UAB COMPREHENSIVE CANCER CENTER

Cost Savings in Patient Navigation

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Acknowledgments & Disclaimer

Deep South Cancer Navigation Network (PCCP)

- Edward Partridge MD (PI)

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Triple Aim

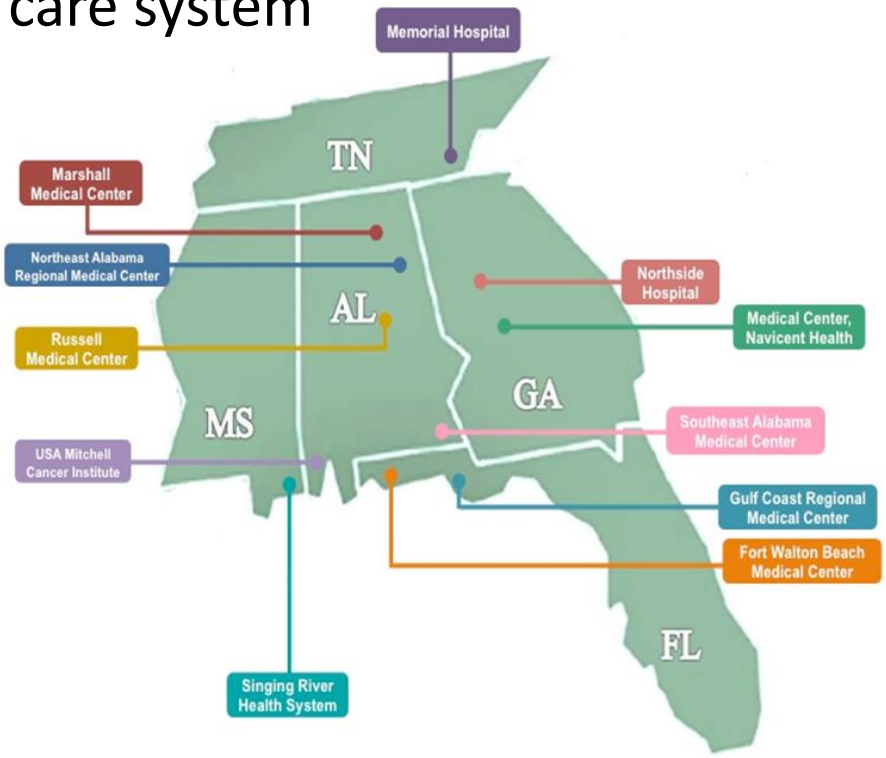
- Better health
- Better healthcare
- Lower costs of care

PATIENT CARE CONNECT

A service of UAB Health System Cancer Community Network

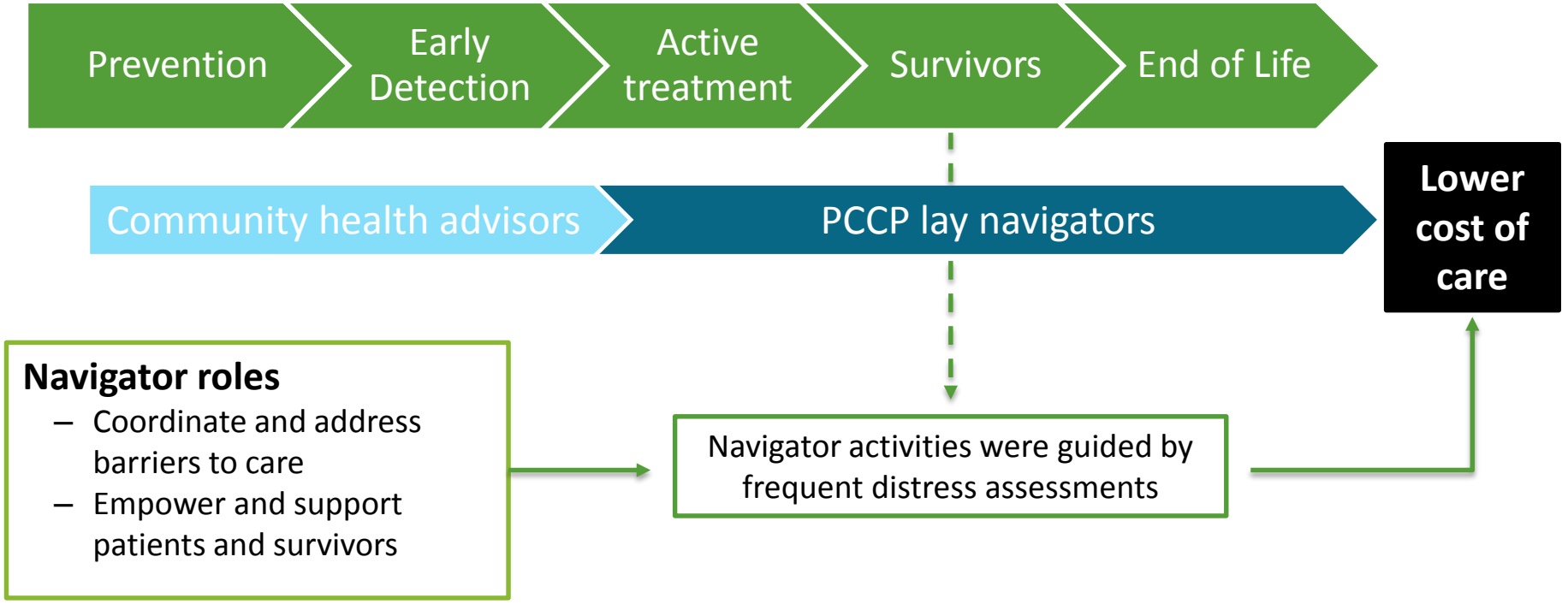
The Patient Care Connect Program (**PCCP**) is a lay navigation program integrated into the care system

- Older adults ≥65 years with cancer
- Cancer treatment or follow up care
- 12 cancer centers in 5 southern
- states
- Mix of academic HSC, hospital-based
- Affiliated and private practices



- 12 nurse site managers
- ~40 lay navigators

Focus of the PCCP



Essentials of the PCCP

PCCP offered as service starting March 2013

- Considered standard of care; thus no random assignment to PCCP

Enrollment by

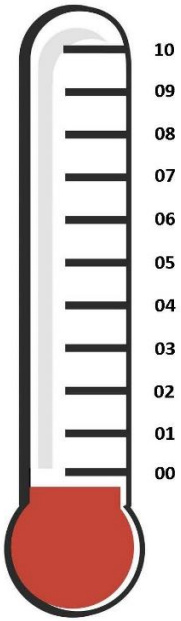
- Referral from providers and self-referrals
- Census reports on hospitalizations and ER visits

Priority given to high acuity cancers and patients

- High acuity cancers such as lung, ovarian, brain, hematologic, head and neck
- Stage 4 cancers and metastatic disease
- High risk co-morbidity (diabetes, heart failure, COPD, history ED visit in prior month

Nurse site manager assigned patients to navigators to initiate contact

Distress Assessment



PRACTICAL PROBLEMS:

___Ability to use Phone ___Child Care ___Cooking
___Getting Groceries/Shopping ___Housekeeping ___Housing
___Insurance/Financial ___Manage Finances ___Transportation
___Work

FAMILY PROBLEMS:

Dealing with: ___Children ___Family Support
___Friends ___Partner

INFORMATION CONCERNS:

Lack of Info About (my):

___Alternative Therapy Choices ___Diagnosis/Disease ___Diagnostic Results
___Diet/Nutrition ___End of Life Issues ___Hospice
___Home Health ___Legal Issues
___Maintaining Fitness/Exercise ___Performing Medical Procedures
___Prognosis ___Scheduling ___Survivorship
___Side-Effects/Treatment(s) ___Side-Effects/Medication(s)
___Supportive Care ___Treatment(s) ___Treatment Decisions

COGNITIVE PROBLEMS:

___Feeling Confused ___Forgetfulness ___Poor Thinking
___Memory/Concentration ___Seeing Things/Hearing Things
___Understanding Verbal or Written Words

OTHER:

___Ability to Read/Write ___Cultural/Religious Needs
___Citizenship ___Lack of Social Support
___Language Barrier ___Post-op Care

PHYSICAL PROBLEMS:

___Balance/Walking & Mobility Difficulty ___Bathing/Dressing
___Body Sores ___Breathing
___Changes in Urination ___Constipation
___Controlling Bowel Movement ___Controlling Urination
___Diarrhea ___Dizziness ___Eating
___Fatigue ___Feeding Self ___Fever
___Getting Around- Inside Home ___Getting Around- Outside Home
___Hearing ___Indigestion ___Mouth Sores
___Loss of Appetite ___Moving In/Out of Chair or Bed
___Nausea/Vomiting ___Nose Dry/Congested
___Opening Medication Bottles ___Pain ___Sexual Problems
___Skin Dry/Itchy ___Sleep/Insomnia ___Substance Abuse
___Swallowing ___Swollen Arms/Legs ___Talking
___Tingling Hands/Feet ___Toileting ___Vision
___Weight Change ___Writing

EMOTIONAL PROBLEMS:

___Adjusting to Changes in Appearance ___Adjusting to my Illness
___Boredom ___Concentration
___Coping with Grief & Loss ___Emotional Control ___Fear(s)
___Feeling Depressed or "Blue" ___Feeling Hopeless ___Guilt
___Intrusions (thoughts that appear suddenly and repeatedly that are not welcome)
___Isolation/Feeling Alone ___Loss of Interest in Usual Activities
___Managing Stress ___Nervous/Anxiety
___Role Changes ("Caring for Family") ___Sadness
___Self-esteem ___Worry

SPIRITUAL/RELIGIOUS CONCERNS:

___Lack of Comfort, Strength or Hope from Spiritual Beliefs
___Facing my Mortality ___Lack of Support from Spiritual/Religious Group
___Loss of Faith ___Trust in God ___Loss of Sense of Purpose
___Meaning of Life ___Relating to God

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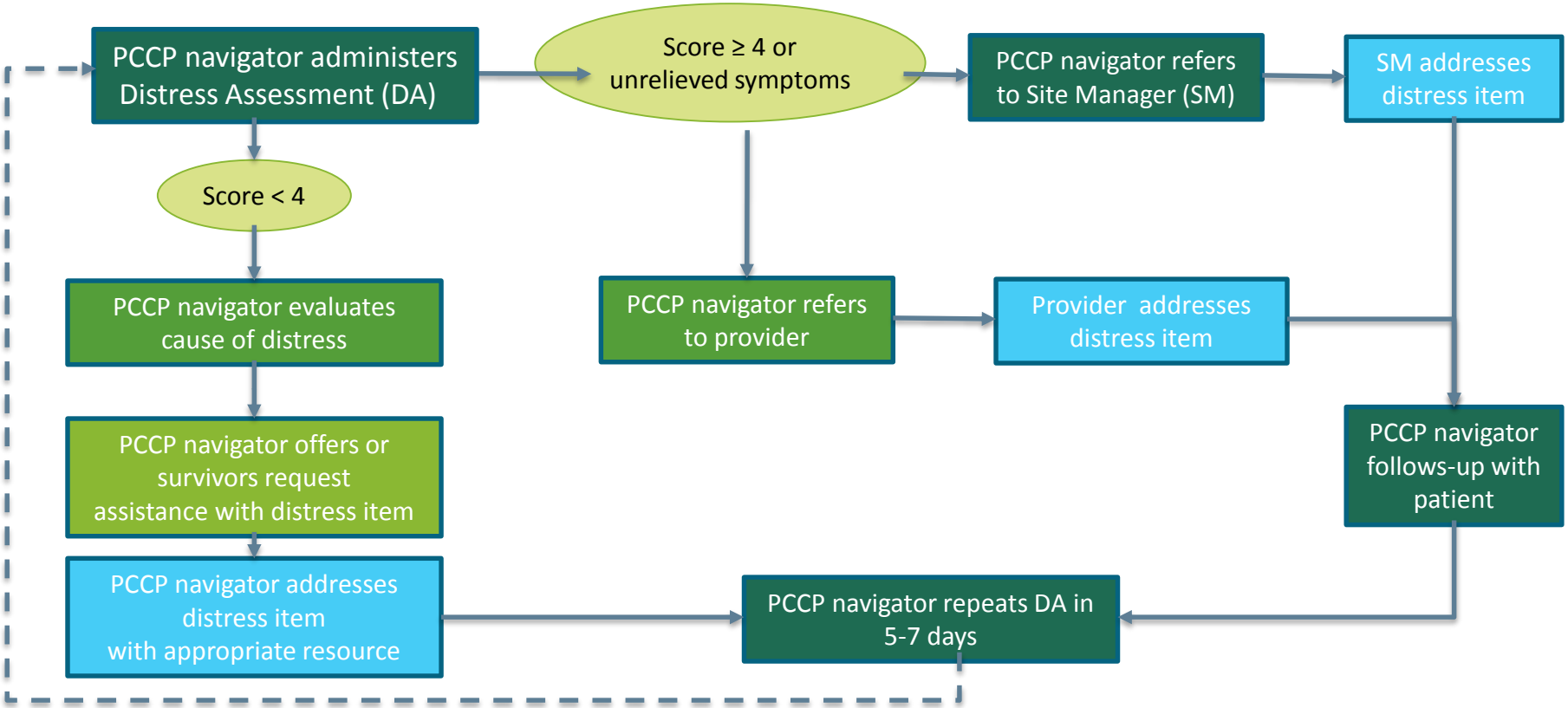
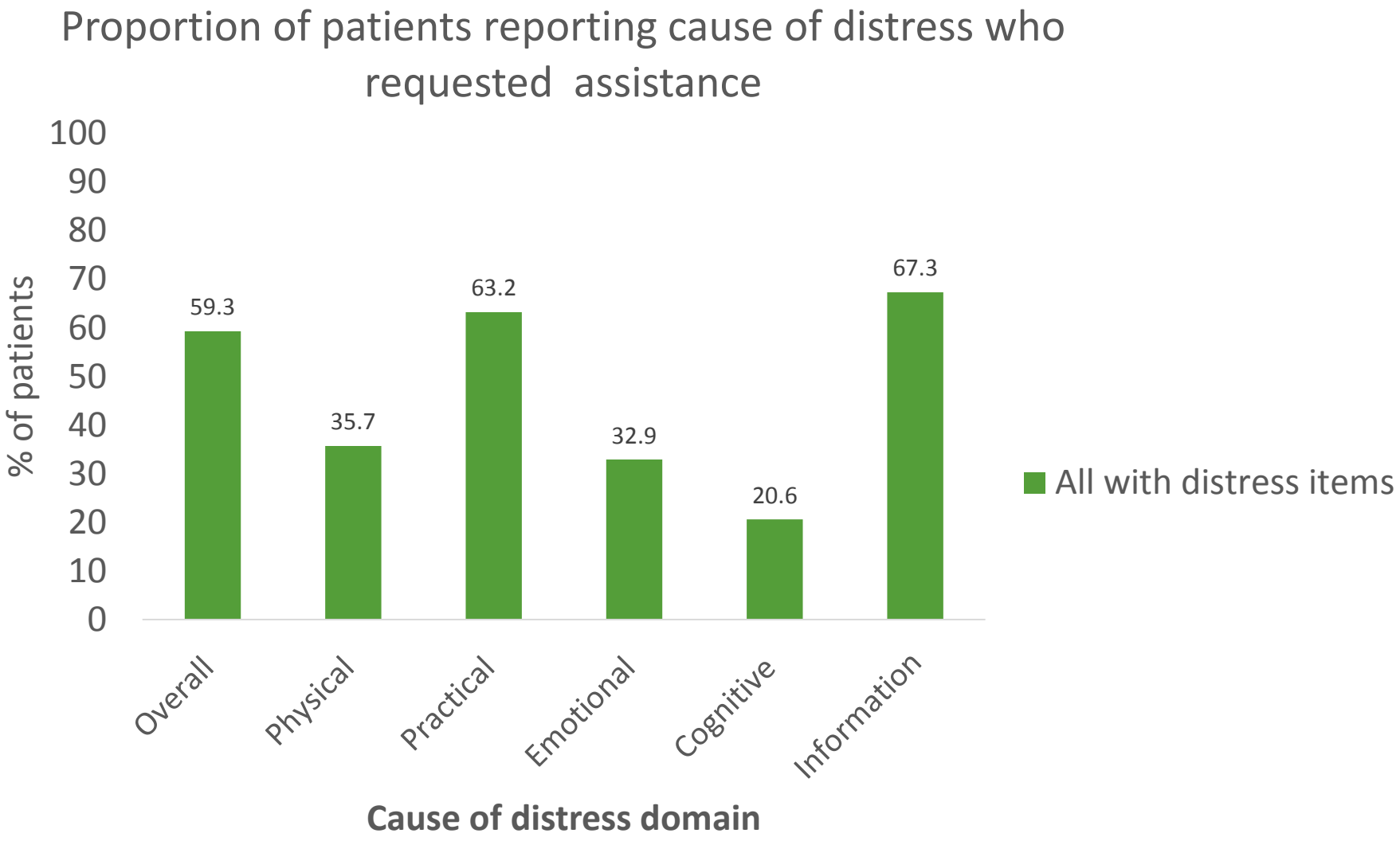
PCCP Survivor-Centered Care Map



Request for assistance from navigators



Cost Evaluation

- Can PCCP navigation result in lower health care costs?
  - Reduction in hospital stays
  - Decreased ED visits
  - Decrease in ICU admissions
- Can PCCP maintain patients on evidence-based clinical pathways?
- Will navigated patients have better satisfaction with care?

Methods

- **Design**
  - Secondary analysis of Medicare claims data from 1/1/2012 - 12/31/2015
  - Compare costs of health care use for older patients receiving PCCP lay navigation and matched cohort of non-navigated patients
- **Sample**
  - Patients with cancer >65 yrs
  - Medicare Part A and B insurance
  - At least 1 quarter of observation before
  - 2 quarters of observation after enrollment into PCCP

Analysis

- Repeated measures generalized linear models evaluated trends in total cost based on
  - Group assignment
  - Quarters after enrollment (time)
  - Calendar time

- *Interaction between group and time was primary coefficient of interest*

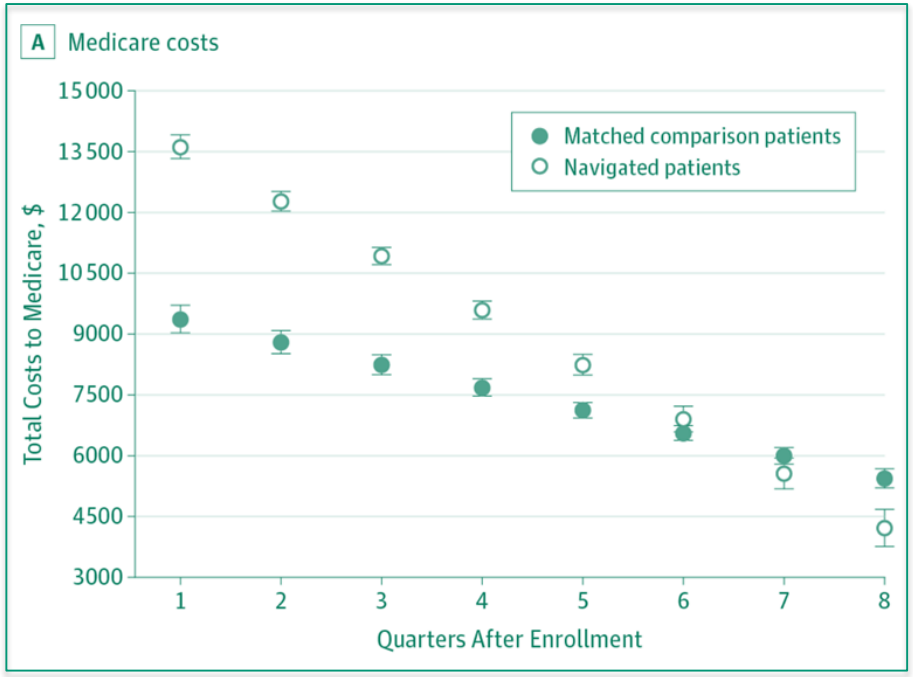
Demographics of Unmatched Groups (n=15,251)

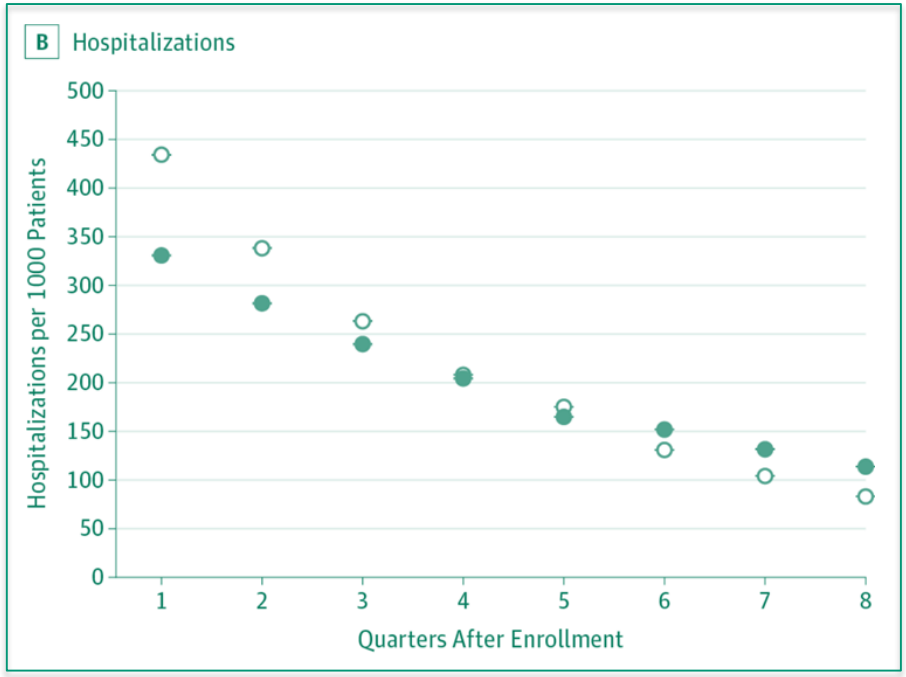
	Non-Navigated (n=9608)	Navigated (n=6304)	P value
Age (mean)	74.7 (7)	74.7 (6.7)	.62
Female	51.0	51.4	
African American	12.0	12.6	
High cancer acuity (%)	37.5	39.8	.003
Phase of care - Initial (%)	76.2	71.5	
Comorbidity score (2-3)	26.9	29	<.001
Any chemotherapy	17.1	27	<.001
Pre-enrollment Medicare costs per quarter ($ mean)	6,257	6,697	.01

Demographics of Navigated Patients and Matched Groups (n=12,428)

	Matched	Navigated	P value
Age (mean)	74.8 (6.9)	74.7 (6.7)	.34
Female	52.4	51.4	
African American	12.4	12.4	
High cancer acuity (%)	39.9	40	.94
Phase of care - Initial (%)	73.2	72.6	
Comorbidity score (>4)	25.4	25.9	
Any chemotherapy	20.1	26.5	<.001
Pre-enrollment Medicare costs per quarter	6629	6612	

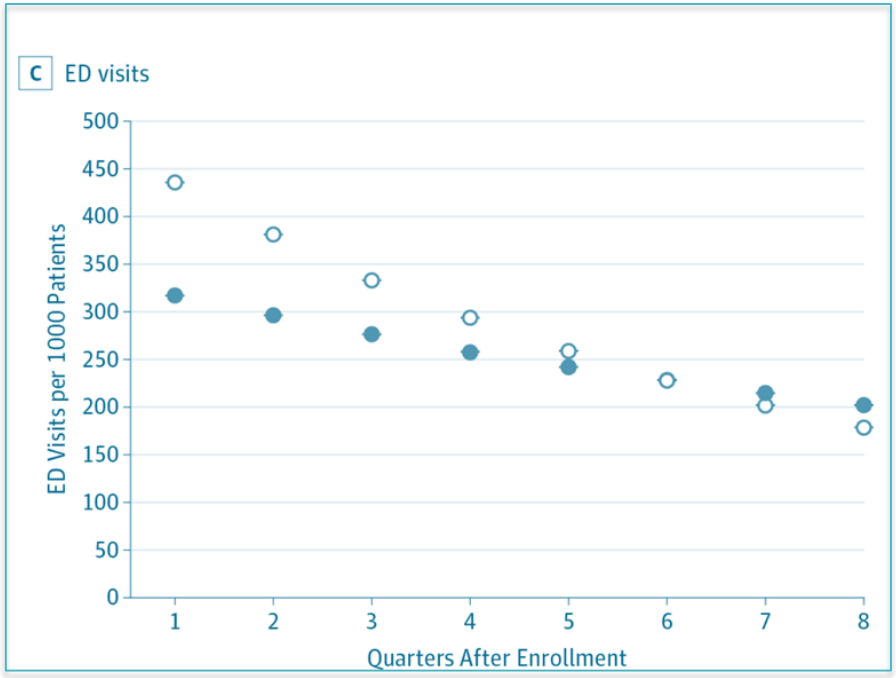
Model-Estimated Medicare Costs & HealthCare Use

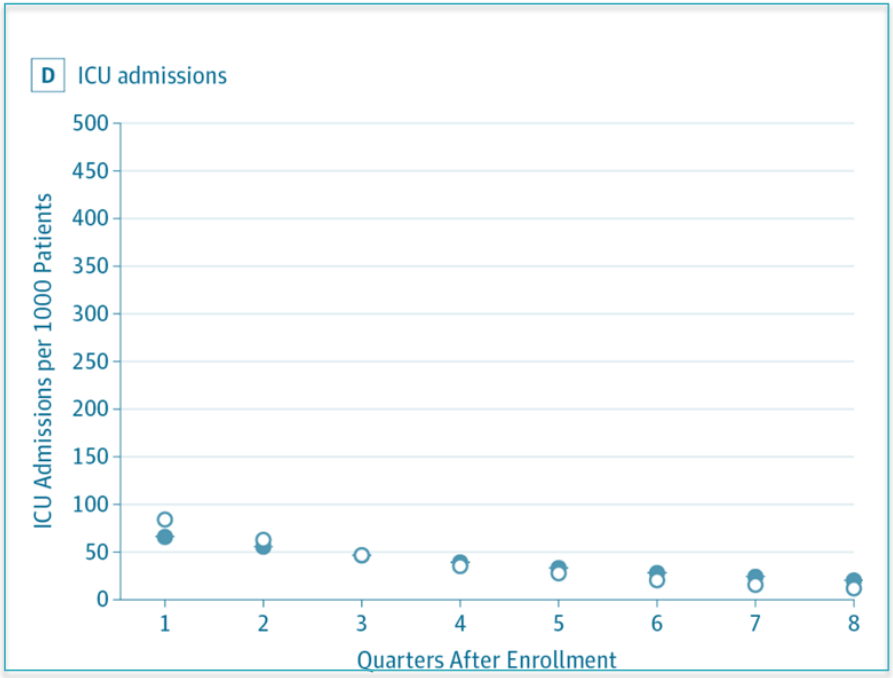




Data from: Rocque et al. *JAMA Oncol. 2017; 3(6):817-25*. doi:10.1001/jamaoncol.2016.6307

Resource Use: ED Visits and ICU Admission





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Results of Regression Analyses on Medicare Costs and Health Care Use

Outcome	Group x Time	Time	Group
Total cost in $	-781.29 (44.77)	-561.82 (30.99)	5030.67 (247.87)
No of ED visits, IRR (95% CI)	0.94 (0.92-0.96)	0.96 (0.94-0.97)	1.56 (1.44 – 1.70)
# Hospitalizations, IRR (95% CI)	0.92 (0.90-0.94)	0.90 (0.88-0.91)	1.66 (1.53-1.81)
No of ICU admit, IRR (95% CI)	0.90 (0.86-0.94)	0.87 (0.85-0.90)	1.62 (1.38-1.91)

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Navigator Workload

Mean n = 152 patients per quarter

- 72 actively navigated
- 83 high acuity
- 30 newly enrolled

Active 57 days per quarter	Contacts: 3.3 face to face or phone	Average one contact every 18 days

Return on Investment

- Costs declined a mean of $781.29 more per patient per quarter compared with non-navigated patients.
- Estimated as a $475,024 reduction in cost annually for a navigator managing 152 patients per year
- Estimated ROI was 1:10 for navigator with annual salary investment of $48,448

PCCP and Patient Satisfaction

90.7% requests for assistance were resolved to the patient satisfaction

- Required 1.1 interventions
- Resolved in ~ 11 days
  - Decline in requests over time
    - 18.6 in Q3 2013
    - ~9 in Q2 2015

Discussion and Limitations

- Reduction in resource use and costs of PCCP
- Patient satisfaction
- PCCP targeted high-risk, high-cost patients & patients with unmet needs
- Estimated potential 1:10 ROI helps make financial case for sustainability of navigation programs
- Navigators not limited by traditional model of clinic-based care
- No random assignment
- Potential confounding factors (e.g., social support and level of engagement) may influence likelihood of navigation
- Institutional sharing of data may have supported cultural shift in cost and resource declines
- ? Long term influence of ACA
- *Without transition to value based payment system, health care systems may not implement or expand navigation*

Conclusion

Lay navigators in the PCCP supported patients with cancer from diagnosis through survivorship and end of life.

PCCP health care costs and health care use showed significant decline for navigated patients compared with matched group comparison.

Lay navigation programs can be expanded as health systems transition to values-based health care.

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