# A Palliative Nurse Practitioner Intervention to Improve Advance Care Planning and Supportive Care in Patients with Advanced Cancer

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## Background

The simultaneous care model for palliative care provides high quality care for patients with serious illness. Unfortunately, the U.S. healthcare system falls short of this goal, even in patients with advanced cancer. As the first phase of a system-wide advance care planning program, we used implementation science methods to test if a nurse practitioner (NP) with structured palliative care training using evidence-based principles of communication and a model that cultivates prognostic awareness with palliative care physician oversight can improve the quality of care provided to patients with advanced cancer in an academic health system.

## Intervention

Patients with advanced cancer were identified from the electronic health record (EHR) based on oncology visits and treatments and using free text analysis of oncology notes and imaging. An NP was integrated into the clinic of two oncologists with the goal of seeing patients with incurable disease soon after presentation and then following patients in continuity. The oncologist documented prognosis and provided a warm handoff in referring the patient to the NP. Based on standardized assessments administered by the NP, patients were linked into resources for psychosocial support and symptoms were addressed. The NP focused on goals of care and valued future health states in advance care planning.

## Evaluation

We used EHR data to create a quality improvement dashboard for patients with advanced cancer with the following metrics:

- Referral for psychosocial support
- Any form of advance care planning performed (AD, POLST, and/or Goals of Care Note)
- Palliative care referral
- Hospice referral among decedents
- Hospital use in last 30 days of life
- ICU use in last 30 days of life

The intervention was evaluated among patients with advanced cancer seen by the two target oncologists compared to all other advance cancer patients in clinics without the NP intervention after one year of beginning the pilot program.

## Results

Of 10,228 patients with active cancer, 2535 patients had advanced cancer and were treated by 39 oncologists. Advance care planning and referrals for psychosocial support increased for patients of the two intervention oncologists compared to patients of the other oncologists (see Table). Hospice referral before death was not different between the two groups at baseline, but was significantly higher for patients of intervention oncologists compared to patients of control oncologists (53% v. 23%, p=0.02) over the first year of follow-up.

## Results

Table: Comparing Pilot Oncology Clinic Patients to Control Oncology Clinic Patients**

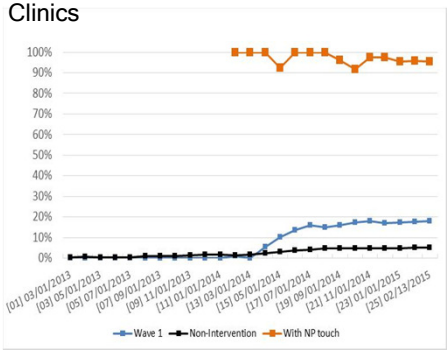
| | Control (35 oncology clinics) | Pilot (2 embedded oncology clinics) | NP Touch Only |
|---|---|---|---|
| **Baseline/Pre-intervention** | | | |
| Referral for psychosocial support* | 3.0% | 8.7% | N/A |
| Advance care planning performed | 20% | 12.6% | N/A |
| Goals of care note completed | 1.5% | 1.0% | N/A |
| Palliative care referral | 2.4% | 1.8% | N/A |
| Hospice referral | 8.5% | 20% | N/A |
| Hospital use last 30 days of life | 61.9% | 80% | N/A |
| Hospital use per decedent last 30 days of life, mean | 6.4 days | 8.1 days | |
| ICU use last 30 days of life | 34.7% | 60% | N/A |
| ICU use per decedent last 30 days of life, mean | 2.0 | 2.1 | |
| **Intervention Period** | | | |
| Referral for psychosocial support*+ | 16.2% | 45.5% | 65.9% |
| Advance care planning performed*+ | 16.9% | 29.5% | 95.5% |
| Goals of care note completed*+ | 5.0% | 17.9% | 95.5% |
| Palliative care referral*+ | 2.8% | 13.3% | 100% |
| Hospice referral during intervention*+ | 23% | 52.9% (P=0.02) | 84.6% |
| Hospital use last 30 days of life (ever) | 44.0% | 58.8% | 69.2% |
| Average hospital use per decedent last 30 days of life | 4.1 days | 4.3 days | 5.2 days |
| ICU use last 30 days of life (ever) | 14.1% | 11.8% | 7.7% |
| Average ICU use per decedent last 30 days of life | 0.6 | 0.3 | 0.2 |

*P value <0.05 comparing Control vs. Pilot

+P value <0.05 comparing Control vs. NP Touch Only

**Decedents in pilot group pre N=5 and post N=17, Decedents in control group pre n=118, post n=248

Goals of Care Note Completion in NP intervention clinics compared to Control Clinics




## Discussion

• This embedded NP-based model of advance care planning and palliative care delivery within an oncologist clinic improves advance care planning and early results suggest better end of life care as evidenced by increase in hospice enrollment.

•Future work should measure patient and family satisfaction with care as an additional outcome.

•Improved payment models are needed to help sustain and grow programs of outpatient palliative care delivery.

## Conclusion

Innovative clinical models and continuous quality improvement efforts can be used to improve concurrent palliative care within oncology clinics.

## Contact

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