

Updated Assessment of The WI ETF Diabetes VBID Programs

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01/2025

Background

Assessment of VBID program managed by Navitus/WebMD:

- focused on diabetes management by reducing/eliminating member cost share for diabetes prescription drugs

Assessment of VBID program based on:

- Member engagement in diabetes and general preventive care
- Adherence to recommended care
- Cost of care trends
- Diabetes disease stage transition trends
- Preliminary financial (ROI) analysis



Analytic Parameters

Time Periods (4 years):

- Baseline/Assessment start year : 2020 (this year was selected because there are more participants and data for analysis than in the 2019 program start year)
- Evaluated through 2023

Eligible

- Continuously enrolled in GHIP as:
 - Relationship: Employee, Spouse
 - Non-HDHP members
- Episode of diabetes and filled diabetes prescription with Navitus
- Exclude members in other (Dean Living Healthy Plus (LHP)) VBID program

Participating (**Study Group**)

- Eligible Requirements +
- In VBID program for reduced cost diabetes drugs for **each** of 2020 – 2023

Not Participating (**Control Group**)

- Eligible Requirements +
- Did not enroll in reduced diabetes drugs program in **any** of years 2020 – 2023



Summary Assessment

There is some evidence that the VBID program subsidizing the cost of diabetes prescription drugs results in the following among participating members:

- better member engagement, indicated by a higher rate of preventive visits related to the evaluation and management of diabetes
- reduction in unplanned utilization of services such as emergency room and hospitalizations
- improved adherence to recommended diabetes medication, supported by reduced member cost share
 - lower positive trends in cost of medical services and and prescription drugs for diabetes, especially the cost for medical care - marked increases in medical cost for diabetes are usually associated with transitions to the more advanced stages of the condition, indication of potential for improved management
- ROI is negative in 2021, but positive in subsequent 2022 and 2023 - increased utilization in the subsequent years indicated by higher per participant discounts

The best opportunities for intervention are reduction of the transitions from the very early onset of diabetes to later stages through:

- adherence to recommendations for prescription drugs
- lifestyle changes
- improved complex care coordination



VBID Participation Trends

Constraints imposed on eligible members in both the study and control groups include:

- must be enrolled in GHIP all through the evaluation period
- must have at least one episode of diabetes in each of the four years of evaluation
 - filling Rx alone does not trigger start of an episode
- exclude members also participating in other VBID programs (Dean LHP) in the same period
- select subset of control group with relevant attributes similar to study group

Criteria	Study Group	Control Group
Listed as (Non) Participant in <i>any of</i> 2020 – 2023	1,941	24,872
Listed as (Non) Participant in <i>each of</i> 2020 – 2023	368	10,209
Meets Inclusion Criteria : Continuously enrolled, Non-HDHP, Member/Spouse, Episodes of Diabetes (Exclude members in other Dean VBID program)	203	4,100
Matched by Demographics, Benefit Types, Risk Category and Diabetes Disease Stage	203	406

VBID Assessment – Population Matching

- Matching by multiple demographic and *risk categories using 2020 data, resulting in good match between the study and control groups for:
 - gender and average age
 - risk categories

Distribution of Gender and Ages (2020)

	Study Group			Control Group			Matched Control Group		
	Members	Ave. Age (Yrs)	% of Group	Members	Ave. Age (Yrs)	% of Group	Members	Ave. Age (Yrs)	% of Group
Female	95	63.5	46.8%	1,806	63.1	44.0%	190	64.2	46.8%
Male	108	65.1	53.2%	2,294	63.8	56.0%	216	65.1	53.2%
Aggregate	203	64.4		4,100	63.5		406		

Distribution of Risk Categories* (2020)

	Study Group		Control Group		Matched Control Group	
	Members	% of Group	Members	% of Group	Members	% of Group
Healthy	1	0.5%	47	1.1%	2	0.5%
Stable	13	6.4%	194	4.7%	26	6.4%
At Risk	49	24.1%	1,149	28.0%	98	24.1%
Struggling	104	51.2%	1,874	45.7%	208	51.2%
In Crisis	36	17.7%	836	20.4%	72	17.7%
Aggregate	203		4,100		406	

*Merative’s risk categories, indication of the expected relative cost risk of a patient, ordered from low to high as follows:

{Healthy, Stable, At Risk, Struggling, In Crisis}

VBID Assessment – Population Matching

- Members in the study and control groups are also matched across other eligibility dimensions to improve comparability of outcomes between the two groups
- the distribution of the member Medicare status in both groups was similar prior to matching
- the proportion of members by ETF plan types are matched exactly in the control group

Distribution of Members by Medicare Status (2020)

	Study Group		Control Group		Matched Control Group	
	Members	% of Group	Members	% of Group	Members	% of Group
Non-Medicare	108	53.2%	2,182	53.2%	216	53.2%
Medicare	95	46.8%	1,918	46.8%	190	46.8%
Aggregate	203		4,100		406	

Distribution of Members ETF Plan Types (2020)

	Study Group		Control Group		Matched Control Group	
	Members	% of Group	Members	% of Group	Members	% of Group
IYC Health Plan	94	46.3%	1,893	46.2%	188	46.3%
IYC Medicare	51	25.1%	1,241	30.3%	102	25.1%
Medicare Advantage	49	19.7%	1,149	14.5%	98	19.7%
Medicare Plus	17	8.4%	347	8.5%	34	8.4%
Access Plan	1	0.5%	25	0.6%	2	0.5%
Aggregate	203		4,100		406	

VBID Assessment – Population Matching

- Members in the study and control groups are matched by the severity of their diabetes condition using Merative’s disease staging as a proxy:
 - establishes a similar distribution of members by disease stages at baseline
 - supports tracking of disease progression

Distribution of Diabetes Disease Stages* (2020)

	Study Group		Control Group		Matched Control Group	
	Member	% of Group	Member	% of Group	Member	% of Group
Stage 0-1	67	33.0%	1,268	30.9%	134	33.0%
Stage 2	126	62.1%	2,672	65.2%	252	62.1%
Stage 3	10	4.9%	160	3.9%	20	4.9%
Aggregate	203		4,100		406	

*Merative’s disease staging methodology groups conditions from early onset (stages 0-1) to later stages where the condition is advanced and typically accompanied by multiple complications (stage 3)

VBID Assessment – Patient Engagement (Preventive Care)

The reported measures show comparable or better engagement by the study group members in general:

- similar comprehensive preventive visits rates
- lower office visit rates – while office visits are generally preferable to unplanned visits e.g. ER, they may not be the most efficient use of resources if they are not proactive preventive encounters
- higher rates for preventive specific diabetes utilization
 - generally lower rates in 2020 is a result of the disruption in services due to the COVID 19 pandemic

	Study Group				Matched Control Group			
	2020	2021	2022	2023	2020	2021	2022	2023
Diabetes Patients	203				406			
Preventive Adult Care Visit Per Patient*	0.50	0.46	0.56	0.47	0.43	0.48	0.49	0.49
Office Visits for Diabetes Per Patient**	3.31	3.34	3.62	3.38	3.60	3.93	3.68	3.52
Diabetes Preventive Care Visit Per Patient***	2.59	2.74	2.83	2.85	2.57	2.76	2.55	2.68

* Initial or periodic comprehensive preventive medicine visits e.g., annual physical

** Office visits with a principal diagnosis of diabetes

*** Any outpatient evaluation and management primary care visit included in a diabetes episode of care

VBID Assessment – Patient Engagement (Quality Measures)

Based on HEDIS certified diabetes related measures, the study group is performing comparably or better than the control group in most cases:

- HbA1c values greater than 9% high for both groups, slight drops in rates for study group in 2023, indicating better management
- the eye exam rates are consistently >=10% higher for the study group
- adherence to recommendation for prescribed statin medication specifically, and all diabetes related drugs in general (not HEDIS) are higher among the study group, this may be a result of the Rx cost subsidy

Recommended urine test for proteins are comparable for both groups

	Study Group				Matched Control Group			
	2020	2021	2022	2023	2020	2021	2022	2023
Diabetes Patients	203				406			
HEDIS CDC Diabetes HbA1c > 9%*			99%	97%			98%	99%
HEDIS CDC Diabetes Eye Exam Rate**			73%	72%			63%	61%
HEDIS SPD Statin Adherence With Diabetes Rate***			87%	92%			89%	87%
PDC-DR All Class Diabetes [†]				95%				92%
Proteinuria Test Rate ¹	1.28	1.41	1.39	1.33	1.16	1.35	1.25	1.35

Healthcare Effectiveness Data and Information Set (HEDIS) (<https://www.ncqa.org/hedis/>)

* % of patients with HbA1c > 9%, lower is better

** % of patients with recommended eye exam to monitor and manage diabetes related retinopathy, higher is better

*** % of patients adhering to recommended use of prescribed statin medication, higher is better

Only HEDIS measures for 2022 and 2023 available in DAISI

[†]Individuals meeting the Proportion of Days (PDC) threshold of 80% for diabetes during the measurement period, run on a rolling year basis, only available for most of 2023

¹ Average number of urine protein test per diabetes patient, evidence-based measure of clinical performance

VBID Assessment – Patient Engagement (Unplanned Utilization)

- Higher utilization of ER and Inpatient services are usually indications of opportunities for improved condition management:
 - diabetes related ER visits and admissions are comparable or lower for the study group for all four years
- the episodes of care for diabetes complications are lower for the study group for all reported years

	Study Group				Matched Control Group			
	2020	2021	2022	2023	2020	2021	2022	2023
Diabetes Patients	203				406			
Diabetes Related ER Visits Per Patient*	0.01	0.00	0.02	0.02	0.02	0.04	0.03	0.02
Diabetes Related Admits Per Patient**	0.03	0.02	0.02	0.02	0.03	0.02	0.04	0.03
% of Diabetes Episodes due to Flare Ups***	3.4%	3.9%	3.9%	3.4%	4.7%	4.9%	4.7%	4.2%

* Average number of ER visits with principal diagnosis of diabetes

** Average number of acute admissions for diabetes

*** Average number of patients with acute complications episode of care

Note that these average rates should be interpreted in the context of the limited statistics in the study and control groups, for example, the 0.02 ER visits per patient rate in 2023 is equivalent to 5 and 10 visits for the study and control groups respectively

VBID Assessment – Diabetic Disease Stage Transitions

- Both the study and control groups show declines in the percentage of members in stage 1 of diabetes, but the decline was more rapid for the control group at -11.5%, compared to -7.4% in the study group
 - most of the decline in members from stage 1 in 2020 resulted in transition to stage 2 in 2023
- There is a marginal decrease in the representation of members in the critical stage 3 for both groups, slightly more decline in the study group (about -1.0%), compared to the control group (about -0.2%)

Study Group Transitions

	2020		2023		% Diff.
	Members	% of Group	Members	% of Group	
Stage 1	67	33.0%	52	25.6%	-7.4%
Stage 2	126	62.1%	143	70.4%	8.3%
Stage 3	10	4.9%	8	3.9%	-1.0%

Matched Control Group Transitions

	2020		2023		% Diff.
	Members	% of Group	Members	% of Group	
Stage 1	134	33.0%	87	21.4%	-11.5%
Stage 2	252	62.1%	300	73.9%	11.8%
Stage 3	20	4.9%	19	4.7%	-0.2%

VBID Assessment – Diabetic Disease Stage Transitions

The diabetes disease stage transitions from 2020 to 2023 indicate better management of the study compared to the matched control group:

- the VBID subsidy program is effective for preventing decline from the earlier *stage 1 – only 40.3% declined from stage 1 to later stages for the study group, compared to 52.2% for the control
 - 4 members representing about 1% of the control group declined from stage 1 to the most critical stage 3 between 2020 and 2023, no member of the study group made that transition
- the combination of improved or maintained disease stages for the study group (83.8%) is 2.7% higher than for the control group (81.1%)

Study Group Transitions

	2020	2023
Stage 1	67	40
Stage 2		27
Stage 3		

	2020	2023	Study Group Summary	
Stage 1		9	Maintain	75.4%
Stage 2	126	111	Improve	8.4%
Stage 3		6	Decline	16.3%

	2020	2023
Stage 1		3
Stage 2		5
Stage 3	10	2

Matched Control Group Transitions

	2020	2023
Stage 1	134	64
Stage 2		66
Stage 3		4

	2020	2023	Matched Control Group Summary	
Stage 1		20	Maintain	73.2%
Stage 2	252	225	Improve	7.9%
Stage 3		7	Decline	18.9%

	2020	2023
Stage 1		3
Stage 2		9
Stage 3	20	8

*corrected to reflect percentage of members originally in stage 1 instead of all members of the study or matched control groups

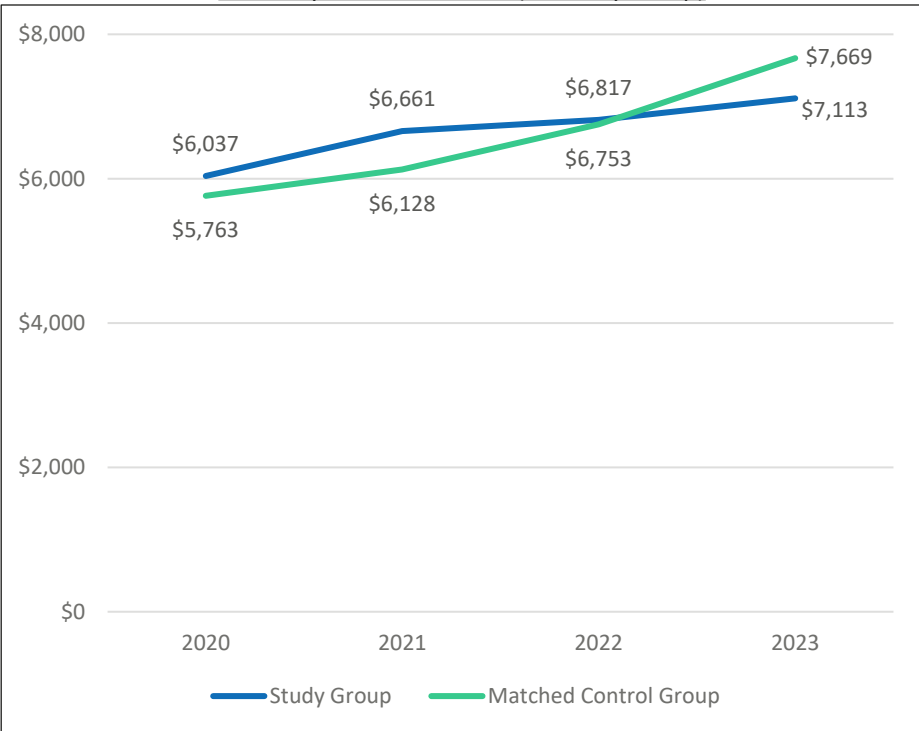
VBID Assessment – Diabetic Cost Trends

- 18.6% trend from 2020 - 2023 in out of pocket costs for diabetic prescription drugs for the study group, compared to 33.3% for the control group over the same period, reflecting the VBID cost subsidy – the Rx allowed amount cost increased by over 30% for both groups
- The trend in average per patient allowed amount cost is much higher for the control group, this is mostly driven by the average cost for the medical component of care, increasing at a much faster rate for the control group (43.6%) compared to the study group (7.4%), a possible indication of better management of diabetes in the study group

		Study Group					Matched Control Group				
		2020	2021	2022	2023	% Change 2020-2023	2020	2021	2022	2023	% Change 2020-2023
		203 (Diabetes Patients)					406 (Diabetes Patients)				
Out of Pocket Costs Per Member	Rx	\$176	\$165	\$199	\$209	18.6%	\$264	\$284	\$311	\$352	33.3%
	Med.	\$144	\$139	\$135	\$119	-17.1%	\$135	\$167	\$131	\$126	-6.5%
	Med. + Rx	\$320	\$305	\$334	\$328	2.6%	\$399	\$451	\$442	\$478	19.8%
Plan Paid (Net Payment) Per Member	Rx	\$4,067	\$4,226	\$4,404	\$4,781	17.6%	\$3,913	\$4,141	\$4,387	\$5,269	34.7%
	Med.	\$1,715	\$2,101	\$2,064	\$1,939	13.0%	\$1,850	\$1,987	\$2,367	\$2,400	29.7%
	Med. + Rx	\$5,782	\$6,326	\$6,469	\$6,720	16.2%	\$5,763	\$6,128	\$6,753	\$7,669	33.1%
Third Party (e.g. Medicare Payment) Per Member	Rx	\$1,997	\$2,437	\$2,784	\$3,240	62.2%	\$1,662	\$2,014	\$2,315	\$2,717	63.5%
	Med.	\$353	\$863	\$402	\$314	-11.0%	\$398	\$310	\$921	\$979	145.7%
	Med. + Rx	\$2,351	\$3,300	\$3,186	\$3,553	51.1%	\$2,062	\$2,324	\$3,239	\$3,699	79.4%
Total (Allowed Amount) Per Member	Rx	\$6,230	\$6,828	\$7,386	\$8,230	32.1%	\$5,833	\$6,437	\$7,004	\$8,328	42.8%
	Med.	\$2,209	\$3,100	\$2,605	\$2,372	7.4%	\$2,378	\$2,463	\$3,420	\$3,416	43.6%
	Med. + Rx	\$8,439	\$9,928	\$9,992	\$10,602	25.6%	\$8,211	\$8,899	\$10,424	\$11,744	43.0%

VBID Preliminary Financial Assessment

Average Diabetic Cost Trends for Study and Matched Control Group Average Cost = Net Payment + VBID Cost (for Study Group)



		2020	2021	2022	2023
Study Group	Average Net Payment	\$5,782	\$6,326	\$6,469	\$6,720
	Average VBID Discount	\$255	\$335	\$348	\$393
	Average cost	\$6,037	\$6,661	\$6,817	\$7,113
	Diff. from Prev. Year		\$624	\$156	\$296
Matched Control Group					
Matched Control Group	Average Cost	\$5,763	\$6,128	\$6,753	\$7,669
	Diff. from Prev. Year		\$365	\$625	\$916
Difference of difference			\$259	\$470	\$619
ROI			-22.7%	35.0%	57.6%

Using a "Difference in differences"^{1,2} approach for the financial assessment of the VBID program shows a negative ROI in 2021 and positive ROI in 2022 and 2023 – increased engagement in the subsequent years indicated by higher per participant discounts

1. <https://theeffectbook.net/ch-DifferenceinDifference.html>
 2. https://en.wikipedia.org/wiki/Difference_in_differences

Appendix: Cost of Diabetes by Disease Stages

The primary cost drivers for managing diabetes vary by disease stages:

- Rx are higher than medical costs in the earlier stages and increase the most from stage 1 -> 2 (91%), an indication of higher utilization of drugs to manage the condition
- medical costs increase by a marked (852%) when a patient transitions from stage 2 -> 3, this is a result of the complications typically associated with stage 3 of diabetes e.g., renal failure

The best opportunities for intervention are:

- minimize transitions from stages 1 -> 2 e.g., through adherence to prescription drugs and lifestyle changes
- reduce the transition from stages 2 -> 3 through complex care coordination

Diabetes by Disease Stages - GHIP **2023** Experience

	Rx		Medical		Medical + Rx	
	Cost/ Episode	% Change by Stage	Cost/ Episode	% Change by Stage	Cost/ Episode	% Change by Stage
Stage 1	\$3,337		\$1,180		\$4,516	
Stage 2	\$6,384	91%	\$1,933	64%	\$8,317	84%
Stage 3	\$2,945	-54%	\$18,412	852%	\$21,357	157%
Aggregate	\$4,877		\$2,452		\$7,328	

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