Improving Access to Home-based Palliative Care for Patients with Advanced Chronic Illness

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COLLABORATION FOR HOME CARE ADVANCES IN MANAGEMENT AND PRACTICE

This presentation was delivered by Miriam Ryvicker, Research Associate and Penny H. Feldman, Director, Center for Home Care Policy & Research of the VNSNY at the 2009 Academy Health Annual Research Meeting, Chicago, IL, June 30th, 2009

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Problem and Opportunity

- *Problem:* Intense, acute care in advanced stages of illness –
  - Does not necessarily = better quality of life or reduced morbidity
  - Does = high Medicare costs, potential misallocation of resources
    - 2000-03: Medicare Spending last 6 months of life (Dartmouth Atlas 2006)
      - U.S. Hospital days per Medicare enrollee . = 11.7 days
      - (NYS = 16.9 days; more than any other state save Hawaii)
      - U.S. Hospice use rate = 27% (NYS = 18.7%)
    - 2001-05 Medicare spending on chronically ill decedents, last two years of life (Dartmouth Atlas 2008)
      - All U.S. Hospital Regions = $46,412 (NY: Manhattan & Bronx = $81,143)
- *Opportunity:* Proactively manage advanced illness; promote palliative/hospice care use and avoid inappropriate acute care

Evidence and Challenge

- *Evidence:*
  - Benefits of hospice/palliative care well documented (Casarett, et al., 2005; MedPAC, 2009; Teno and Connor, 2009)
  - Many terminally ill patients enter hospice only in final days before death or not at all (MedPAC 2009)
  - Multiple barriers impede hospice/palliative care use:
    - Unpredictability of death
    - Provider/patient/family attitudes toward death and dying
    - Clinician training
    - Poor communication
    - Regulatory standards and quality measures
    - Third party coverage and reimbursement
- *Challenge:* Where and how to situate palliative care to improve patient care & QoL, reduce inappropriate, high-cost resource use

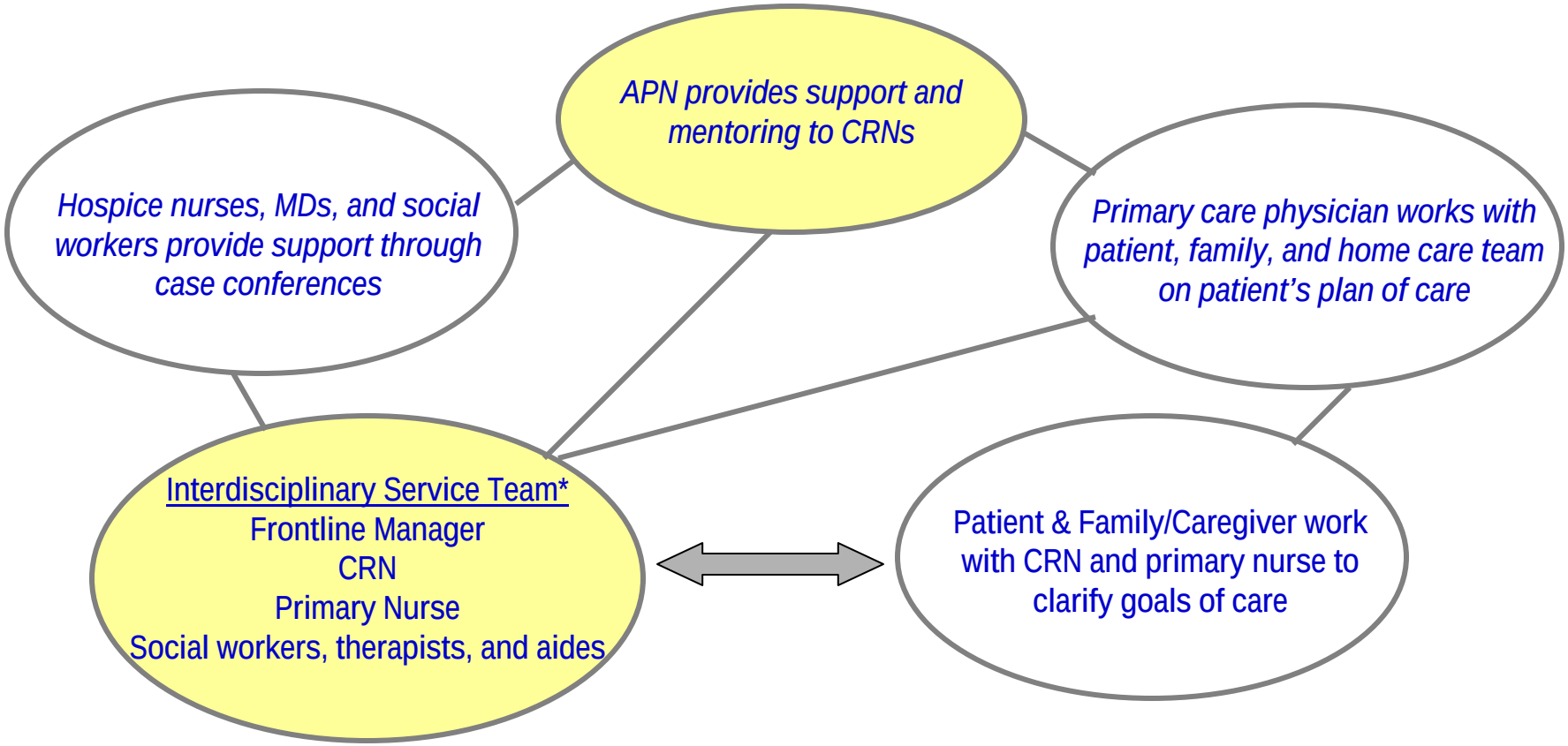
Advanced Illness Management (AIM) Project: Multifaceted Intervention

Goal: Improve access to cost-effective home-based palliative care for home health patients with advanced illness; keep patients at home

Intervention:

- Integrate advanced illness management into care delivery
  - Deploy APN, MD, SW to direct, guide and support
  - Designate/train AIM Clinical Resource Nurse (CRN) for each service team
  - Increase awareness, skills of all team members
  - Develop collaboration between CRN, primary nurse, patient/family
- Identify patients thru "risk" algorithm
- Prepare/implement collaborative, individualized AIM plans: advance care directives, ED alternatives, palliative care, hospice referral
- Develop staff: career path, training, mentoring

AIM MODEL



* Roles of Team Members

- Frontline service manager addresses CRN assignment and caseload issues
- CRN collaborates with primary nurse on AIM plan of care
- Primary nurse follows up with patient, family, and primary care physician on AIM plan of care
- Social workers, therapists, and aides provide additional support to patients as needed

Setting

U.S. Home Health Care – post-acute & long-term care

- ~8000 Medicare-certified HHAs (3 million discharges in 2005)
- Older persons: 85% of home care episodes; multiple chronic conditions; multiple medications; frailty; cognitive impairment
- Over 7% admitted with a serious condition that could result in death within a year. (Murtaugh, unpublished data)
- Dispersed, generalist nursing workforce (few APNs, little geriatric or palliative care training)

VNSNY – Established 1893

- Largest nonprofit home care organization in U.S. – Serves NYC metropolitan area ~31,000 average daily census; ~120,000 patients annually, ~86 service delivery teams, ~2500 nurses, ~650 therapists, ~650 social workers, ~6000 aides
- Queens region: 11 teams; 2771 avg. daily census; 232 nurses

Prospective Study Design – Randomization at Team Level

Service Teams: 8 service teams randomized to AIM or usual care status (ninth team serving Chinese/Korean-speaking patients purposively assigned to intervention status)

- *Patient Population*: Patients in advanced stages of chronic illness receiving traditional homecare services
- *Study period:* 12 months
- *Evaluation:* Assessment of the impact of AIM on –
  - Patients:
    - Symptom control, quality of life, care involvement
    - Advance care plans/directives
    - Hospice referral and admission
    - Emergency care & hospital admission
- Nurses' awareness of palliative care
- Today's presentation focuses on patient outcomes

Hypotheses

Relative to usual care, AIM team patients will have:

- Better symptom control (pain and dyspnea)
- More involvement in advance care planning & higher rate of Advance Directives (ADs)
- Increased hospice referrals
- Fewer hospital admissions and ED visits

AIM intervention will be cost effective relative to usual care

Methods
Data Sources & Measures

Data sources

- OASIS: baseline diagnoses, symptom severity, ADLs/IADLs, informal care, etc.
- Medications database: baseline number of medications
- Administrative data: baseline demographics, payer, referral source; hospice referral/admission; cumulative home health LOS; home health service use;, referral to/admission to hospice; admission to hospital; other discharge
- In-person patient & nurse surveys –
  - Patients: cross-sectional "blinded" survey administered 8-12 weeks after study entry: involvement in care, symptoms, advance directives, hospital/ER use
  - Nurses: cross-sectional survey of nurses on intervention and control teams

Measures –

- Predictor variable – intervention status (treatment/control)
- Dependent variables: self-reported care involvement, pain rating, shortness of breath; service use – home health LOS, no of visits/week by discipline; hospice referrals & admissions; hospital admissions; ER visits
- Baseline control variables: team, age, sex, race/ethnicity, language, living alone, referral source, payer, regimen change, poor prognosis, pain and shortness or breath, diagnosis of cancer and COPD, other clinical items

Analytic Methods

Multivariate statistical analysis

- *Intent-to-Treat:*
  - Include all AIM-eligible patients assigned to intervention and control teams
- *Analytic Approach:*
  - Adjust for case-mix differences in demographics, function and clinical status
  - Adjust for team clustering
  - Test AIM's impact on dependent variables
- *Multivariate Models:*
  - Logistic (hospice admission/referral, any hospitalization, ER use, home care use: nursing, PT, social work, HHA)
  - Linear (survey data)
  - Survival (time to hospitalization)
- *Supplemental Analyses (not reported here)*
  - Comparison to AIM-eligible patients outside Queens
  - Propensity Score match of patients with documented administration of special AIM assessment tool to similar patients outside Queens

Eligibility Criteria

Patients must meet 1 of the following 3 criteria:

- A. Life expectancy < 6 months AND either poor overall prognosis or poor rehabilitation prognosis

OR

- B. Poor prognosis AND a primary diagnosis of one of the following diseases with severity of 3 or greater:

  Malignant neoplasm, Heart failure-CHF, Ischemic heart disease, HIV, Renal Failure, Hepatic Failure, COPD, Parkinson's, Multiple Sclerosis, ALS, Huntington's, and Alzheimer's (for Alzheimer's only, severity must be 4)

OR

- C. Primary or secondary diagnosis of one of the diseases listed above with severity of 4

Descriptive Findings: Baseline

- *AIM- eligible patients were clinically complex*:
  - 48% had a life expectancy of less than 6 months
  - Most common primary diagnoses were: (Cancer – 29.5%, COPD – 13.7%, HF – 10.4%)
  - On average, patients had 4.3 comorbidities, took 8 medications, and needed assistance in 10.3 out of 14 ADLs/IADLs
- *Due to randomization at team level, Intervention and Control patients varied significantly on key demographic (e.g., race) & clinical (e.g., prognosis, pain) variables, controlled for in subsequent analyses*

AIM PATIENTS
Baseline Demographic Characteristics

	Control (N=647)	Intervention (N=471)
Age in years, mean (SD)	72.3 (15.0)	73 (15.0)
Female, % (N)	57.5 (N=372)	55.4 (N=261)
Lives Alone, % (N)	21.8 (N=141)	28.7 (N=135)
White, % (N)	51.0 (N=330)	53.1 (N=250)
Black , % (N)	21.2 (N=137)	12.5 (N=59)
Hispanic, % (N)	14.2 (N=92)	19.5 (N=92)
Asian, % (N)	10.7 (N=69)	14.4 (N=68)
Payer - Medicare FFS, % (N)	35.8 (N=230)	38.6 (N=180)
Payer -- Medicaid FFS , % (N)	7.5 (N=48)	4.5 (N=21)
Payer -- Dually Eligible , % (N)	17.1 (N=110)	18.7 (N=87)
Payer -- HMO (Medicare, Medicaid, Commercial), % (N)	37.5 (N=241)	35.8 (N=167)
Referred from Hospital , % (N)	69.7 (N=451)	79.4 (N=374)
Referred from NH or Rehab , % (N)	12.3 (N=80)	11.3 (N=53)
Referred from Community , % (N)	21.5 (N=139)	12.1 (N=57)

Highlighted cells indicate a significant difference between the control and intervention groups.

AIM PATIENTS

Baseline Clinical Characteristics

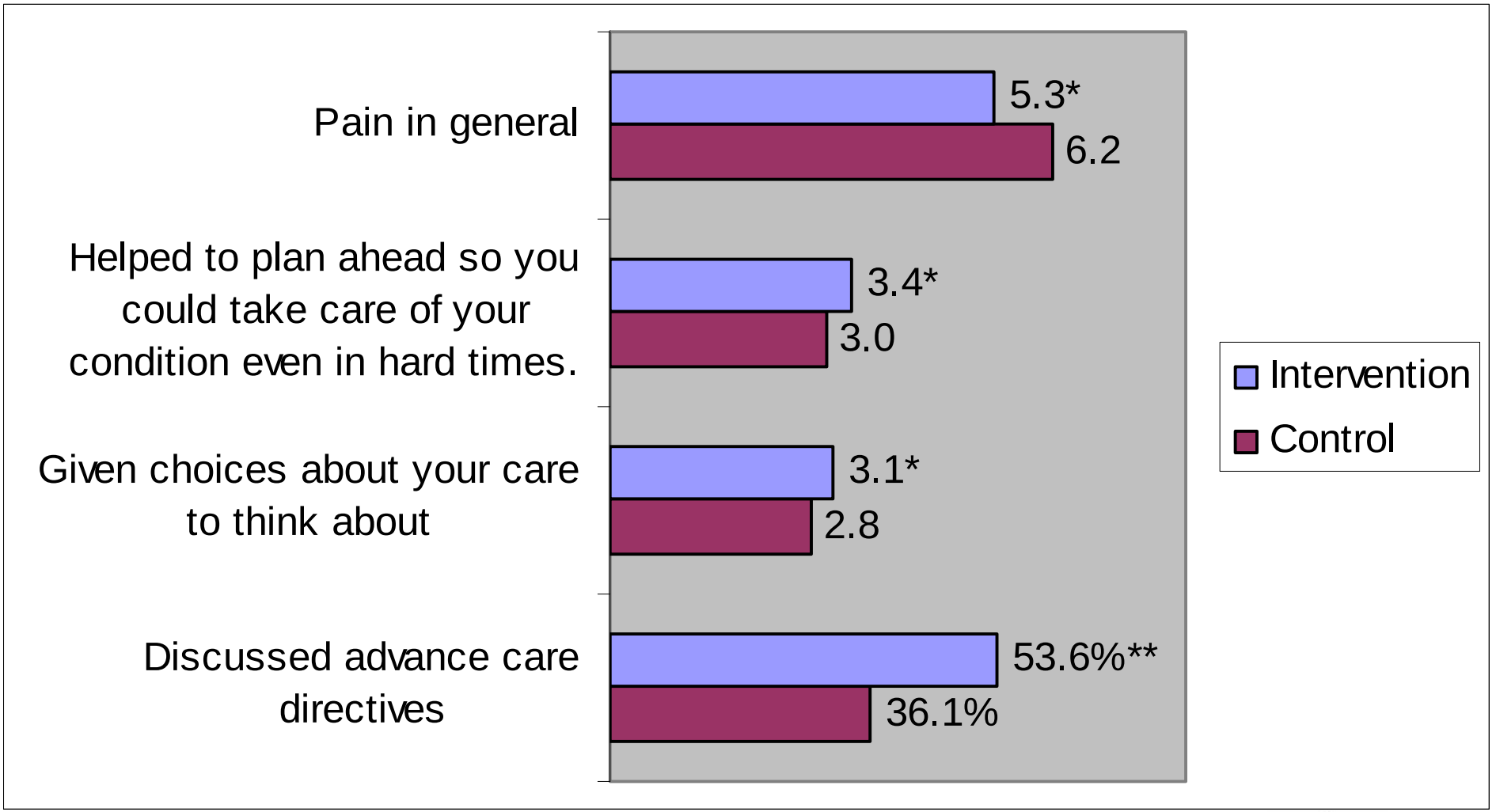
	Control	Intervention
Life Expectancy Less than 6 Months, % (N)	47.9 (310)	46.5 (N=219)
Poor Prognosis, , % (N)	82.9 (N=524)	90.1 (N=411)
# of Comorbidities (range 0-5), mean (SD)	4.3 (0.9)	4.3 (0.9)
# of Meds at Admission, mean (SD)	8.3 (4.1)	8.6 (4.2)
Recent regimen Change , % (N)	57.2 (N=370)	65.0 (N=306)
# ADL & IADL Assist. Needed (range 0-14), mean (SD)	10.3 (2.7)	10.2 (2.5)
Dyspnea None or mild , % (N)	26.6 (N=172)	21.0 (N=99)
Dyspnea Moderate , % (N)	18.2 (N=118)	31.0 (N=146)
Dyspnea Severe , % (N)	22.9 (N=148)	21.0 (N=99)
Pain Interferes with Daily Activities , % (N)	51.2 (N=331)	57.8 (N=272)
Primary End-Stage Dx with Severity of 3 or Greater, % (N)**		
Cancer , % (N)	28.1 (N=182)	31.4 (N=148)
CHF , % (N)	13.8 (N=89)	13.6 (N=64)
COPD , % (N)	9.1 (N=59)	12.1 (N=57)
Other End-Stage Disease , % (N)	19.2 (N=124)	14.0 (N=66)

Patient Outcomes: Summary of Findings

- AIM had positive effect on symptoms, care involvement & planning:
  - Better pain control (no difference re shortness of breath)
  - Greater likelihood of care involvement
  - Greater discussion of Advanced Directives (ADs)
  - Significantly more documented ADs, health proxies and living wills
- AIM was associated with
  - Significantly higher LOS in home care
  - No significant increase in hospice referrals or admissions
  - No significant reduction in ED use
- AIM patients had significantly higher probability of hospitalization by 90 days; no significant difference in time to hospitalization
- AIM did not significantly affect use or volume of nurse visits; AIM patients were less likely to have physical therapy
- AIM was not a cost effective vehicle for increasing hospice use or reducing hospitalization

Patient Survey Findings+

Survey completed by 257 AIM-eligible clients from Queens: Intervention (n=107); Control (n=150)



Pain scale 1-10; other scales 1-5

*+All results case mix adjusted for demographic and clinical characteristics; *p <0.10; **p <0.05*

Chart Review for Advance Directives (N=226)

	Control* (N=132)	Intervention* (N=94)	Case Mix Adjusted Odds Ratio	p-value
Documented Health Care Proxy	29.6%	52.1%	2.89	0.0006
Documented Living Will	6.1%	16.0%	3.20	0.0202
Documented Power of Attorney	10.6%	16.0%	1.51	0.3391
Any Documented Advance Directive	31.1%	53.2%	2.88	0.0007
Other End-of-Life Issues Discussed	22.7%	21.3%	0.78	0.4822

**Unadjusted percentages*

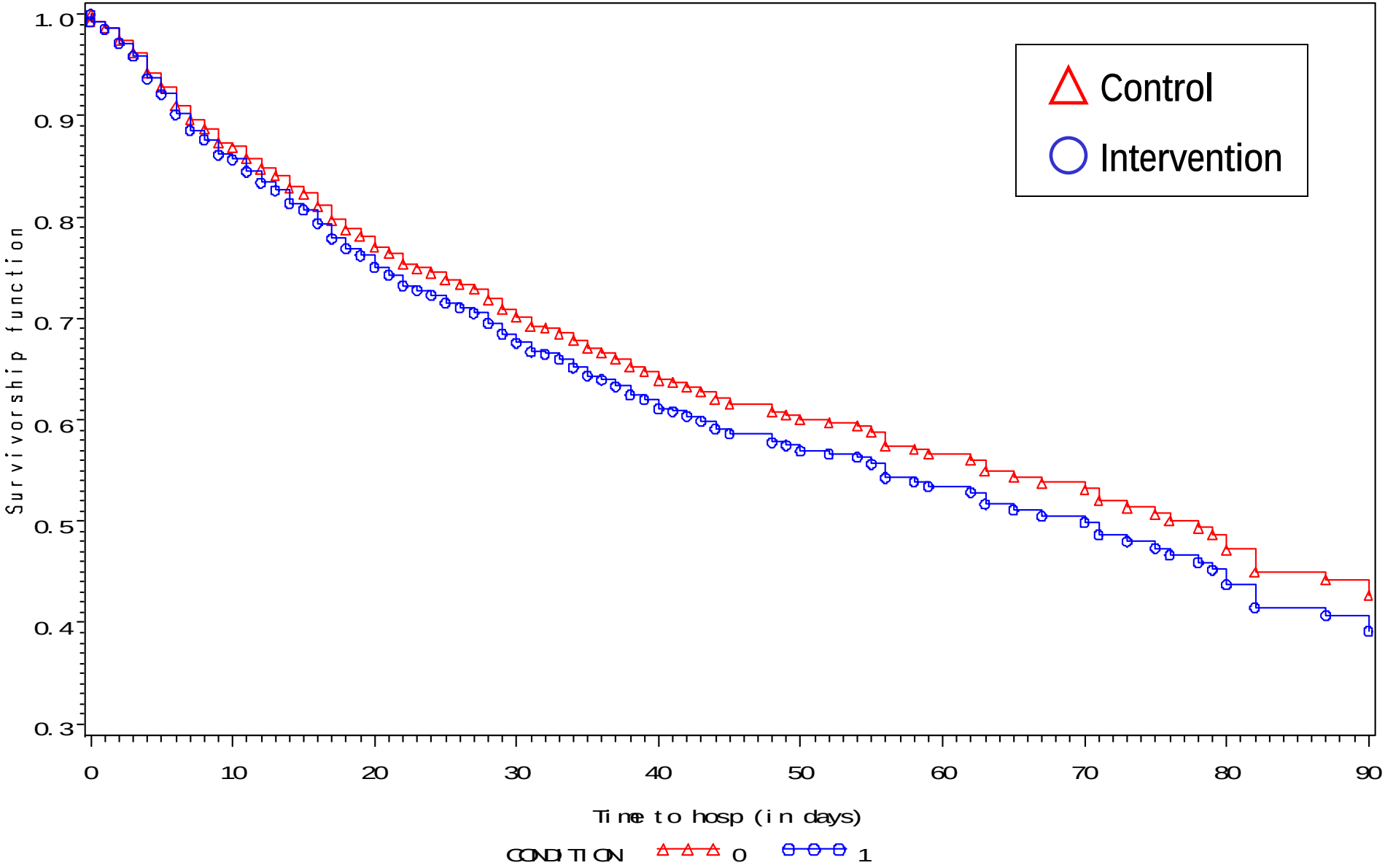
Intent-to-Treat Outcomes

	Control* (n=647)	Intervention* (n=471)	Case Mix Adjusted Odds Ratio / Parameter Estimate	p-value
Home Health LOS	47.7 days	55.5 days	6.40	0.0407
Referral to Hospice	20.3%	26.5%	1.30	0.2522
Admission to Hospice	6.3%	8.5%	1.22	0.4514
90 Hospitalization (Any)	27.7%	36.1%	1.40	0.0191
90 Day ED Use (Any)	21.3%	27.4%	1.25	0.2893
*Nursing^*	98.5%	99.8%	ns	ns
*Physical Therapy^*	65.2%	59.4%	0.73	0.0233
*Social Work^*	29.0%	27.7%	0.99	0.9729
*Home Health Aide^*	48.3%	46.4%	0.88	0.5494

**Unadjusted mean and percentages*

^Likelihood of at least one Nursing, PT, Social Work or HHA visit

*Estimated Survival Graph for Time to 1st Hospitalization by Study Group**



**Adjusted for age, sex, language, race, primary diagnosis, prognosis, life expectancy, pain, dyspnea, referral source, regimen change and living alone*

Study Limitations: Methodological

- Imperfect targeting
  - Algorithm based on expert consensus and face validity
- Randomization by team
  - Team Case Mix variation
- Case mix adjustment
  - Potential unmeasured variation – inadequate adjustment for severity among AIM teams
- Right censoring
- Potential contamination – agency wide emphasis on referring "right" patients to "right" program

AIM: Challenges

Systems:

- Reaching “short-stay” patients covered by managed care
- Initiating & implementing individualized AIM plan before patients cycle back to the hospital
- Enlisting the support of families & primary care physicians
- Initiating advance care discussions “upstream” in illness

Resources:

- Achieving “comfort level” among clinicians in discussing AI
- Adjusting productivity standards for Clinical Resource Nurses

Policies:

- Establishing a firm mechanism to pay for APNs
- Addressing “externalities”

Implications

Strategies to promote effective advanced illness management:

Systems:

- Increase collaboration/communication with:
  - Managed care companies to initiate earlier planning & reach short stay patients
  - Hospitals to achieve more stable hospital discharges
  - Physicians to better manage care at home and broach palliative care

Resources:

- Adjust internal productivity standards for Clinical Resource Nurses
- Intensify and extend training/mentoring of CRNs & home care clinicians

Policy:

- Develop a “palliative care” benefit for home care as for nursing homes
- Address financial incentives/externalities

Research:

- Develop and test new targeting algorithm
- Refine and test new/modified advanced illness management interventions
- Test NP-driven “health care home”