



Improving quality in diabetes care: development and implementation of integrated clinical pathways in two Mexican States

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INTRODUCTION

The increase in type 2 diabetes (DM2) prevalence and the deficiencies in the quality of its care in the Mexican health system make it essential to strengthen the integration of actions and the implementation of evidence-based interventions for diabetes care. In Mexico, Integrated Care Pathways (ICP) for diabetes is a novel tool to test for improvement.

OBJECTIVE

Develop, implement and assess the effect of an ICP in improving the quality of DM2 care in Primary Health Centers (PHCs) of the States of Campeche and Mexico

METHOD

Quasi-experimental study (before-and-after evaluation with a control group). A jurisdiction (a district-like structure) and five intervention and similar control group PHCs were selected in each State. Multidisciplinary teams developed a contextualized ICP (basic mapping, flowchart, time matrix for activities and responsibilities, variation sheet, patient information leaflet, and patient experience survey). The care process was detailed in six phases (screening, family environment, diagnosis, comprehensive baseline assessment, non-pharmacological treatment, pharmacological treatment, and monitoring and control).The ICP was disseminated in the intervention group, including health personnel training, stressing the changes to address the clinical and organizational problems identified. Evidence-based indicators were constructed, pilot tested and measured at baseline (December 2019) and in June 2022 with random samples of 30-40 clinical records per indicator and center. Changes in compliance (absolute and relative improvement) were calculated and tested for statistical significance (z-test for differences) in all groups. We interviewed the center's directors and personnel participating in the ICP's development to record structural and input limitations that could hamper the implementation.

CONCLUSIONS

Local ICPs were successfully developed in both States. The implementation experience has been positive, and their effectiveness in improving care for DM2 patients was demonstrated in comparison to control groups, despite the dire situation caused by the COVID-19 pandemic. However, to achieve the ICP's full potential for improvement, the health authorities should provide the expected inputs and personnel.

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REFERENCES

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RESULTS

ICPs were successfully developed in both States. In Campeche, a statistically significant improvement was observed in 14 indicators (out of 23) in the intervention PHCs and four in the control group. It is worth mentioning that several indicators could not be improved, given some severe restrictions on personnel and necessary inputs (lab tests, insulin, among others) after the pandemic. The implementation was less successful in the State of Mexico, and the structural and input limitations were higher. However, a statistically significant improvement was observed in 5 indicators in the intervention and only one in the control PHCs.

Evaluation of the quality of the care process of patients with DM2 between baseline (January-December 2019) and intermediate (May 2021 -May 2022) after the construction and implementation of the Clinical Pathway in the five Health Centers of intervention and control in the State of Campeche				
Mapping blocks and indicator names	Intervention Centers		Control Centers	
	Baseline compliance n=143	Intermediate compliance n=163	Baseline compliance n=164	Intermediate compliance n=154
	%	%	%	%

Screening				
[T1.1] People >20 years screened for DM2 in the community	0.0	0.0	0.0	0.0
[T1.2] People >20 years screened for DM2 in the community with screening completed at the Health Center	0.0	0.0	0.0	0.0
[T2] People >20 years screened for DM2 in the Health Center with complete screening	24.5	52.1	11.6	13.6
Family environment				
[EF1] Screening of people over 20 years of age living with patients with newly diagnosed DM2	0.0	33.3	0.0	0.0
Diagnosis				
[ID_1] Correct diagnosis of DM2	82.5	92.0	84.1	81.8
Comprehensive baseline assessment				
[VB1] Complete baseline assessment in the patient with DM2	0.0	1.8	0.0	0.0
[VB1.1] Instrumented podiatric assessment	2.8	12.3	0.6	0.6
[VB1.2] Assessment of sexual life in DM2	0.7	6.1	0.6	0.0
[VB1.3] Eye Fundus exam	3.5	12.9	2.4	1.3
[VB1.4] Nutritional assessment (application of 3 tools)	0.0	6.7	0.0	0.6
[VB1.5] Screening for depression or anxiety in people with T2DM	12.6	3.1	4.3	0.6
Non-pharmacological treatment				
[TNF_AF1] Medical indication for consultation with nutrition and aerobic physical activity	6.3	25.8	1.8	2.6
[GAM1] Newly diagnosed patients who are invited to participate in self-help groups	2.1	3.1	3.0	1.9
[GAM2] Newly diagnosed patients attending the self-help group	20.3	19.0	13.4	0.0
[EMP1] Patients with DM2 who perform collective physical exercise (self-help groups)	0.0	0.0	0.0	0.0
Pharmacological treatment				
[FT1] Appropriate initial pharmacological treatment	44.8	82.8	46.3	55.2
[TF2] Appropriate use of statins in DM2 patients with cardiovascular risk factors	33.6	44.8	28.0	38.3
[TF3] Treatment with CEA or ARB in patients with T2DM and proteinuria	72.7	50.0	66.7	50.0
Follow-up and control				
[EM.1] Patients with comprehensive evaluation and monitoring	0.0	2.5	0.0	0.0
[AC1] People trained in self-monitoring of capillary glycemia	0.0	0.0	0.0	0.0
[PC1] Meeting the goals of control of serum glucose and glycosylated hemoglobin levels	23.1	57.7	28.0	37.7
[PC2] Lipid control in patients with T2DM and cardiovascular risk	5.6	26.1	10.4	9.6
[PC3] Patients with T2DM controlled for one year	0.0	19.6	0.0	4.5

-:	Not applicable. No improvement.
	Statistically significant improvement (p <0.05)
	Statistically non-significant improvement (p >0.05)
	Statistically significant decrease (p <0.05)
	No change or non-statistically significant decrease (p <0.05)

Evaluation of the quality of the care process of patients with DM2 between baseline (January-December 2019) and intermediate (June 2021 -June 2022) after the construction and implementation of the Clinical Pathway in the five Intervention and Control Health Centers in Amecameca, State of Mexico.

Mapping blocks and indicator names	Intervention Centers		Control Centers	
	Baseline compliance n=123	Intermediate compliance n=229	Baseline compliance n=128	Intermediate compliance n=197
	%	%	%	%
Screening				
[T1] People over 20 years of age screened in the community	0.0	0.0	0.0	0.0
[T2] People screened in the community with positive CFR who are given an appointment for care in the medical unit	0.0	0.0	0.0	0.0
[T3] People screened in the community with screen completed in the medical unit	0.0	0.0	0.0	0.0
[T5] People diagnosed with DM2 captured by screening	17.9	9.2	39.1	3.6
Family environment				
[EF1] Family members visited and screened	0.0	0.0	0.0	0.0
[EF2] Family members with positive screening cited to the medical unit	0.0	0.0	0.0	0.0
Diagnosis				
[DM1] Correct diagnosis of T2DM	76.4	84.3	83.6	87.8
Comprehensive baseline assessment				
[VB1] Multidisciplinary team care from the first consultation	0.0	0.0	0.0	0.0
[EFIC1] Coordination with the specialist for management and treatment plan (counter-referral)	0.0	1.7	15.4	1.0
[DM6] Eye fundus examination for diabetic retinopathy	2.4	14.4	0.8	0.0
Non-pharmacological treatment				
[N1VC] Non-pharmacological treatment (diet + exercise)	16.3	24.0	11.7	16.8
[AF1] Attendance at physical activity	0.0	0.0	0.0	0.0
[GAM1] Patients integrated into self-help groups	4.1	4.4	1.6	1.0
Pharmacological treatment				
[TXDM1] Appropriate initial pharmacological treatment	13.8	27.1	29.7	22.3
[DM5] Appropriate use of statins in DM2 patients with cardiovascular risk factors	23.6	37.6	26.6	16.2
[EFECT3] Treatment with ACE or ARB in patients with proteinuria	58.3	50.0	22.2	57.1
[EFECT4] Aspirin treatment in patients with Enf. cerebrovascular ischemic	100.0	100.0	100.0	50.0
Follow-up and control				
[EFECT1] Patients with comprehensive evaluation and monitoring	0.0	0.0	0.0	0.0
[DM2] Meeting glycemic control goals	27.6	11.4	29.7	23.9
[DM3] Compliance with lipid control goals	7.3	8.0	7.0	2.3
Treatment in pre-diabetes				
[TXPD1] Patients with prediabetes on pharmacological treatment	0.0	0.0	0.0	0.0

-:	Not applicable. No improvement.
	Statistically significant improvement (p <0.05)
	Statistically non-significant improvement (p >0.05)
	Statistically significant decrease (p <0.05)
	No change or non-statistically significant decrease (p <0.05)