

Setting A1C Goals Individualized by Using the Intelligent System to Manage Blood Glucose and Patient Safety.

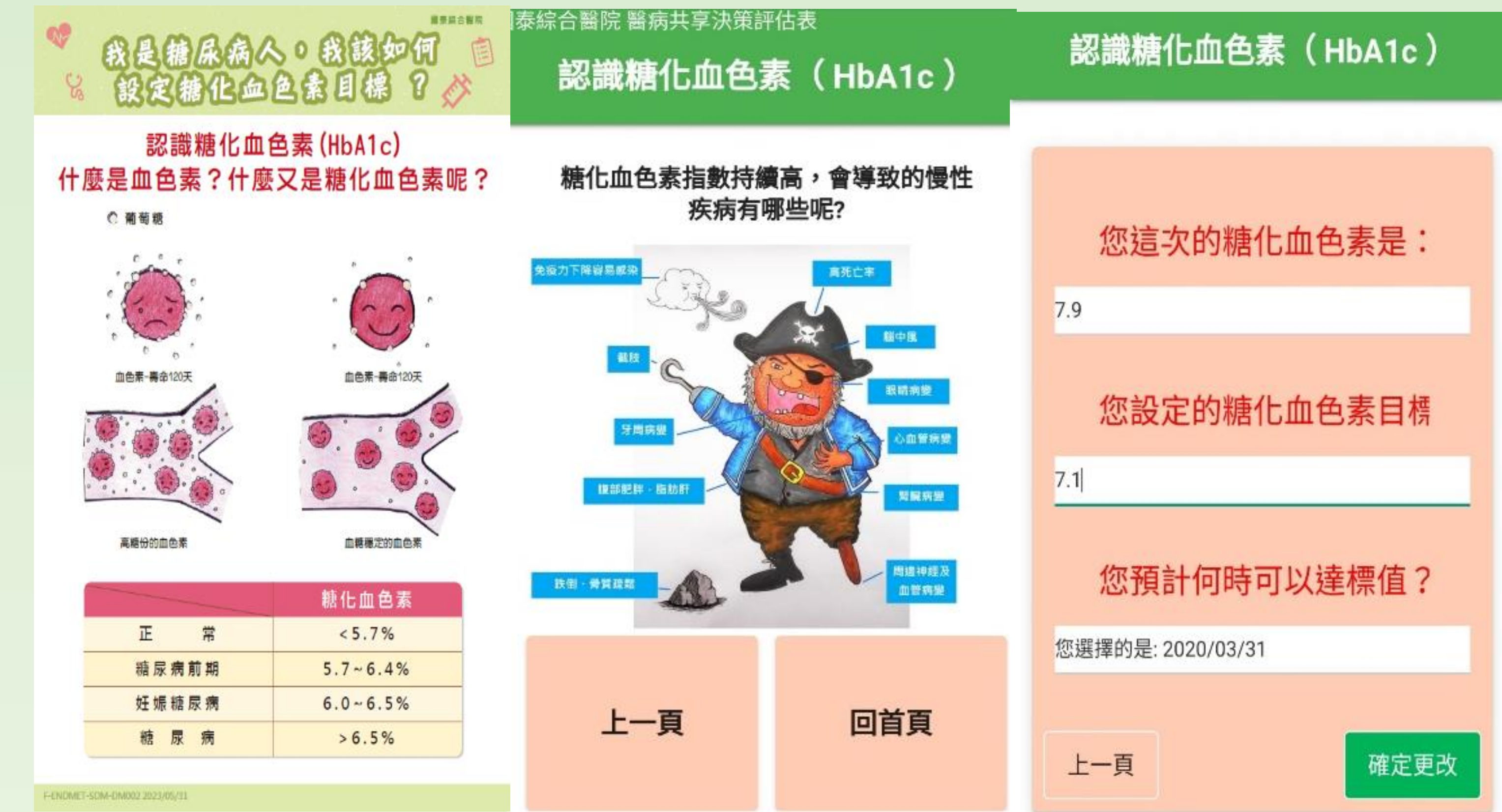
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Introduction

At present, international societies and organizations generally use A1C less than 6.5% or 7% as the standard for glucose control of diabetes. However, diabetic patients have different conditions and comorbidities. In the process of achieving the goal, it is easy to increase unnecessary drug treatment and examination, resulting in medical waste. In addition, it may also cause patients who need to go to the emergency room or be hospitalized due to blood glucose fluctuations. For elderly patients, to set a suitable glucose level will reduce the chance of hypoglycemia or polypharmacy, so as to maintain the safety of patients.

Methods

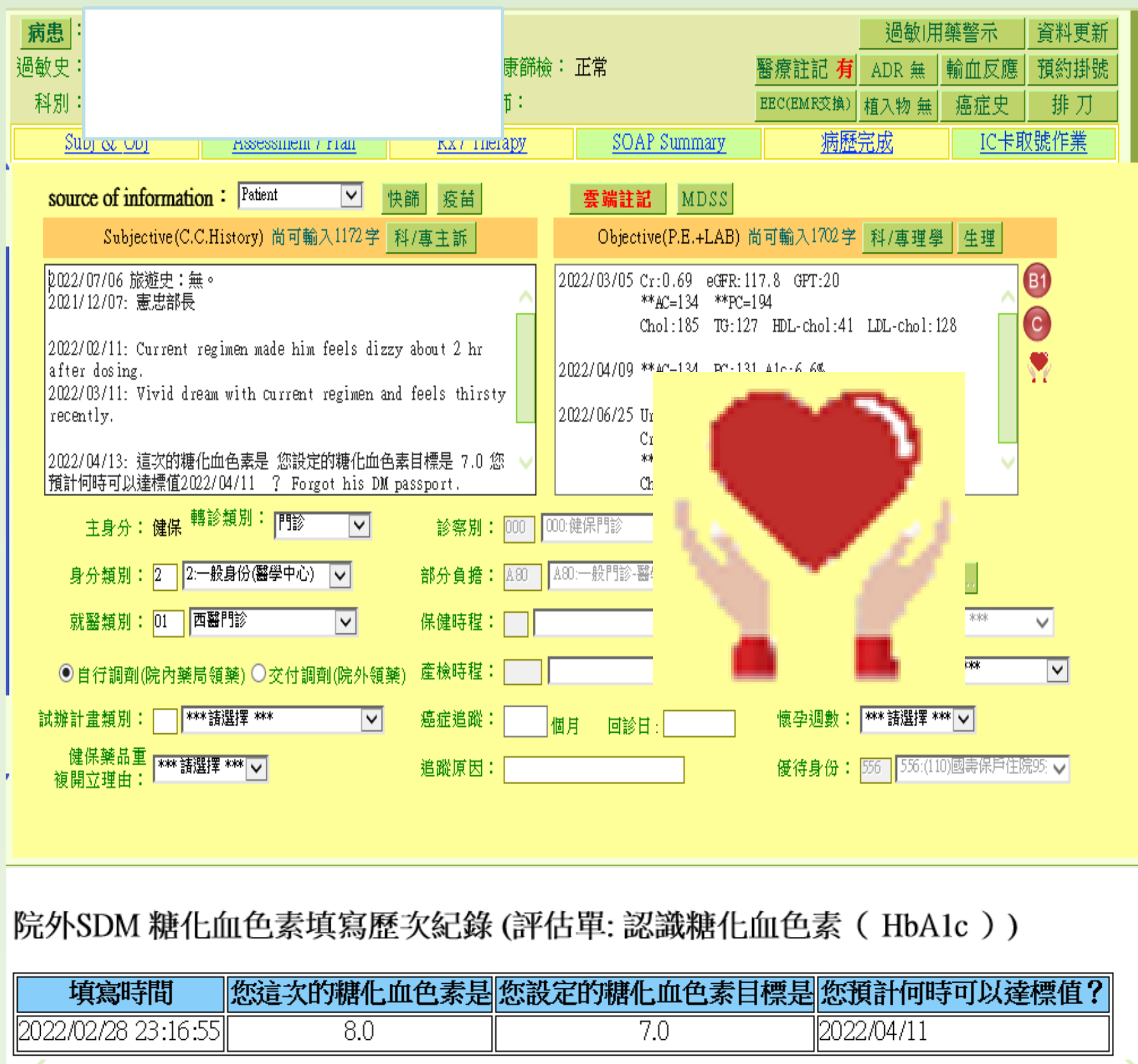
In the way of designing “Share Decision Making (SDM)” tools, we integrated the ideas of physicians, pharmacists, nutritionists, and diabetic educators, and designed health education content that meets the needs of patients. The theme is to understand A1C and diabetes complications, and jointly design online version, so that patients and their families can use 3C devices such as mobile phones to watch health education content. We have designed a QR code for this patient in the hospital's HIS system. After reading the health education content, the patient fills out a questionnaire, which includes age, year of diabetes, self-care ability and medication status, etc. The system will estimate the recommended A1C control range for the patient's reference, and ask the patient to fill in the expected target value and time in the system. These data can be uploaded to the HIS system of the hospital. When the patient returns to the clinic, the physician and members of our diabetes care team discuss with the patient whether the current goal has been achieved, and make our communicate effectively.



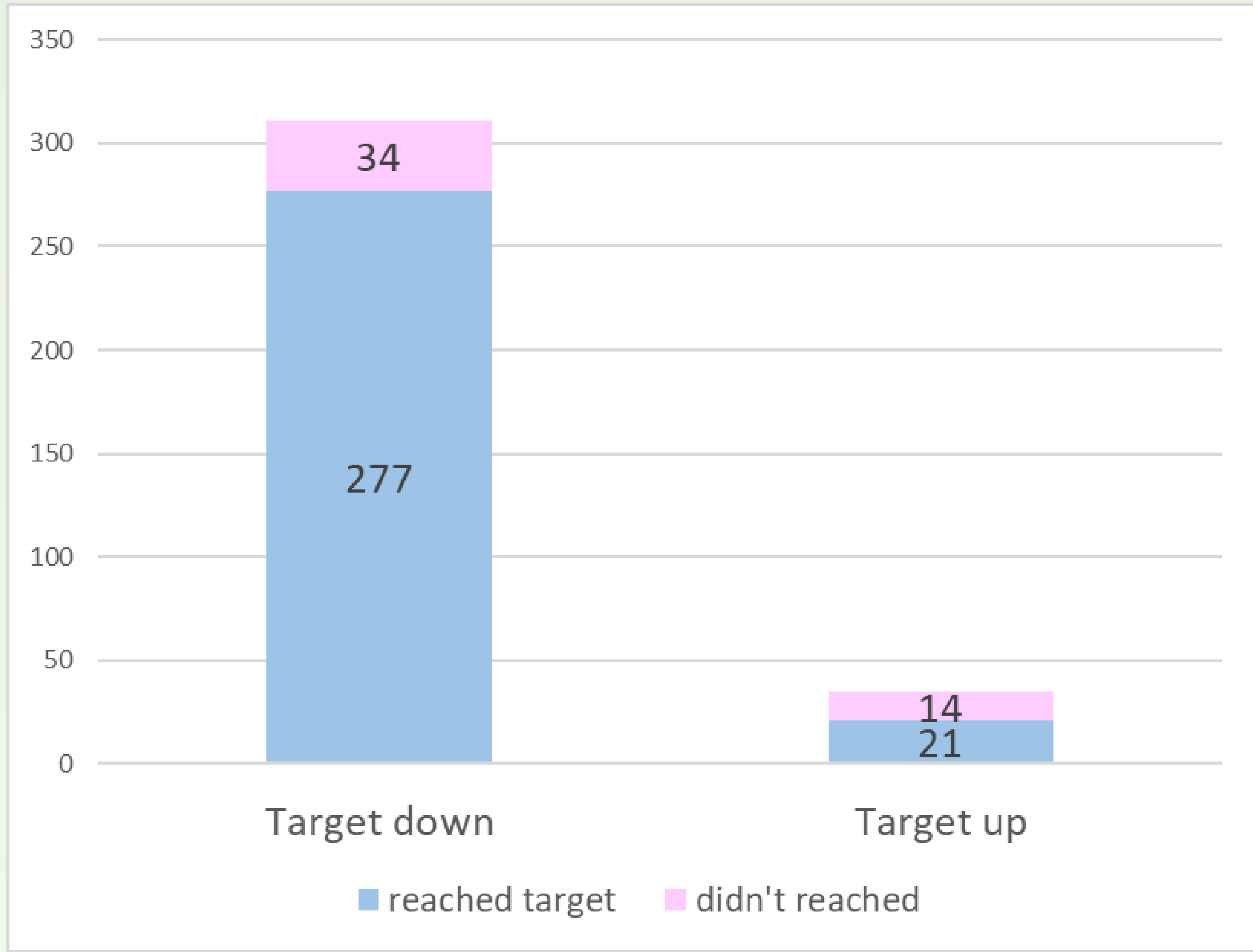
Picture 1, Share Decision Making (SDM) tool



Picture 2, QR code for patient



Picture 3, uploaded to the HIS system



Average A1C	Target Down	Target Up
Before setting	8.37	6.3
After setting	7.71	7.2

Picture 4, patients results

Results

From January 2021 to December 2022, a total of 346 cases were accepted, of which 311 had set target down, the average A1C dropped from 8.37% to 7.71% (-0.66%), and 277 (80 %) reached the target. In addition, in order to avoid hypoglycemia in elderly diabetic patients, after diabetic education, 35 patients had set target up, the average A1C increased from 6.3% to 7.2% (+0.9%), 21 patients (60%) reached the target, there are 16 patients reduced their doses (9 patients reduced oral antidiabetics, 7 patients reduced insulin doses) and no hypoglycemic episodes occurred during the follow-up period. There are 171 patients continued to set the target for the next stage after reached.

The results show that the number of admitted patients is increased, the average blood glucose level has also improved significantly, and the number of patients reaching the target has also increased, and the satisfaction is 96.3%.

Conclusion

Individualized blood glucose control targets are set in stages according to the patient's condition. Through our information management and effective communication, the patient's compliance can be strengthened, and patient-centered care can be realized. It could be a better environment of medical treatment and diabetes education that is more suitable for chronic patients.