

## Background

- Improving care coordination between providers and patients can aid in improving quality of care by facilitating beneficial, efficient, safe, and high-quality patient experiences.
- Cancer patients with diabetes require high levels of care coordination between specialists, Patient Centers Medical Home's, and PCMH's to ensure optimal outcomes.
- Clark (2007) found that diabetic patients who received diabetes education felt the most empowered with diabetes self-management.
- According to O'Malley and Cunningham (2008), communication between the specialists and the PCP is not felt to "always" be apparent to the patient.
- Peikes et al. (2009) reported that to date, there have been very few programs that have shown effective care coordination methods.

## Aims/Objectives

- **Primary objective:** Measure reduction of emergency department (ED), observation, and hospital admissions for cancer patients with diabetes who were seen by the DOP.
- **Secondary objectives:** Evaluation of patient satisfaction with care coordination and patient empowerment with diabetes self-management for the patients who were seen by the DOP.

## Theoretical Framework

**Social Cognitive Theory:** Dr. Albert Bandura

- Factors influencing self-efficacy: Behavioral, Environmental, Cognitive
- Self-efficacy enhancement is often a goal in interventions designed to change individual health related behaviors.

## Challenges/Limitations

- Post-program survey sample size is small.
- Due to the descriptive nature of the study design, this is not generalizable to other populations.
- Comparison data is limited to one hospital institution.

## Methodology

- **The Diabetes Oncology Program (DOP):** Developed as an integrated model of care for oncology patients with diabetes.
- **Key program elements:** Expeditious access to care, enhanced care coordination and communication, diabetic self-management education conducted by a certified diabetic educator, and medical co-management provided by a CRNP.
- **Setting:** 900 bed community hospital.
- **Design:** Descriptive design
- **Sample:** Cancer patients with diabetes under active treatment. Active treatment defined as chemotherapy or radiation.
  - Comparison group for admission data only ( $n = 383$ )
  - DOP: ( $n = 98$ )
  - (Enrolled 10/1/12-5/13/13)
- **Data collection:**
  - Claims data were used to evaluate diabetes related ED, observation and hospital admissions (Top 3 diabetes-related discharge codes).
  - Pre-program/Post-program surveys were administered to assess satisfaction and diabetes empowerment.
    - Primary Care Assessment Survey: Measured patient satisfaction with care coordination.
    - Diabetes Satisfaction Treatment Questionnaire: Measured patient satisfaction with diabetes treatment and perceptive frequency of blood glucose control.
    - Diabetes Empowerment Scale: Measured empowerment with diabetes management.
    - Function Assessment of Cancer Treatment (FACT-G): Assessed patients quality of life in realms of physical well-being (PWB), social well-being (SWB), emotional well-being (EWB), and functional well-being (FWB) for the DOP patients.

## Practice Recommendations

- Future research should be explored relating to alternative healthcare delivery models lead by Advanced Practice Nurses, with interventions aimed at improved care coordination, patient satisfaction, and diabetes empowerment.
- This study should be redesigned and implemented in a randomized control design with a larger population.
- The program evaluation data and lessons learned from this study will be shared to assist other centers in improving care for cancer patients with diabetes.

## Results

- Admissions: 3.4% reduction in potentially avoidable ED, observation, or hospital admissions in the DOP group.

*Results from the Primary Care Assessment Survey*

Group	n	Mean	SD	Minimum	Maximum
Pre-Program	51	79.74	20.41	23.33	100.00
Post-Program	18	86.00	17.71	33.33	100.00

*Note.* Score range is 0 to 100. A higher score indicated a higher level of satisfaction.

*Results from the Diabetes Treatment Satisfaction Questionnaire*

Group	n	Mean	Median	Mode	SD
Pre-Program	77	4.94	5.17	6.0	1.17
Post-Program	20	5.38	5.67	6.0	0.79

*Note.* The total satisfaction score was calculated with an average of the variable imputed into missing values.

*Acceptability of High and Low Blood Sugars*

Group	Pre-Program n	%	Post-Program n	%
Acceptably High Score	1	8	2	10
	2	5	2	10
	3	15	7	35
	4	9	5	25
	5	12	4	20
	6	9	11.7	6
Acceptably Low Score	1	4	14	70
	2	1	3	15
	3	3	2	10
	4	7	1	5.0
	5	12	0	0.0
	6	34	44.2	0

*Note.* Scoring is one to six. One is "none of the time" and six is "most of the time".

*Results from the Diabetes Empowerment Scale*

Group	n	Mean	Median	Mode	SD
Pre-Program	49	4.04	4.13	4.5	.73
Post-Program	20	4.59	4.86	5.0	.63

*Note.* Score range is 1 to 5. A higher score indicated a higher level of empowerment.

*FACT-G Quality of Life Results*

Subscales	Program Group (n = 52)		Normative Data (n = 2236)	
	M	SD	M	SD
PWB	20.2	6.60	21.3	6.0
SWB	22.7	5.47	22.1	5.3
EWB	18.1	4.51	18.7	4.5
FWB	16.4	7.14	18.9	6.8
FACT-G Total Score	77.3	18.63	80.9	17.0

*Note.* Source of normative data was from Brucker et al. 2005.