Rhode Island Certified Diabetes Outpatient Educators: Summary of encounters 2005-2010

Certified Diabetes Outpatient Education

The Certified Diabetes Outpatient Education (CDOE) program is an integral part of the RI Diabetes Control and Prevention Program (RIDPCP) in helping decrease the prevalence and adverse outcomes of diabetes. The program is made up of registered nurses, dietitians and pharmacists who are extensively trained to provide self-management education and training to people diagnosed with diabetes or pre-diabetes. The CDOE mission is to support the growth and development of excellent and innovative diabetes outpatient educators by using a collaborative model for effective learning.

Methods and Analysis

This document reports CDOE-related data that have been collected yearly from 2005 – 2010. The 2011 data have been collected but have not yet been analyzed. The data consists of one record per encounter and includes educator and site information in addition to patient specific information related to type of diabetes, insurance, type of education, sex, ethnicity, race, age, source and recipient of referral. Seven months and 4 months of data were collected in 2005 and 2006 respectively and 3 months of data have been collected for the remaining years.

Data regarding each educational encounter were collected from CDOEs on a paper form. Each CDOE faxed, mailed, or emailed the completed forms to the DOE coordinator at the RI Department of Health. CDOEs who did not have patient encounters in a particular month were asked to return the form indicating zero encounters.

Microsoft Access was used to input and process the data. Brown research assistants, Johnson and Wales interns, and CDC public health specialists sorted and entered the data electronically. In order to ensure the ability to check data, every 5^{th} observation was given an ID number on the form, which matched with the corresponding ID number electronically. For

analysis, the data was exported to Microsoft Excel. Analysis included percent of encounters by patient demographics, insurance type, and diabetes type. Analysis by *patient* was not possible since patient identifiers that could be used to account for multiple encounters per patient are not collected.

Encounters per year were calculated by multiplying the number of encounters by the time period collected (e.g. in 2007 – 2010, the number of encounters were multiplied by 4 since data were collected for one quarter of the year). CDOE encounters per year per 100 RI adults with diabetes were calculated using the estimated numbers of RI adults with diagnosed diabetes from the RI Behavioral Risk Factor Surveillance System. For example in 2009, there were an estimated 62,000 RI adults with diagnosed diabetes.

In order to normalize the denominator and generate a more comparable number of encounters over the 5-year period, the percentage of CDOE forms returned was taken into account. Under the assumption that the number of encounters per CDOE not providing data is the same for the CDOEs who do provide data, the number of encounters per CDOE per year was calculated.

Results

Table 1 describes an overall picture of patient encounters with CDOEs. In order to have maximum impact on the RI diabetic population, it is important to ensure that state programs have wide reach in the population. The number of encounters has fluctuated with the number of months of data collection, but has been on the rise from 2007 through 2010. The estimated number of encounters was almost 10,000 in 2010. There has been an overall increase in the number of DOE encounters per diabetic population from 2005 to 2010. This may reflect both an increase in the number of active CDOEs (from 175 in 2005 to 217 in 2010) and the percentage of

CDOEs providing data from 40% in 2005 to 75% in 2010. The normalized encounters per year has varied across years but overall has increased from 23,200 in 2005 to 25,900 in 2010.

In 2010, 162 out of 217 or 75% of active CDOEs provided data. Among these 162, the range of encounters from April-June was 0-198 encounters (average:30, median 17). One quarter (24%) of CDOEs who returned forms had zero encounters in the three-month data collection period.

Table 1. Encounters between CDOEs and diabetes patients

	2005	**2006**	**2007**	**2008**	**2009**	**2010**
Number of Encounters	5409	2465	1881	3127	3359	4834
Number of Encounters/Year	9272	7365	7524	12508	13436	19336
CDOE encounters per year per 100 RI adults with diagnosed diabetes	15.0	12.3	12.5	20.2	21.7	31.2
Information Analyzed	Jan-July (7 months)	Mar-June (4 months)	April-June (3 months)	April-June (3 months)	April-June (3 months)	April-June (3 months)
Number of CDOEs Returning Patient Aggregate Form	70/175 (40%)	55/177 (31%)	47/160 (29%)	127/203 (63%)	124/189 (66%)	162/217 (75%)
Normalized number of encounters per year	23200	23800	25900	20000	20500	25900

One of the goals of the DOE program is to address disparities and ensure that minority populations are receiving outpatient diabetes education. The percentage of encounters where the patient identified as Hispanic had increased by 10% in the year 2006, but this increase was not sustained for the rest of the years. Approximately 73-84% of encounters are with individuals who identify as White, 5-7% are with individuals who identify as Black, 1-2% are with individuals who identify as Asian, 3-15% are with individuals who identify as some other race

and 6-8% of encounters had no information on the patient's race. There has been no discernable trend in the race or ethnicity of patients seen from 2005 – 2010. (Table 2).

Table 2. Ethnicity and race of CDOE encounter patients

	2005	2006*	2007*	2008	2009	2010
Ethnicity						
Hispanic/Latino	12%	21%	9%	13%	9%	12%
Not Hispanic/Latino	68%	60%	62%	69%	70%	63%
Don't know/R/NI	20%	19%	30%	18%	21%	25%
Race						
White	84%	73%	84%	76%	78%	79%
Black/African American	6%	5%	6%	8%	7%	7%
Asian	2%	2%	1%	2%	1%	1%
Other Race	3%	16%	6%	8%	4%	5%
Don't Know/R/NI	5%	5%	3%	6%	10%	8%

*Total do not add up to 100% due to rounding

The percentage of encounters with male patients has increased from 34% in 2005 to 44% in 2010. The number of encounters among patients who are 30-49 years old has decreased from 2005 to 2010. Apart from this there are no discernable age trends. (Table 3).

Table 3. Gender and age of CDOE encounter patients 2005- 2010

	2005*	2006	2007	2008*	2009	2010
Gender						
Male	34%	39%	37%	39%	42%	44%
Female	66%	61%	63%	61%	57%	56%
Age						
Less than 1 (Invalid)	0%	0%	1%	2%	4%	0%
1 – 14 years	1%	2%	0%	3%	4%	3%
15 – 29 years	9%	9%	10%	8%	8%	7%
30 – 49 years	33%	29%	28%	25%	21%	23%
50 – 64 years	31%	32%	34%	37%	35%	37%
65 – 84 years	27%	26%	25%	24%	27%	29%
Greater than 84 years	1%	2%	2%	2%	1%	1%

*Total of percentage for age do not add up to 100% due to rounding

The percentage of CDOE encounters for Type 1, Type2, and pre-diabetes have all increased from 2005 to 2010. There has been a dramatic 68% decrease in the proportion of encounters where the patient has gestational diabetes (from 20% in 2005 to 7% in 2010).

Table 4. Type of diabetes of patients seen by CDOEs

Type of Diabetes	2005*	2006*	2007*	2008	2009	2010*
Type 1	7%	8%	6%	8%	10%	9%
Type 2	71%	77%	76%	77%	76%	79%
Pre-Diabetes	2%	2%	4%	4%	7%	4%
Gestational Diabetes	20%	13%	15%	10%	6%	7%
Other/R/NI/DK	1%	1%	0%	1%	1%	2%

*Totals do not add up to 100% due to rounding

Although the proportion of individual encounters has decreased since 2005, they remain the vast majority of encounter types. In 2010, 72% of encounters were individual, 20% were group encounters and 8% had no information on encounter type. Ten encounters in 2009 and 8 encounters in 2010 were with TEAMWorks. Due to rounding, Table 5 shows 0%.

Table 5. Types of education administered by CDOE to diabetes patients

Type of Education	2005	2006*	2007	2008	2009	2010
Individual	77%	85%	82%	78%	76%	72%
Group	16%	11%	11%	18%	18%	20%
TEAMWorks	n/a	n/a	n/a	n/a	0%	0%
No Information	7%	3%	7%	4%	6%	8%

*Total does not add up to100% due to rounding

There were no discernable trends observed among different sources of insurance coverage other than the percent of encounters among patients with no insurance increasing from 1% in 2005 to 7% in 2010.

Table 6. Insurance coverage of patients seen by CDOEs

Insurance Coverage	2005	2006*	2007*	2008	2009*	2010
Blue Cross/Blue Shield	45%	36%	42%	41%	41%	37%
United Health Plan	15%	17%	19%	13%	14%	15%
Neighborhood Health Plan	4%	4%	3%	5%	7%	5%
Medicare	17%	21%	17%	21%	20%	20%
Medicaid	n/a	n/a	n/a	5%	3%	4%
Another Commercial Plan	6%	11%	7%	5%	10%	8%
Other non-Commercial Plan	10%	8%	11%	1%	0%	0%
No Insurance Coverage	1%	1%	2%	4%	3%	7%
VA	0%	0%	0%	3%	2%	2%
No Information	2%	3%	1%	2%	1%	2%

*Totals do not add up to 100% due to rounding

Conclusion

The CDOE program is a vital part of the DPCP. This report supports continued efforts to address increasing encounters with minority patients and patients with pre-diabetes and gestational diabetes.

Acknowlegement: We would like to thank the many Certified Diabetes Outpatient Educators who provided data for this report by completeing and returning the CDOE Aggregate Data Forms.

The publication was supported by CDC Cooperative Agreement Number 5U58DP001988. Its contents are solely the resposibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

Prepared by Annie Gjelsvik, Harman Dhatt and Lena Giang

Version 2011/ Updated September 2011

Diabetes Prevention and Control Program

HEALTH Information Line 401-222-5913 / RI Relay 711 · www.health.ri.gov