inform development of ADRD Friendly Community design and content of the PWD/caregiver(CG) centered intervention.	Robinson, Shiels, AA	2/16-5/16
Develop a referral system for needed community resources of support services such as for support groups, adult daycare, family therapy, respite etc.	Robinson, Shiels, AAA/IL, AA	8/15-5/16
Develop and implement a community education program across the 6 counties to community-based, social service, health and medical, business and faith-based organizations.	Robinson, Shiels, ADRD faculty; ADRD-SC	7/15-3/18

Key Tasks	Person Responsible	Start/End Date
Create an ADRD-SC speakers' bureau with targeted community audiences to deliver ADRD community education.	ADRD-SC, AAA/IL, AA	1/16-3/18
Objective 2: By the end of year 3, a train the trainer model has been developed where community members train others in the PWD/CG dyad-centered intervention.		
Develop and pilot the Community Trainer Program with ADRD and volunteer interdisciplinary learners.	Robinson, Shiels, AA	1/16-5/16
After piloting the program, make recommended enhancements and implement the train-the-trainer program.	Robinsons, Shiels, AA	5/16-6/18
Supervise community-based trainers to train other community service providers in PWD/CG dyad-centered intervention.	Robinsons, Shiels, AA	5/16-6/18
Train the learners at the transformed sites and in community health teams in the PWD/CG dyad-centered intervention.	Robinsons, Shiels, AA	6/16-6/18
Objective 3: By the end of Year 3, the PWD/CG dyad-centered intervention will be delivered to patients living in the 6 counties, where 70% of caregivers will show satisfaction with the intervention, and improved health and mental health outcomes and reduced cost of care.		
Deliver PWD/CG dyad-centered interventions with the focus on behavior management education, family systems education, and social skills training.	Robinson, AAA/IL staff, CHT	6/16-6/16

(c) Resolution of Challenges

Goal 1 challenges include: multiple discipline specific content into case based didactics; getting students to travel to rural sites; getting Spanish speaking students for Shelby County; letting go of "discipline specific" roles in acting as facilitators; approval for CME/CE hours for online education; coordination of discipline schedules, rotations and case reviews. **The solutions are**: core faculty (Faul, Head, Schapmire) prepared the iCOPE curriculum and will provide interdisciplinary guidance; geriatric content experts will review case based didactics; online SW students living in the remote counties will be targeted for practicums; a travel stipend will be paid to SW/nursing students; practicum offices will locate Spanish-speaking students; annual tuition scholarships are available to Spanish speaking students; Jones, Faul & Head are skilled in coordination ICME and rotations, due to iCOPE; Dunn's system for placing students in AHEC rotations will be used.

Goal 2 challenges include: training COs and peer mentors; coalition creation requiring coordination, structure and buy-in; CPT training is difficult; use of ePHRs by PC staff and MDs may be resisted; patient referral may be difficult; creating clinical/community care plans require institutional mind shift; team reviews for case management reviews may be time consuming; team scheduling for clinical team and community teams to work together may be difficult; older adults/families may not understand/use ePHR; they may be ambivalent to training, may not have time, transportation or computer-access. The **solutions are:** D'Ambrosio & AAAILs emulating the process used in CDC grant will train COs, peer mentors; COs will visit elected officials and community groups to garner support; KMA will provide CPT training; during the planning phase, both teams (clinical and community) will have team building meetings; uniform template will be developed by the PC Practice Site DD (Wright); all professionals will trained in ICGE; site supervision by clinical team will promote a change in mindset; team reviews will be done on a rotation schedule not including all core faculty all the time; health coaches will work closely with COs and peer mentors to ensure close working relationships between teams; COs, peer mentors as well as health coach will train and monitor older adults and families in use of ePHR; COs, peer mentors and health coach will be trained in MI; training will take place at convenient times , transportation will be provided and online sessions will be promoted at local libraries.

Goal 3 challenges include: engaging community to serve on ADRC-SC; organizing needs assessment/

focus groups and reluctance of communities to participate; delivering educational and community training programs and having an advisory speakers group across counties/sectors logistically will be challenging; supervising community-based trainers take time. The **solutions are:** lessons learned from CDC grant on community organizing and completing needs assessments and focus groups will be used; lessons learned from iCope will be used to implement county/sector education programs and deliver training; coordination of advisory speakers and Community Trainer Program will be coordinated by the Program Manager and AAA/IL case manager; faculty skilled at supervision will direct the community-based training effort.

Impact

(a) Evaluation and Technical Support Capacity

The overall goals, objectives and measurable outcomes center around 2 themes, namely 1) an interdisciplinary training component (ICGE) and 2) primary care delivery system transformation (IPC-GPC-CBS). The measurable outcomes for ICGE are based on Kirkpatrick's training evaluation model (Figure 2)[37]. The measurable outcomes for the service component are embedded within the final result level of Kirkpatrick's training evaluation model and are based on the Tripe Aim[58], the Fourth Aim focused on improved work life for those delivering care[53] and the Healthy People 2020 indicators.

In Kirkpatrick's model, level 1 assesses participant's reactions to the learning event, level 2 assesses participants' acquired knowledge and skills and level 3 assesses application of the acquired knowledge and skill. Each of the activities noted in the Logic Model (A-D) will be evaluated at level 1. Level 2 and 3 evaluations will occur during the simulated case management experiences and the rural practice infusion/rotation/internship experiences. Level 4 measures the degree to which target outcomes occur, specifically the degree of transformation of the selected primary care sites into integrated geriatric patient centered delivery systems, the degree to which the work life of those delivering the care has improved, as well as, patient satisfaction outcomes, improved patient clinical outcomes and reduced cost of care.

Several databases will house the training program specifics, learner specific data, transformed site, and patient and caregiver outcomes. These databases will be developed in the first 6 months using Microsoft SQL Server with user interface in Sharepoint. These will be password protected and secure web-based databases that can accommodate multi-users from remote locations. The databases will be built to be as integrated to the extent possible and automated reports will be created based on parameters required on HRSA data forms specific to training and learner characteristics, as well as, the pre-established expected outcomes for each objective of each goal of the grant. Building reports in the first 6 months will allow for timely access to reports as needed. Rapid access to reports will allow for more efficient monitoring, earlier identification of challenges and earlier response to challenges. The Plan-Do-Study-Act (PDSA) Model[80] has guided the design of the process and outcome evaluations, including the timing of the data collection and the frequency of reporting to the project team and to HRSA for review and modification consideration. The data will also be able to be exported to SPSS to explore time, group and interaction effects.

Potential obstacles to the designed evaluation include adequate staffing and database platform design constraints issues, as well as, limited responsiveness on the measures by the learners or patients. The PD (Faul) and the Evaluation DD (Yankeelov) have competencies in working with database designers who have developed large integrated databases and the Technology Expert (Linzy) has designed large integrated databases. Strategies such as the use of web-based surveys and ticklers, repeat mailings for hard copy surveys and the use of telephone administered surveys, and embedding surveys into required actions such as learner registration will increase responsiveness. Real time reporting mechanisms will allow for closer monitoring of the required data collection.

Given the care taken on the onset to establish a database system to generate reports and the emphasis on gaining the approval from IRB within the first 6 months of the project, the project results will be able to be disseminated via presentations at state, regional, national and international conferences. In addition to

the evaluation results, the online module and simulated and in vivo ICME experiences with reflection exercises will be portable and transferrable to other trainings.

Tables 13 provides the type of evaluation, expected measurable outcomes, variables to be measured, key processes and reporting mechanism. The evaluation plan requires the following inputs: PD (Faul), Evaluation DD (Yankeelov), Interdisciplinary Training Coordinator (Jones), Evaluation Program Manager (Martin), and the Technology Expert (Linzy). Attachment 1 includes the job descriptions of the aforementioned key personnel. Yankeelov will work with Linzy to build web based forms, all databases and all automated reports necessary for HRSA training and learner specific reports, and outcome reports per objective. Yankeelov, Faul and core faculty will design satisfaction and knowledge and skill based assessments. Martin will assist Yankeelov with the IRB application, facilitate the informed consent process for all learners, will be responsible for entering the learner data on the training events, monitoring learners' progression and completion through the educational components, and following up with delayed learner, team member and patient responders. She will assist with recruiting, implementing and analyzing the focus group reports and other outcome reports, and assist with report writing and submission of reports to HRSA.

Table 13: Evaluation Components

Expected outcome	Variables to be measured	Key Process; Reporting Mechanism
Goal 1: Transform clinical training environments		
Type of Evaluation: Process		
Target: *Development of ICGE*		
Design of A,B,C, & D educational components for students & professionals	Work Plan Milestone Review	Monitored weekly with Education Division, Monitored monthly with Executive Council (EC) Meeting
Target: Delivery of ICGE		
HRSA required performance measures including training and learner specific characteristics	*Training variables*: number of hours per training, modalities offered; time to develop the training materials. *Learner variables:* age, race, sex, training site, discipline, employment & disadvantaged background, veteran status, & whether they are from a residential rural area background, number of training hours, ABCD education component completion status, number of contact hours, patient encounters	Training database will be maintained. Learning variables gathered at web registration; Completion status captured by sign in methods at the conclusion of each educational component; Number of contact hours & patient encounters for educational component D completers will be extracted from interdisciplinary clinical record. Monthly reports to EC; Semi-annually reports to HRSA
Kirkpatrick's Levels 1 (Reaction), 2 (Knowledge & Skill) & 3 (Application of Knowledge & Skill)		
Target: Satisfied, informed, skilled, confident student & professional learners		
90% of learners will show at least a mean of 4 out of 5 on satisfaction survey items for A,B,C & D	Learner satisfaction (including, but not limited to assessment of method of training, content, time spent, thoroughness, applicability)	Gathered at end of each ABCD educational components via web survey. Monthly reports to EC noting % of total learners meeting expected outcome. Discipline and training specific reports will also provided.
90% of learners will score at least 80% on IGCKT	Faculty-developed Interdisciplinary Geriatric Care Knowledge Test (IGCKT)	Pretest embedded in web-based learner registration, Web-based posttests after educational component C & D. Quarterly reports to EC on the % of learners meeting expected outcomes by total
90% of learners will score at least a mean of	Self-Efficacy for Interprofessional Experiential Learning Scale (SEIEL)	

8 out of 10 on the SEIEL	[81](16 item, 3 subscales, total scale Cronbach's α= 0.96)	learners, as well as, by discipline and education component specific expected outcomes. Mean baseline and difference scores from pre to post will be measured for all, discipline and educational component specific categories
90% of learners will score at least a mean of 4 out of 5 on the PGCS	Faculty-developed Professional Geriatric Care Skill Survey (PGCS)	
Qualitative method	Learner Focus Group	Completed at semester end; Semi-annual reports to EC
Goal 2: Transform primary care sites to deliver (IPC-GPC-CBS) to older adults		
Kirkpatrick Level 4 (IHI Triple Aim: Patient Satisfaction, Patient Health Outcomes, Cost)		
Target: Transformed PC Sites: Patient Satisfaction		
90% of older adults served by the transformed primary care sites will show at least a mean of 4 out of 5 on all the PACIC subscales.	PACIC[82] (20 items, measure of chronic illness quality of care based on the Chronic Care Model. Alphas: .68 -.86: .94 total score.	PACIC will be collected by evaluation team pre ICME experience via the patient and/or caregiver preferred method (mail with up to 2 replacement surveys, phone-5 attempts at different times of day, web survey with ticklers) and repeated @ 6 months of service delivery.
Target: Transformed PC Sites: Patient Clinical Outcomes		
70% of older adults served will reach the optimal targets in blood pressure, body mass index, blood glucose and/or cholesterol levels.	**Physiological Assessment:* Blood pressure, BMI, A1C, cholesterol levels	All asterisked measures will be gathered by the health coach or clinical team members pre ICME experience & @ 6 months (after two case conferences). All asterisked measures will be extracted from the interdisciplinary clinical case file.
70% of older adults served show 10% improvements in confidence to manage their health	*Self-Efficacy for Managing Chronic Disease scale[83] (6 items, alpha =.91; used by Stanford Patient Education Research Center)	
70% of older adults served show 10% improvements in their health behaviors (smoking, consumption, diet, exercise).	**Behavioral Assessment:* Items from BRFSS)[7], BCC[98] & Summary of Diabetes Self-Care Activities[84]	
70% of older adults served show improved mental health status.	**Mental Health Assessment:* GDS-15[85]; UCLA loneliness scale[86](alphas:.89 to .96; 1 yr. test-retest: .73)	6 month report to EC on % of total older adults and % of total older adults per site meeting desired expected satisfaction & clinical outcomes.
Target: Transformed PC Sites: Cost		
Rate of emergency department visits for older adults served will be reduced by 30%.	# of ER visits based on dates in client file	Case File Review 12 mths prior to and after 1st ICME experience; 6 month report to EC on % of patients in integrated sites meeting expected outcomes. A site specific report will also be generated.
Type of Evaluation: Kirkpatrick Level 4 Degree to which work like of those delivering care has improved & Transformed Sites		
Target: Transformed PC Sites: 4th Aim, Self-Team Care		
The team members, students and PC site and community team members, will show a 10% improvement in	Collaborative Practice Assessment Tool (CPAT) [87] (57 item, 8 scales; assesses team member's satisfaction with the process involved in the collaborative practice; alphas:	Gathered annually from team members via web survey, Reported annually to EC for % total and by transformed site meeting expected outcomes

satisfaction with their collaborative practice on CPAT from yr 1 to yr 3	.76 - .89)	
Target: Transformed PC Sites		
By year 3, 90% of the selected sites will score a 9 (fully developed chronic illness care) on ACIC scale	Assessment of Chronic Illness Care (ACIC, 34 items practical tool to assist teams in improving their care of chronic illnesses, 6 subscales: scores range from 0 to 11, with 11 representing optimal care)	Gathered from team members @ start of project, end of years 1, 2, and 3 via web survey; Annual report to EC for % total and by transformed site meeting expected outcomes
Goal 3: ADRD–friendly communities		
Kirkpatrick's Level 2 (Learning) & 4 (Caregiver Satisfaction, Health Outcomes, Cost)		
Target: Improved service provision to PWD, caregiver & family		
There will be overall increase of 10% in services provided to and for PWD and their caregivers in the 6 counties as a result of becoming Dementia Friendly Comm.	Risk Assessment Measure[88] (16-item measure linked to caregiver risk and amenable to intervention) & Utilized Interventions	Gathered from caregiver at referral, annually. 6 month report to EC. An increase in services provided will serve as a proxy measure of the effectiveness of the ADRD friendly communities.
Target: Community education program		
Participants in the community education program will show a 20% improvement in their attitudes towards PWD.	Dementia Attitudes Scale[89] (20 items, knowledge & social comfort, alphas: 83-85)	Gathered pre/post intervention; quarterly reports to EC on % of total meeting expected outcomes and % by county meeting expected outcomes.
Target: Caregivers' satisfaction, clinical outcomes and cost		
Same as patient satisfaction, clinical outcome & cost measures as noted above.		Caregiver data collection and scheduled reports are the same as for the satisfaction, outcomes and cost.

(b) Project Sustainability

The grant team reinforced a belief in a systemic medical and community geriatric approach to rural health for those 65+ by embedding it into the integrated service delivery model at primary care delivery systems for all rural patients including ADRD patients. The team focused on securing project sustainability by building buy-in and support from key decision makers both in the medical and service community sectors from the first meeting of the grant team by focusing on the following key activities:

Dialoguing about belief in the integrated geriatric service delivery model. From the start of the project the team discussed the need for a different approach to rural healthcare for older adults 65+ that included larger systems in the service delivery model. A commitment to promote it in the community and with other medical/service providers for both general and ADRD patients are already established.

The belief in IPE at UofL and the support systems in place to sustain in. The development of the iCOPE curriculum laid the groundwork at UofL for the creation of a sustainable IPEal model where interdisciplinary content was built into existing required courses. Lessons learned were used to develop ICGE, but now included more disciplines, including family medicine, adult NPs, ers, pharmacy students, dentistry students and law students. The curriculum will be similar to iCOPE that is embedded within current curriculum structures and not a stand alone project. iCOPE proved to be sustainable after 5 years of implementation with all Deans and Directors supporting the model and providing faculty to coordinate the interdisciplinary events that form part of the curriculum. Previous core staff on the iCOPE initiative will also play a key role in KRUGIEP. Their experience will help with the development and delivery of ICGE in a much shorter time frame than with iCOPE. Making the didactic online modules part of CME/CE hours for medicine, nursing, SW, MFT, dentistry and pharmacy will help to sustain the delivery of ICGE.

An understanding of the importance to implement new learning within real life systems. Kent

School, a national leader in training evaluation promotes practicing new skills within real life systems and then evaluating system changes as part of the training effectiveness model. Within this context ICGE was developed to be different from iCOPE in its focus on measuring actual change in service delivery models.

A commitment to education of the healthcare workforce in rural areas. UofL Medical School's commitment to rural training began with the Trover Foundation/UofL Off Campus teaching center that started in 1998 in Madisonville, KY, and the GFMR Program established in 1997. Dr. Wright, a co-investigator and Practice Site DD is the Medical School's Associate Dean for Rural Health, working closely with Dr. Dunn who in her role as Senior Associate Dean for Statewide Initiatives and Outreach will play an important role in securing student/professional participation. The Kent School of SW, under the direction of Faul and Yankeelov started an online program in 2011 in MSSW education, with the primary purpose of educating a mental health workforce in the rural areas of KY and beyond. The program has grown exponentially and is currently ranked one of the 10 best online education programs in the US. These 2 schools will provide sustainability to a rural focus after grant funding has ended.

A commitment to support rural practices in finding a reimbursement structure that can support new transformed integrated service delivery systems like IPC-GPC-CBS. Small rural primary care practices are overwhelmed with delivering quality services with limited resources/support, therefore, the new Current Procedural Technology (CPT) coding for chronic care management and a shared reimbursement structure through the physician's offices will be taught by KMA and implemented by the practices. KMA believes that after implementing IPC-GPC-CBS for three years, it will be appropriate to approach CMS for new billing codes that can also support the clinical and community health team model. Furthermore, KY in late 2014 received a $2 million State Innovation Model Design grant from CMS and Medicaid Innovation to support the creation of new payment and service delivery models in the context of larger health system transformation. Faul & D'Ambrosio are part of the stakeholder group developing a State Health System Innovation Plan.

A commitment to change communities to ADRD friendly communities. The AA, in collaboration with ADRD faculty worked to develop ADRD friendly communities in Louisville. However, they weren't able to extend this work to rural communities, where primary care practices will be empowered by better education to diagnose ADRD in a timely fashion. Through the establishment of ICGE and the community ADRD-SCs they will be able to expand their work. Kent core faculty have shown the value of the creation of community coalitions to support development of disease friendly rural communities and have sustained these coalitions through community buy-in (CDC grant). The same is anticipated with the ADRD initiative.

Organizational Information

As one of the institutions with the fastest growth in NIH funding in recent years, the research intensive ***University of Louisville*** (UofL) leads KY in metropolitan related scholarship and innovation. Founded in 1798, UofL has been actively involved in research for the past 50 years and was restructured 18 years ago to incentivize and reward research and extramural funding. In the past 13 years, UofL has increased NIH funding seven fold, receiving over $121 million in grants. In particular, the ***Kent School of SW***, which was founded in 1936, is one of the highest producers of funding for research and demonstration projects in the University given the number of full time faculty in the School (30). Kent faculty bring in approximately $5 million per year with $15 million in our portfolio from NIH, ACF, SAMHSA, OJJDP, DHHS and the CDC to support research, training and community outreach projects in domestic violence, child welfare, health disparities, substance abuse, welfare reform and aging.

The Kent School of SW and its interdisciplinary team has proven its ability to fulfill the needs and requirements of the proposed project by its past work in the area of health care workforce development and the management of complex University/community partnerships. The UofL Medical School together with the Kent School, the School of Nursing and the UofL Hospital Chaplaincy Residence program already promote iCope as an interdisciplinary training program. Furthermore Kent School and the Medical School

already have sustainable rural physician and mental health-training programs in place for the healthcare workforce, through the Glasgow residency program and the Kent School MSSW online program.

UofL established the Institute for Sustainable Health and Optimal Aging (ISHOA) in 2014 to promote geriatric innovation, and interdisciplinary approaches to older adult care and interdisciplinary workforce development. Faul, PD, and ISHOA Director, has 30 years of experience in direct mental health services, higher education and research focused within the field of gerontology. She is a Hartford Faculty Scholar and has attracted millions in federal, state and foundation research dollars from the CDC, NCI, DHHS, KY Department of Aging and Independent Living, Passport Health Care, the New York Academy of Medicine and the KY Department of Mental Health and Mental Retardation. Faul has a variety of grant experiences directly related to the KRUGIEP project. Faul served as project director on 2 grants from the DHHS, HRSA. One focused on Innovative Mental Health Training, and the other on Community-Based Geriatric Interdisciplinary Training and Self-Management. She also served as the Co-PI on the CDC Vulnerable Population grant, focused on older adults with Type 2 Diabetes living in rural counties. She was also the Co-PI on the NIH funded Cancer Education Grants Program (R25) developing iCOPE.

ISHOAs commitment to older adults including ADRD is evidenced by its imbedded affiliation with the Department of Family and Geriatric Medicine (DFGM) and core faculty member Christian Davis Furman, who is also the Medical Director of ISHOA. Both DFGM and ISHOA provide specific ADRD biopsychosocial diagnosis and support for patients with ADRD and their families. Core faculty assigned to the ADRD training and educational activities of the grant are comprised of a geriatric medicine professor (Furman), a national leader in polypharmacy (Antimisiaris), Executive Director and Founder of the Caregivers Program of Research at the School of Nursing (Robinson), the Director of the OVAR/GEC (Shiels), and an Elder Law Professor (Maynard). This wealth of knowledge is poised to infuse evidenced based geriatric interventions and approaches to serve the growing ADRD population.

Further, this grant is an expansion of the existing rural outreach that UofL promotes in addition to its connection to the social service delivery sector. Faul, D'Ambrosio and Yankeelov have experience in the core tenets of KRUGIEP. They have all been involved in the CDC funded grant described under the **Purpose and Need** section. Over the 5-year period they have been instrumental in hiring community organizers and peer mentors, developed a peer mentor program and have conducted participatory research studies including Concept Mapping and Photo Voice, which are methods to engage communities. Further, they have worked closely with the Latino population in Shelby County on two grants. One grant addressed diabetes management for Latinos by addressing inadequate access to health and affordable food, establishing a food pantry and introducing healthy eating options that honor the cultural heritage; the other built on the first grant by implementing a medical home within the food pantry.

KIPDA AAAIL has been a strong partner of the Kent School over the past 10 years. As the designated AAAIL, KIPDA has a proven record in coordinating community-based efforts in addressing health-related disparities with older adults in rural counties. With their counterpart in Barren River, the two AAAILs will be our strong community partners serving on the CHT.

UofL and community partners have the resources to support a diverse health workforce. The schools of medicine, SW, nursing, dental, and law have the capacity to recruit and are committed to recruiting racial and ethnic diverse students for KRUGIEP. Additionally, the proposal has included specific ethnic minority recruiting flyers and brochures, tuition support to assist in the recruitment of Spanish-speaking students, and funds to support two project staff to receive intensive Spanish training to supervise the Spanish-speaking students. The project team is also comprised of two African Americans and one Pacific Islander.

The organizational chart and work plan indicate that the project is well staffed with an interdisciplinary team of professionals to adequately manage the grant activities. The EC comprised of the PD, the Program Manager, and the DDs will direct the day-to-day activities of the grant and have allotted a sufficient % of time to accomplish their tasks. The role of PD (20%,18%, 18%) fits within her core job duties of Executive

Director of ISHOA promoting new interdisciplinary education, research, and innovations in geriatric care. The CF under the leadership of the EC is made up of a large interdisciplinary team committed to making the project successful. The time allotted for the CF will be sufficient to modify their existing coursework to adapt to the activities of this grant. The long-established partnerships made with the AAA/ILs and community partners provide evidence for the level of support and commitment that is being shown to support this grant. Each of the partners have developed the structure and approach to the development of a rural geriatric workforce and the proposed systemic model.

Interdisciplinary/Interprofessional collaboration, education, and training

Throughout this narrative, the interdisciplinary collaboration has been explained in detail. The core foundation of ICGE is the interdisciplinary focus of the curriculum. iCOPE has taught the project team that education in silos does not work. In the original design of iCOPE, discipline specific knowledge modules were developed after which the disciplines were brought together for case management planning sessions. After a detailed review by content experts, we were advised that the discipline specific knowledge does not promote true interdisciplinary education. We were encouraged to change our curriculum to an interdisciplinary case-based focus where complex real life case scenarios help enforce the importance of true interdisciplinary case management planning and service delivery. This changed has proven to be highly successful, and the iCOPE curriculum is constantly being evaluated as one of the best curriculums to develop an interdisciplinary skill set for the future healthcare workforce.

In the planning all disciplines (including medicine) were brought together under the umbrella of ISHOA where the basic principles of iCOPE were explained and buy in secured for the creation of a similar gerontology focused curriculum. The service delivery effort was developed with buy in from all partners to transform primary care to an interdisciplinary clinical/community based service delivery system. The proposed IPC-GPC-CBS model has been designed as a patient-centered system where older adults, caregivers and families are empowered to work with an interdisciplinary team of professional service providers and community-based support systems. Through support from health coaches and peer mentors these systems are individualized to fit each patient's needs and each patient, caregiver and family receive specialized education to manage their own ePHR and chronic disease self-management plans.

Under *Response to Program Purpose, a) Methodology*, section on **Evidence,** the narrative provides evidence from the literature in support of interprofessional practice and how it will improve patient health outcomes. The intended outcomes of the proposed interdisciplinary collaboration in education and service delivery are described under *Impact*, a) **Evaluation.**

The ADRD education and service delivery component focus on providing quality interdisciplinary education through ICGE and timely diagnosis of ADRD, and interdisciplinary education and support services focused on creating ADRD friendly communities. The PWD and their caregivers and families will be central in all activities that form part of this initiative. The intended outcomes of the proposed collaboration is also described under *Impact*, a) **Evaluation.**

References

1. National Center for Health Statistics, *2013 Urban-Rural Classification Scheme for Counties*. 2014.
2. U.S. Census Bureau. *Urban and Rural Classification*. 2010.
3. Center for Disease Control and Prevention (CDC). *CDC Community Commons Interactive Tool*. 2015.
4. U.S. Census Bureau, *American Community Survey 2008-2012.* 2012.
5. *Population Distribution and Change: 2010 to 2050*, in *2014 Census Briefs*. 2014, US Census Bureau: Washington DC.
6. Bureau of Labor Statistics, *Local Area Unemployment Statistics*. 2014.
7. Centers for Disease Control and Prevention (CDC), *BRFSS, US Physical Activity Trends by State.* 2013, US.
8. Centers for Disease Control and Prevention, *National Diabetes Statistics Report:Burden in the US*. 2014. Atlanta, GA .
9. Surveillance Epidemiology and End Results (SEER), *State Cancer Profiles*. 2014, NCI: Washington DC.
10. United Health Foundation, *America's Health Rankings Kentucky*. 2013.
11. South Carolina Rural Health Research Center, *Minorities in Rural America*. 2002, Department of Health Administration. Norman J. Arnold School of Public Health: Columbia, SC.

12. U.S. Health and Human Services (HHS), *Area Health Resource File*. 2014, HRSA: Washington D.C.
13. Deloitte, *The Commonwealth of Kentucky Health Care Workforce Capacity Report*. 2013, Deloitt Development LLC.
14. Price, M.L., *Kentucky Population Growth. What Did the 2010 Census Tell us?* 2011, KY State Data Center: UofL.
15. West, C.P. and D.M. Dupras, *General Medicine vs Subspecialty Career Plans Among Internal Medicine Residents.* Journal of the American Medical Assocation. **308**(21): p. 2241-2247.
16. Vincent, G.K. and V.A. Velkoff, *The Next Four Decades. The Older Population in the US: 2010-2050. Population Estimates and Projections.* 2010, US Department of Commerce. Economic and Statistics Administration. Washington.
17. Price, M.L., *KY Population Growth: What Did the 2010 Census Tell Us?* . 2011, KY Data Center Research Report.
18. Center for Disease Control and Prevention, *Health Disparities & Inequalities Report - US*. 2013. Atlanta, GA.
19. Ashida, S., A.V. Wilkinson, and L.M. Koehly, *Social influence and motivation to change health behaviors among Mexican-origin adults: Implications for diet and physical activity.* American Journal of Health Promotion, 2012. **26**(3).
20. Sosa, E.T., L. Biediger-Friedman, and Z. Yin, *Lessons learning from training of Promotores de Salud for obesity and diabetes prevention.* Journal of Health Disparities Research & Practice, 2013. **6**(1): p. 1-13.
21. United Health Foundation, *America's Health Rankings Kentucky*. 2014.
22. Centers for Chronic Disease Prevention, *State Indicator Report on Fruits and Vegetables*. 2013, DHHS.
23. National Complete Streets Coalition, *Dangerous by Design*. 2014, Smart Growth America.
24. National Complete Streets Coalition, *Complete Streets Work in Rural Communities*. 2012.
25. U.S. Census Bureau, *County Business Patterns.* 2012.
26. Pearcy, J.N. and K.G. Keppel, *A Summary Measure of Health Disparity.* Public Health Report, 2002. **117**: p. 273-280.
27. U.S. Census of Agriculture, *Geographic Area Series: Selected Crops Harvested.* 2012.
28. Centers for Disease Control and Prevention (CDC), *Tobacco Control Highlights Kentucky*. 2014, DHHS.
29. Leadership Conference Education Fund, *The Road to Health Care Parity: Transportation Policy and Access to Health Care*, Civil and Human Rights News, Editor. 2011.
30. Alzheimer's Association, *Alzheimer's facts and figures.* 2014, Alzheimer Association: Chicago, Il.
31. Hurd, M.D., et al., *Monetary costs of dementia in the US.* Journal of Medicine, 2013. **368**(14): p.1326-1334.
32. Brodaty, H. and C. Arasaratnam, *Meta-anaylsis of nonpharmacological interventions for neuropsychiatric symptoms of dementia.* American Journal of Psychiatry, 2012. **169**(9): p. 946-953.
33. Gitlin, L.N., *Good news for demntial care: caregiver interventions reduce behavioral symptoms in people with dementia and family distress.* American Journal of Psychiatry, 2012. **169**(9): p. 894-897.
34. Head, B.A., et al., *The Interdisciplinay Curriculum for Oncology Palliative Care Education.* JPalMed, 2014. **17**(10).
35. Faul, A.C., *Understanding Context in a Diabetes-Related Healthy Eating Initiative in Rural America.* Ed.Ger., 2014. **40**.
36. Miller, J.J., et al.,*Strength in process: Using concept mapping to inform comm coal development.* JComPr, 2012. **20**(4).
37. Kirkpatrick, D.L. and J.D. Kirkpatrick, *Tranferring Learning to Behavior: Using the Four Levels to Improve Performance*. 2005, San Francisco, California: Berrett-Koehler.
38. Mezey, M., et al., *Healthcare Professional Training: A Comparison of Geriatric Competencies.* JAmGerSoc, 2008. **56**.
39. National Consensus Project for Quality Palliative Care, *Clinical Practice Guidelines*. 2013. Pittsburg, PA.
40. National Ass. of Professional Geriatric Care Managers, *Code of Ethics and Standards of Practice*. 2014.Tuscon, Az.
41. Schmitt, M., et al., *Core Competencies for Interprofessional Collaborative Practice: Reforming Health Care by Transforming Health Professionals' Education.* Acad Med, 2011. **86**: p. 1351.
42. National Quality Forum, *Priority Setting for Healthcare Performance Measurement: Addressing Performance Measure Gaps in Person-Centered Care and Outcomes*. 2014, DHHS: Washington, DC.
43. National Quality Forum, *Priority Setting for Healthcare Performance Measurement: Addressing Performance Measure Gaps in Care Coordination*. 2014, DHHS: Washington DC.
44. Partnership for Health in Aging Multidisciplinary Competencies in the Care of Older Adults at the Completion of Entry-Level Health Professional Degree. nd, American Geriatric Society.
45. Development Group of the Clinical Practice Guideline. *Clinical Practice guideline on the comprehensive care of people with Alz's disease and other dementias*. 2010, Agency for Health Quality and Assessment of Catalonia: Barecelona.
46. SoftChalk Create (computer program). 2014, SoftChalk LLC: Richmond, VA.
47. Rogers, C.R., *The Interpersonal Relationship in the Facilitation of Learning*. National Education Association, Association for Supervision and Curriculum Development, ed. T. Leeper. 1967. 1-18.
48. Andersen, T., *The reflecting team: Dialogues and dialogues about the dialogues. New York: W.W. Norton.* 1991.
49. Department of Vermont Health Access, *Vermont Blueprint for Health. Smart choices. Powerful tools.* Williston, VT.
50. Coleman, E.A., et al., *Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention.* Journal of American Geriatric Society, 2004. **52**: p. 1825-2004.
51. Mukamel, D.B., et al., *Program Characteristics and Enrollees' Outcomes in the Program of All-Inclusive Care for the Elderly (PACE).* The Milbank Quarterly, 2007. **85**(3): p. 499-531.

52. Wagner, E.H. *The fourth aim: Primary care and the future of American medical care*. 2011. Helena, Montana.
53. Bodenheimer, T. and C. Sinsky, *From Triple to Quadruple Aim: Care of the Patient Required Care of the Provider.* The Annals of Family Medicine, 2014. **12**: p. 573-576.
54. Sinsky, C.A., *In search of joy in practice: A report of 23 high-functioning primary care practices.* AnFamMed, 2013.
55. Robinson, K.M., T. Crawford, K.C. Buckwalter, *Outcomes of the PLST on depression in dementia caregivers.* Ger.
56. Mittelman, M.S., et al., *Improving well-being delays nursing home placement of patients with Alz. disease.* Neur, 2006.
57. Robinson, K.M., *The relationship between social skills, social support, self esteem, and burden in adult caregivers.* Journal of Advanced Nursing, 1990. **15**: p. 788-795.
58. Stiefel, M. and K. Nolan, *A Guide to Measuring the Triple Aim: Population Health, Experience of Care, and Per Capita Cost.*, in *IHI Innovation Series white paper*. 2012, Institute for Healthcare Improvement: Cambridge, Massachusetts.
59. Sinsky, C.A. *In search of joy in practice: A report of 23 high-functioning primary care practices.* AnFamMed, 2013.
60. Green, G. and L. Lakey, *Building dementia-friendly communities: A priority for everyone*. 2013, Alzheimer's Society.
61. National Research Council, *Health professions education: A bridge to quality*. 2003, IOM: Washington, DC.
62. Committee on Quality of Health Care in US, *To err is human: Building a safer heatlh system*. 1999, IOM: Washiington.
63. Committee on Planning a Continuing Health Professional Education Institute, *Redesigning continuing education in the health professions*. 2010, IOM;Washington, DC.
64. Greiner, A.C. and E. Knebel, eds. *Health Professions Education: A Bridge to Quality*. Committee on the Health Professions Education Summit. 2003, National Academy of Sciences: Washington DC.
65. World Health Organization, *Framework for action on interprofessional education and collaborative practice*, D. Hopkins, Editor. 2010, World Health Organization Department of Human Resources for Health: Geneva, Switzerland.
66. Zorek, J. and C. Raehl, *IPE accreditation standards in the USA: A comparative analysis.* J Interprof Care, 2013. **27**(2).
67. Barrows, H.S. and R.M. Tamblyn, *Problem-based learning: an approach to medical education*. 1980, NY: Springer.
68. Head, B.A., T. Schapmire, and A.C.. Faul, *Evaluation of An Interdisciplinary Curriculum Teaching Palliative Care Integration in Oncology.* Journal of Cancer Education, In Press.
69. Dorr, D.A., et al., *Integrating Geriatric Care Mangement Intro Primary Care Practice.* JGenIntMed, 2006. **21**(S4).
70. Coleman, E.A., *The care transitions intervention: results of a randomized controlled trial.* ArchIntMed, 2006. **166**(17).
71. Steinglass, P., *Family systems and motivational interviewing: A systemic-motivation model for treatment of alcohol and other drug problems.* Alchoholism Treatment Quarterly, 2008. **26**(1-2): p. 9-29.
72. McHugh, M.D., et al., *Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care.* Health Affairs, 2011. **30**(2): p. 202-210.
73. Kushnir, T., *Is burnout associated with referral rates among PCPs in community clinics?* . FamPract 2014. **31**(1).
74. Babbott, S., et al., *Electronic medical records and physician stress in primary care: Results from the MEMO study.* Journal of the American Medical Informatics Association, 2014. **21**(e1): p. e100-e106.
75. Reid, R.J., et al., *The group health medical home at year two: Cost savings, higher patient satisfaction, and less burnout for providers.* Health Affairs, 2010. **29**(5): p. 835-843.
76. Belle, S.H., et al., *Enhancing the quality of life of dementia caretivers from different ethnic or racial groups: A randomized, controlled trial.* Annals of Internal Medicine, 2006. **145**(727-738).
77. Long, K.H., et al., *Estimating the potential cost savings from the New York University Caregiver Intervention in Minnesota.* Health Affairs, 2014. **33**(4): p. 596-604.
78. Klug, M.G., G.W. Halaas, and M.L. Peterson, *North Dakota assistance program for dementia caregivers lowered utilization, produced savings, and increased empowerment.* Health Affairs, 2014. **33**(4): p. 605-612.
79. Burgio, L.D., *Translating the REACH Caregiver Intervention for Use by AAA: the REACH OUT Program.* Ger. 2009.
80. Langley, G.L., *The Improvement Guide: A Practical Approach to Enhancing Org Performance.* 2009, SF: Jossey-Bass.
81. Mann, K., et al., *Development of a scale to measures health professions students' self-efficacy beliefs in interprofessional learning.* Journal of Interprofessional Care, 2012. **26**: p. 92-99.
82. Glasgow, R.E., et al., *Use of the patient assessment of Chronic Illness Care (PACIC) with Diabetic Patients: Relationship to patient haracteristics, receipt of care, and self-managment.* Diabetes Care, 2005. **28**(11): p. 2655-2661.
83. Lorig, K.R., et al., *Effect of a self-management program on patients with chronic disease.* EffClinPrac, 2001. **4**(6).
84. Toobert, D.J., S.E. Hampson, Glasgow, R.E.,*The Sum of Diabetes Self-Care Act. Measure.* DiabCare, 2000. **23**(7).
85. Sheikh, J.I. and J.A. Yesavage, *GDS: Recent evidence and development of a shorter version.* ClinGer, 1986. **5**.
86. Russell, D., *UCLA Loneliness Scale: Reliability, validity and factor structure.* JPersAssess, 1996. **66**(20-40).
87. Interprofessional Education Collaborative Expert Panel, *Core Comp. for Interprof. Coll Practice.* 2011. Washington DC.
88. Csaja, S.J.e.a., *Development of the Risk Appraisal Measure (RAM): A brief screen to identify risk areas and guide interventions for dementia caregivers.* Journal of American Geriatric Society, 2009. **57**(6): p. 1064-1072.
89. O'Connor, M.I. and S.H. McFadden, *Development and psychometric validation of the Dementia Attitudes Scale.* International Journal of Alzheimer's Disease, 2010: p. 1-10.