

Controversies in the Management of Patients with Type 2 Diabetes

Public Meeting – October 29, 2014

Agenda

Meeting Convened | 10am-10:15am

- Introduction by Steve Pearson, MD, President, Institute for Clinical and Economic Review

Presentation of the Evidence and Voting Questions, Q&A |10:15am – 11:30am

 Dan Ollendorf, PhD, Chief Review Officer, Institute for Clinical and Economic Review

Public Comments and Discussion | 11:30am – 12:00pm

Lunch | 12:00pm – 12:30pm

CEPAC Deliberation and Votes on Evidence Questions | 12:30pm – 2:00pm

Policy Roundtable Discussion | 2:00pm – 3:50pm

Summary and Closing Remarks | 3:50pm – 4pm



New England CEPAC

- Goal:
 - To improve the application of evidence to guide practice and policy in New England
- Structure:
 - Core program of Institute for Clinical and Economic Review (ICER)
 - Evidence review from ICER
 - Deliberation and voting by CEPAC: independent clinicians, scientific review experts, and public members from all six New England states

Funding:

- NESCSO
- Regional private payers
- Regional provider groups



New England CEPAC

- CEPAC recommendations designed to support aligned efforts to improve the application of evidence to:
 - Practice
 - Patient/clinician education
 - Quality improvement efforts
 - Clinical guideline development
 - Policy
 - Coverage and reimbursement
 - Medical management policies
 - Benefit design



EVIDENCE PRESENTATION



Outline

- Evidence on various management options for Type 2 diabetes:
 - Multiple insulin types
 - Multiple combination of oral agents and insulin
 - Insulin pumps and continuous glucose monitors
- Cost-effectiveness of various second- and third-line therapy combinations
- Potential budgetary impact of changing "mix" of insulins used in Type 2 diabetes
- Guidelines and coverage policies



REVIEW OF PUBLISHED EVIDENCE



"Evidence Domains"

- Long-acting insulin analogs vs. human (NPH) insulin
- Multiple oral agents and insulin as second- and third-line treatment options after failure of:
 - Metformin monotherapy
 - Metformin+sulfonylurea combination therapy
- Insulin pumps vs. multiple daily injections
- Continuous glucose monitors vs. conventional monitoring



LONG-ACTING INSULIN ANALOGS VS. NPH INSULIN



Insulin Analogs vs. NPH Insulin

- 2006 Cochrane review and meta-analysis (8 RCTs, ~2,300 patients)*
- No differences in:
 - Reductions in HbA1c
 - Weight gain
 - Frequency of severe hypoglycemia
- Clinical benefits for analogs limited to lower incidence of nonsevere/nocturnal hypoglycemia



Insulin Analogs vs. NPH Insulin

- Six RCTs published after Cochrane review
 - Only two had sample sizes >30
- As with Cochrane review, no statistical differences in major outcome measures
- The two larger RCTs found lower weight gain for insulin detemir vs. NPH, particularly when administered in evening doses*

- 0.4-0.7 vs. 1.6-1.9 kg



*Fajardo Montañana, 2008; Philis-Tsimikas, 2006

Insulin Analogs vs. NPH Insulin

- Conclusion: comparable net health benefit for insulin analogs vs. NPH insulin
 - No differences in HbA1c reduction, changes in body weight, or rate of severe hypoglycemia
 - True clinical impact of nonsevere/nocturnal hypoglycemia not yet known
 - Patients prone to such events may get added benefit from insulin analogs



SECOND-LINE PHARMCOTHERPY



Second-Line Pharmacotherapy

- 2010/2013 CADTH reviews and meta-analysis (72 RCTs, ~28,000 patients)*
 - Meta-analysis results essentially identical when analyzed at individual drug vs. class level (presented at class level here)
- All agents had statistically-significant reductions in HbA1c vs. metformin monotherapy; greatest reductions for GLP-1s and insulins
- Insulins and sulfonylureas increased body weight, DPP-4s were weight-neutral, GLP-1s reduced body weight
- Severe hypoglycemia rare (~1% or less for all regimens), highest for sulfonylureas and insulins

Α NMA Estimate (95% Crl) Treatment added-Favours Favours **CADTH 2010** CADTH 2012 on to metformin Placebo Treatment ┡╤╋╤┥ Sulfonylureas -0.79 (-0.95, -0.63) -0.79 (-0.91, -0.67) └───**?**───┤ Meglitinides -0.64 (-0.93, -0.37) -0.64 (-0.91, -0.38) Thiazolidinediones ┯┻┥ -0.82 (-1.00, -0.66) -0.77 (-0.92, -0.63) Here in the second seco **DPP-4** inhibitors -0.69 (-0.79, -0.60) -0.80 (-0.95, -0.65) AG inhibitors -0.74 (-0.98, -0.50) -0.74 (-0.98, -0.51) GLP-1 analogues -0.82 (-1.05, -0.59) -0.96 (-1.13, -0.80) , **____** Basal insulin -0.82 (-1.16, -0.47) -0.91 (-1.16, -0.67) ·----Biphasic insulin -0.97 (-1.33, -0.61) -1.06 (-1.32, -0.80) -----

-1.8 -1.5 -1.3 -1.0 -0.8 -0.5 -0.3 0.0 0.3 Difference in \triangle A1C from BL (95% Crl)

В

Treatment added-	NMA Estim	ate (95% Crl)	– A Favours Favours
on to metformin	CADTH 2010	CADTH 2012	Treatment Placebo
Sulfonylureas	2.0 (1.1, 2.9)	2.1 (1.3, 2.9)	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>
Meglitinides	1.8 (0.4, 3.3)	1.8 (0.5, 3.1)	↓
Thiazolidinediones	2.6 (1.7, 3.5)	2.7 (1.9, 3.5)	⊢\$1
DPP-4 inhibitors	0.6 (–0.5, 1.6)	0.3 (-0.4, 1.1)	, <mark>!</mark> _ ● , ¹
AG inhibitors	-0.9 (-2.4, 0.5)	-0.9 (-2.2, 0.4)	
GLP-1 analogues	-1.8 (-3.4, -0.1)	-1.8 (-2.9, -0.8)	►
Basal insulin	1.6 (-0.5, 3.6)	1.7 (0.3, 3.1)	+ +
Biphasic insulin	3.0 (1.0, 5.0)	3.1 (1.5, 4.7)	<u>+</u>
*CADTH 2010/2	2013		-5.0 -2.5 0.0 2.5 5.0

Difference in A weight from BL (95% Crl)

15

Second-Line Pharmacotherapy

- Relative effects of second-line agents similar in six RCTs published since CADTH reviews
- One head-to-head RCT of GLP-1 and DPP-4 (n=666)* found greater reductions in HbA1c and body weight with GLP-1 but discontinuation due to side effects 4 times higher:
 - Due primarily to severe GI effects



Second-Line Pharmacotherapy

- Conclusions (vs. combination of metformin and sulfonylurea):
 - GLP-1 (with met): incremental net health benefit
 - Due to beneficial impacts on HbA1c and body weight and low risk of hypoglycemia, balanced against higher d/c rates
 - DPP-4 (with met): comparable net health benefit
 - Due to slightly inferior impact on HbA1c and slightly better impact on body weight
 - Insulin (with met): comparable/incremental net health benefit
 - Similar effects on body weight and hypoglycemia, better reduction in HbA1c

THIRD-LINE PHARMACOTHERAPY



Third-Line Pharmacotherapy

- 2010/2013 CADTH reviews and meta-analysis (31 RCTs, ~9,000 patients)*
 - Meta-analysis results essentially identical when analyzed at individual drug vs. class level (presented at class level here)
- Findings similar to those for second-line agents:
 - Insulin and GLP-1 had greatest reductions in HbA1c
 - GLP-1 significantly reduced body weight; insulin significantly increased it
- Absolute rates of severe hypoglycemia were higher (~2%) but evidence insufficient to distinguish between regimens



*CADTH, 2010 (2013 update)

Treatment added-	NMA Estim	ate (95% Crl)	F	Fourier
and a sulfonylurea	CADTH 2010	CADTH 2012		
Basal Insulin	–1.17 (–1.57, –0.81)	–1.15 (–1.49, –0.83)	·8!	
Biphasic Insulin	–1.10 (–1.59, –0.67)	–1.12 (–1.52, –0.75)	' <u>+</u> 8!'	
Thiazolidinediones	-0.96 (-1.35, -0.59)	-0.96 (-1.30, -0.62)	' 8i '	
DPP-4 Inhibitors	–0.89 (–1.51, –0.26)	-0.72 (-1.03, -0.42)	► <u></u>	
AG Inhibitors	-0.46 (-0.96, 0.03)	-0.45 (-0.90, 0.01)	·8	1
GLP-1 Analogues	–1.06 (–1.45, –0.69)	–1.06 (–1.40, –0.73)	└8 4	
Bolus Insulin	–1.01 (–1.71, –0.35)	–1.02 (–1.62, –0.44)	ا+•	
Meglitinides	-0.18 (-2.08, 1.71)	-0.17 (-2.02, 1.71)	ب 8-	
			· · · · · · · ·	

-2.5 -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5 2.0 2.5 Difference in \triangle A1C from BL (95% Crl)

В

Treatment added- on to metformin	NMA Estim	nate (95% Crl)						
and a sulfonylurea	CADTH 2010	CADTH 2012	←	Favours Treatment	F t P	avours Iacebo —	→	
Basal Insulin	1.9 (0.5, 3.1)	1.9 (0.7, 3.0)			- F	8 1		
Biphasic Insulin	3.4 (1.7, 5.0)	3.3 (1.9, 4.7)				ج®	! '	
Thiazolidinediones	3.0 (1.7, 4.4)	3.1 (1.9, 4.3)				ا		
DPP-4 Inhibitors	1.1 (–1.4, 3.6)	0.7 (–0.8, 2.2)		۴.,		•! ·	I	
AG Inhibitors	-0.4 (-2.2, 1.4)	-0.5 (-2.1, 1.2)		ŀ <u></u>	.			
GLP-1 Analogues	–1.6 (–3.0, –0.2)	–1.6 (–2.8, –0.4)		ا8				
Bolus Insulin	5.0 (2.5, 7.4)	5.0 (2.8, 7.2)				<u>ب</u>	8	!
Meglitinides	2.7 (-0.9, 6.3)	2.6 (-0.7, 6.0)		•	F			4
20		-	-5.0 Differe	-2.5 ence in ∆ V	0.0 Neight	2.5 from BL (5.0 95% Crl)	7.5

Third-Line Pharmacotherapy

- Conclusions (vs. combination of metformin, sulfonylurea, and basal insulin):
 - GLP-1 (with met+sulf): incremental net health benefit
 - Due to comparable effects on HbA1c and beneficial impact on body weight
 - DPP-4 (with met+sulf): comparable net health benefit
 - Due to slightly inferior impact on HbA1c and slightly better impact on body weight



INSULIN PUMP VS. MULTIPLE DAILY INJECTIONS



Insulin Pumps vs. MDI

- 4 RCTs (n=344) identified in 2012 AHRQ review:*
- No differences observed in glycemic control, severe hypoglycemia, or weight gain
- Insufficient evidence of any differences in nocturnal hypoglycemia, diabetes-related complications, or mortality



Insulin Pumps vs. MDI

- Largest of more recent RCTs (n=495)* found reduction in HbA1c for pump vs. MDI (-0.7%; 95% CI: -0.9%, -0.4%; p<0.001)
- Study design concerns:
 - Significant dropout and protocol violations
 - Less blood glucose testing in MDI group (correlated with knowledge of treatment assignment?)
- Conclusion: comparable net health benefit for insulin pumps vs. MDI



CONTINUOUS GLUCOSE MONITORS VS. CONVENTIONAL MONITORING



CGM vs. Conventional Monitoring

- AHRQ review found <u>no</u> studies comparing CGM to conventional glucose monitoring in Type 2 patients on insulin
- Single RCT (n=100)* in patients <u>not</u> taking insulin found reduced HbA1c with CGM relative to conventional monitoring
- Conclusion: insufficient evidence to determine comparative net health benefit



ECONOMIC EVALUATION: COST-EFFECTIVENESS MODEL



Cost-Effectiveness Model: Methods

- Purpose: to assess the comparative value of second- and third-line pharmacotherapy options for Type 2 diabetes
- Used validated outcomes model based on UK Prospective Diabetes Study (UKPDS)*
- Differential impact of treatment on HbA1c and body weight incorporated



Cost-Effectiveness Model: Methods

- Model projects key outcomes over lifetime time horizon:
 - Fatal MI and stroke
 - Nonfatal MI/stroke, ischemic heart disease, heart failure, amputation, blindness, renal failure
 - Diabetes-related and all-cause mortality
 - Unadjusted and quality-adjusted life expectancy
- Costs: pharmacotherapy, routine diabetes-related care, initial and follow-on treatment of complications

Cost-Effectiveness Model: Key Assumptions

Assumption	Rationale
Outcomes driven by initial treatment strategy only	Lack of detailed, time-dependent data on therapy switch and incremental effects of switch
Relative effects of treatment were constant over time	Lack of detailed data on degradation of treatment effects over time
NPH and insulin analogs assumed to have equivalent effectiveness (but different costs)	Consistent with findings of evidence review
Insulin pump therapy and continuous glucose monitoring not evaluated	Lack of evidence distinguishing these approaches from alternatives



Cost-Effectiveness Model: Results for 2nd Line Pharmacotherapy

- Impact on diabetes-related complications similar across regimens:
 - Exception: lower rate of CHF with metformin+GLP-1 (11.1% vs. 11.8-12.2%) due to beneficial impact on body weight
- Rate of diabetes-related death similar for all regimens of interest



Cost-Effectiveness Model: Results for 2nd Line Pharmacotherapy

				Severe			vs. MET	T+Sl	JLF
	Life Expectancy		Diabetes	Hypoglycemia	I	Total	Cost per		Cost per
Regimen	(years)	QALYs	Death (%)	(%)*		Costs	Death Averted	Q	ALY Gained
MET Alone (Ref)	11.01	8.33	21.5	N/A	\$	70,494			
MET+SULF	11.11	8.43	20.5	1.0	\$	76,956			
MET+GLP-1	11.17	8.49	20.3	No events	\$	117,184	\$ 20,114,146	\$	689 <i>,</i> 850
MET+DPP-4	11.10	8.42	20.8	<0.1	\$	104,026	‡		‡
MET+Insulin Analog	11.13	8.45	20.4	0.9	\$	101,839	\$ 24,883,051	\$	1,020,313
MET+NPH Insulin	11.13	8.45	20.4	0.9	\$	80,817	\$ 3,861,003	\$	158,318

*Not from model; pooled findings from RCTs in CADTH review

‡Less effective, more expensive

MET: Metformin; SULF: Sulfonylurea; GLP-1: Glugacon-like peptide-1 agonist; DPP-4: Dipeptidyl peptidase-4 inhibitor



Cost-Effectiveness Model: Results for 3rd Line Pharmacotherapy

- As with 2nd-line regimens, impact on diabetesrelated complications similar across regimens:
 - Exception: lower rate of CHF with metformin+sufonylurea+GLP-1 (10.6% vs. 11.5-11.6%) due to beneficial impact on body weight
- Rate of diabetes-related death similar for all regimens of interest



Cost-Effectiveness Model: Results for 3rd Line Pharmacotherapy

				Severe		vs. MET+S	ULF+NPH
	Life Expectancy		Diabetes	Hypoglycemia	Total	Cost per	Cost per
Regimen	(years)	QALYs	Death (%)	(%)*	Costs	Death Averted	QALY Gained
MET+SULF (Ref) MET+SULF+NPH	9.02	6.82	24.6	N/A	\$ 81,773		
Insulin	9.21	7.00	23.6	1.1	\$ 91,025		
MET+SULF+GLP-1	9.23	7.01	23.0	1.5	\$ 122,181	\$ 5,192,565	\$ 1,771,354
MET+SULF+DPP-4 MET+SULF+Insulin	9.13	6.92	23.8	2.6	\$ 111,048	+	+
Analog	9.21	7.00	23.6	1.1	\$ 108,717	¤	¤

*Not from model; pooled findings from RCTs in CADTH review

‡Less effective, more expensive

¤Equally effective, more expensive

MET: Metformin; SULF: Sulfonylurea; GLP-1: Glugacon-like peptide-1 agonist; DPP-4: Dipeptidyl peptidase-4 inhibitor



ECONOMIC EVALUATION: POPULATION BUDGET IMPACT



Budget Impact Model: Methods

- Potential budgetary impact of multiple distributions of insulin analog vs. NPH insulin use for Type 2 diabetes in New England:
 - Baseline estimate: 80% insulin analog
- Costs estimated based on assumed daily dosing of 0.3 mg/kg in an 89 kg individual (i.e., 27 units), assuming insulin is added to other agents:
 - Approximate annual costs of \$2,700 vs. \$1,000 for analog vs. NPH respectively



Budget Impact Model: One-Year Impact of Shifts in Insulin Use by Type



Analog \$ NPH \$

CLINICAL GUIDELINES



Clinical Guidelines

- AACE, ACP, ADA, IDF, NICE
- Most societies do not provide specific guidance as to hierarchy of selection for second- or third-line therapy
 - Exceptions: AACE (GLP-1s are first preference); NICE (sulfonylureas are first choice for 2nd line)
- Most societies (other than NICE) suggest a preference for insulin analogs over NPH
- Pumps may be beneficial in Type 2 patients with "erratic lifestyles" and those with "dawn phenomenon"
- No current recommendations for continuous glucose monitoring in Type 2 patients



COVERAGE POLICIES



Coverage Policies

- DPP-4s and GLP-1s often restricted by prior authorization and step-therapy requirements
- Both insulin analogs and NPH insulin typically covered without restriction
- CMS NCD covers insulin pumps for Type 2 patients who inject frequently and have inadequate glycemic control
 - BCBSMA does not cover pumps for Type 2, however
- No policies specific to CGMs in Type 2 were found



PUBLIC COMMENTS



Public Comments

- Impact of hypoglycemia (poorer quality of life, reduced productivity, heightened risk of severe events)
- Model limitations (no explicit consideration of costs or disutility of hypoglycemia, limited effect of weight gain, no therapy switching included)
- Heterogeneity of Type 2 disease (individualized treatment, more benefit of certain regimens in particular subpopulations)





QUESTIONS FOR DELIBERATION

Comparative Clinical Effectiveness Example Question

- Is the evidence "adequate" to demonstrate that "intervention A" is equivalent or superior to "comparator B" for patients with "condition X"?
- A. Yes
- B. No
- C. Abstain



Comparative Value Example Question

If yes, what is the comparative value of "intervention A" vs. "comparator B"?

Low Value	Reasonable/ Comparable Value	High Value
Worse outcomes; Higher or equivalent cost	Worse outcomes; Lower cost	 Comparable outcomes; Lower cost
 Comparable outcomes; Higher cost 	 Comparable outcomes; Comparable cost 	 Promising but inconclusive evidence of better outcomes; Lower cost
 Promising but inconclusive evidence of better outcomes; Higher cost 	 Promising but inconclusive evidence of better outcomes; Comparable cost 	9. Better outcomes; Lower or comparable cost
 Better outcomes; Too high a cost 	6. Better outcomes; Reasonable higher cost	10. Better outcomes; Slightly higher cost

INSULIN CHOICE



Comparative Clinical Effectiveness: Human insulin vs. insulin analogs

 Is the evidence adequate to demonstrate that <u>NPH</u> <u>insulin</u> (intermediate-acting human insulin) is functionally equivalent to <u>long-acting insulin</u> <u>analogs</u> for most patients with type 2 diabetes?

Results:

- A. Yes: 9 votes
- B. No: 0 votes
- C. Abstain: 0 votes



Comparative Value: Human insulin vs. insulin analogs

- If yes, from the perspective of a state Medicaid program, would you judge the value of <u>NPH insulin</u> compared to <u>long-acting insulin analogs</u> to be:
 - High
 - Reasonable
 - Low

CEPAC voted that NPH insulin has comparable outcomes at *lower costs as compared to long-acting insulin analogs, therefore representing a high value.*



Comparative Value: Human insulin vs. insulin analogs

Low Value		Reasonable/Comparable Value			High Value
	Worse outcomes; Higher or equivalent cost		Worse outcomes; Lower cost	7.	Comparable outcomes; Lower cost 8 votes
1.	Comparable outcomes; Higher costs	4.	Comparable outcomes; Comparable cost	8.	Promising but inconclusive evidence of better outcomes; Lower cost: 1 vote
2.	Promising but inconclusive evidence of better outcomes; Higher cost	5.	Promising but inconclusive evidence of better outcomes; Comparable cost	9.	Better outcomes; Lower or comparable cost
3.	Better outcomes; Too high a cost	6.	Better outcomes; Reasonable higher cost	10.	Better outcomes; Slightly higher cost

SECOND-LINE PHARMACOTHERAPIES



Comparative Clinical Effectiveness: DPP-4 inhibitor vs. sulfonylurea

3. Is the evidence adequate to demonstrate that combination therapy with <u>metformin + DPP-4</u> <u>inhibitor</u> is superior to <u>metformin + sulfonylurea</u> for most patients with type 2 diabetes for whom metformin monotherapy provides inadequate glycemic control?

Results

- A. Yes: 1 vote
- B. No: 8 votes
- C. Abstain: 0 votes



Comparative Value: DPP-4 inhibitor vs. sulfonylurea

- If yes, from the perspective of a state Medicaid program, would you judge the value of <u>metformin+ DPP-4 inhibitor</u> compared to <u>metformin + sulfonylurea</u> to be:
 - High
 - Reasonable
 - Low

NOTE: This vote was not taken since a majority of the Council did not deem the evidence adequate to demonstrate the comparative clinical effectiveness between these two options.



Comparative Clinical Effectiveness: GLP-1 receptor agonist vs. sulfonylurea

5. Is the evidence adequate to demonstrate that combination therapy with <u>metformin + GLP-1 receptor</u> <u>agonist</u> is superior to <u>metformin + sulfonylurea</u> for most patients with type 2 diabetes for whom metformin monotherapy provides inadequate glycemic control?

Results:

- A. Yes: 6 votes
- B. No: 3 votes
- C. Abstain: 0 votes



Comparative Value:

GLP-1 receptor agonist vs. sulfonylurea

- If yes, from the perspective of a state Medicaid program, would you judge the value of <u>metformin + GLP-1 receptor</u> <u>agonist</u> compared to <u>metformin + sulfonylurea</u> to be:
 - High value
 - Reasonable value
 - Low value

CEPAC voted that a combination of metformin + GLP-1 receptor agonist represents better outcomes at too high of a cost as compared to metformin+sulfonylurea, making the combination a low value option.



Comparative Value:

GLP-1 receptor agonist vs. sulfonylurea

	Low Value	Re	asonable/Comparable Value		High Value
	Worse outcomes;		Worse outcomes;	7.	Comparable outcomes;
	Higher or equivalent cost		Lower cost		Lower cost
1.	Comparable outcomes; Higher costs	4.	Comparable outcomes; Comparable cost	8.	Promising but inconclusive evidence of better outcomes; Lower cost
2.	Promising but inconclusive evidence of better outcomes; Higher cost 2 votes	5.	Promising but inconclusive evidence of better outcomes; Comparable cost	9.	Better outcomes; Lower or comparable cost
3.	Better outcomes; Too high a cost 4 votes	6.	Better outcomes; Reasonable higher cost	10.	Better outcomes; Slightly higher cost

THIRD-LINE PHARMACOTHERAPIES



Comparative Clinical Effectiveness DPP-4 inhibitor vs. NPH insulin

7. Is the evidence adequate to demonstrate that combination therapy with <u>metformin +</u> <u>sulfonylurea + DPP-4 inhibitor</u> is superior to <u>metformin + sulfonylurea + NPH insulin</u> for most patients with type 2 diabetes with inadequate glycemic control?

Results:

- A. Yes: 0 votes
- B. No: 9 votes
- C. Abstain: 0 votes



Comparative Value: DPP-4 inhibitor vs. NPH insulin

- 8. If yes, from the perspective of a state Medicaid program, would you judge the value of *metformin + sulfonylurea + DPP-4 inhibitor* compared to *metformin + sulfonylurea + NPH insulin* to be:
 - High
 - Reasonable
 - Low

NOTE: This vote was not taken since a majority of the Council did not deem the evidence adequate to demonstrate the comparative clinical effectiveness between these two options.



Comparative Clinical Effectiveness GLP-1 receptor agonist vs. NPH Insulin

9. Is the evidence adequate to demonstrate that combination therapy with <u>metformin + sulfonylurea + GLP-1 receptor</u> <u>agonist</u> is superior to <u>metformin + sulfonylurea + NPH</u> <u>insulin</u> for most patients with type 2 diabetes with inadequate glycemic control?

Results:

- A. Yes: 6 votes
- B. No: 3 votes
- C. Abstain: 0 votes



Comparative Value:

GLP-1 receptor agonist vs. NPH Insulin

- If yes, from the perspective of a state Medicaid program, would you judge the value of <u>metformin + sulfonylurea + GLP-1 receptor</u> <u>agonist</u> compared to <u>metformin + sulfonylurea + NPH insulin</u> to be:
 - High
 - Reasonable
 - Low

CEPAC voted that that the combination of metformin + sulfonylurea + GLP-1 receptor agonist represents low value as compared to metformin + sulfonylurea + NPH insulin. Votes were split between promising but inconclusive evidence of better outcomes at a higher cost and better outcomes at too high of a cost.



Comparative Value: GLP-1 receptor agonist vs. NPH Insulin

Low Value		Reasonable/Comparable Value			High Value
	Worse outcomes; Higher or equivalent cost		Worse outcomes; Lower cost	7.	Comparable outcomes; Lower cost
1.	Comparable outcomes; Higher costs	4.	Comparable outcomes; Comparable cost	8.	Promising but inconclusive evidence of better outcomes; Lower cost
2.	Promising but inconclusive evidence of better outcomes; Higher cost 3 votes	5.	Promising but inconclusive evidence of better outcomes; Comparable cost	9.	Better outcomes; Lower or comparable cost
3.	Better outcomes; Too high a cost 3 votes	6.	Better outcomes; Reasonable higher cost	10.	Better outcomes; Slightly higher cost





Comparative Clinical Effectiveness Insulin pumps vs. Multiple Daily Injections

11. Is the evidence adequate to demonstrate that any clinical subpopulation of patients with type 2 diabetes does better with *insulin pumps* compared to *multiple daily injections*?

Results:

- A. Yes: 0 votes
- B. No: 9 votes
- C. Abstain: 0 votes



Comparative Clinical Effectiveness: Self-monitoring of blood glucose vs. Continuous glucose monitors

12. Is the evidence adequate to demonstrate that any clinical subpopulation of patients with type 2 diabetes does better with <u>continuous glucose</u> <u>monitors</u> compared to <u>self-monitoring of blood</u> <u>glucose</u>?

Results

- A. Yes: 0 votes
- B. No: 9 votes
- C. Abstain: 0 votes



Broader Considerations for Public Health and Disparities

13. Are there any considerations related to public health, equity, disparities in access or outcomes for specific patient populations, or other social values that should also be considered in medical policies related to the use of pharmacotherapy treatment options, insulin delivery systems, or glucose monitoring methods and devices in patients with type 2 diabetes?

[Discussion will be summarized in the final report]

