

# SHARING INFORMATION WITH THE PATIENT IN A DIABETES MANAGEMENT SYSTEM

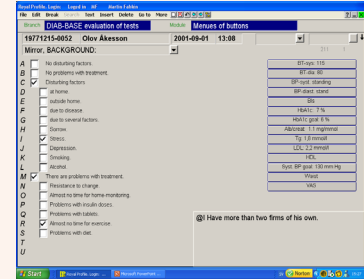
Fahlén.M (1), Cooper.J (2), Eliasson.B (3), Hallgren.P (4), Odén. A (5), Ramebäck. J(6)

1.Hospital of Kungälv, Sweden (e-mail martin.fahlen@mailbox.hogia.net). 2. Stavanger hospital, Norway. 3.Sahlgrenska, Gothenburg, Sweden. 4. Falu lasarett, Sweden. 5. Statistician, Romelanda, Sweden 6. Journalia Inc, Sweden.

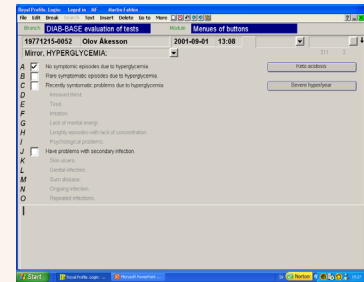
## Introduction

"The mirror" is the name of a button on the screen in a diabetes management system. Its content and functionality was designed to promote patient involvement in the diabetes care process as well as to ensure continuous collection of clinical and psychosocial data. Sitting in front of the PC together with the nurse or doctor the patient will be guided through a sequence of five dialogue screens on the following topics:

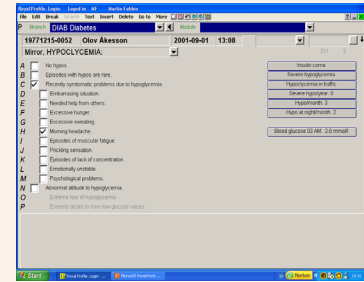
### 1.Psychosocial barriers to treatment (PBT)



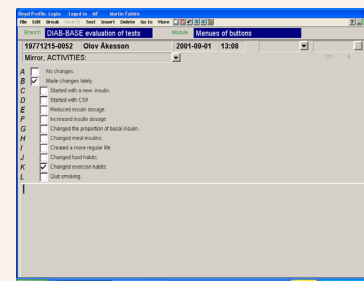
### 2.Hyperglycemia



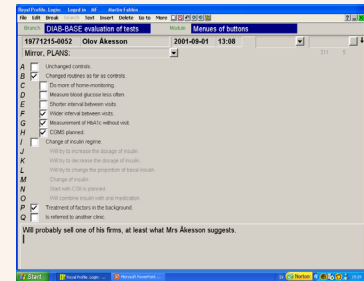
### 3.Hypoglycemia



### 4.New self-management activities (NSMA)



### 5.New plans and agreements (NPA)



## Materials and methods

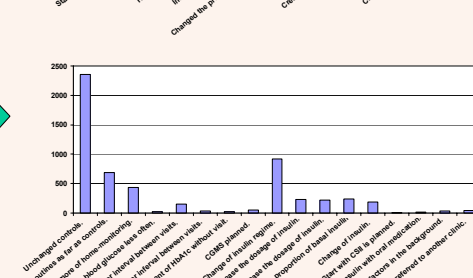
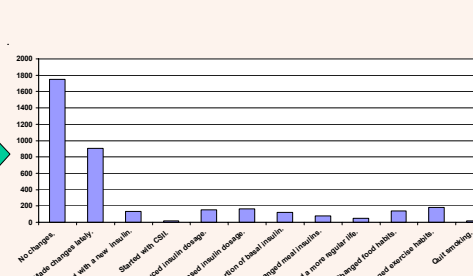
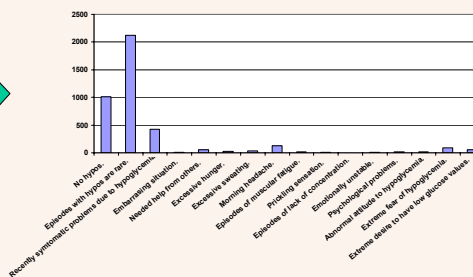
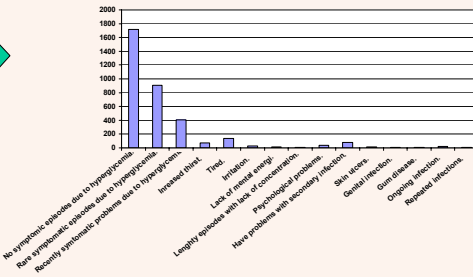
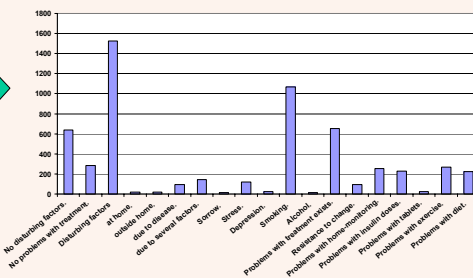
After one year feasibility and data from the last visit in 9072 patients were analyzed. Mean age was 52 years. 89% were treated with insulin and of these 10% used pump. A visual analogue scale on quality of live (QVAS) was also tested in 723 patients.

## Results

The tool had been used in 37% of the patients. PBT were reported in 76%, hyperglycaemia in 64%, hypoglycaemia in 71%. NSMA were reported in 34% and NPA in 30%. A shift to long-acting analogue insulin therapy was seen in 5%. Insulin pump was initiated in 0.6%. 4% of the smokers quit smoking. QVAS was significantly related to neuropathy, laser treatment and U/kg.

## Conclusion

A tool for quality improvement has been implemented.

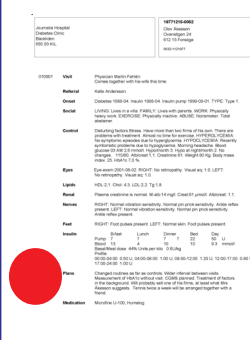


## PC= A mirror with plans

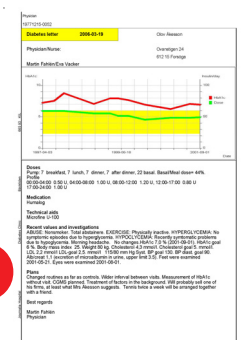
### Feedback during visit

The photo above is from 1984 when we started using the screen as an educational tool for patients with diabetes. Gradually the system was improved to become a comprehensive diabetes management system. Today you can click on "Quality" and some buttons will be colored in yellow telling that eye-exam, exercise, HbA1c and lipids are not OK or in green telling that non-smoking, BP and foot-exam are OK. The patient as well as the nurse or doctor sitting close to the patient in front of the screen discusses individualized goals, findings and treatment. By clicking on "Mirror" you step through the screens seen in the left column of this poster. The last screen includes plans (the red dot).

### The medical record



### The "Diabetes letter"



### Take home written feedback

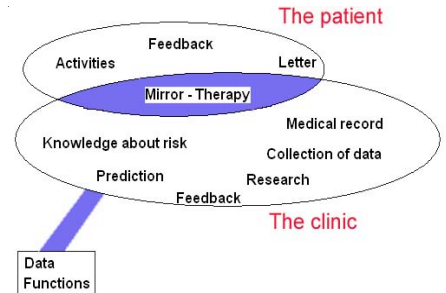
Above left is the medical record, produced either by physician or nurse. It is compiled from coded phrases and other codes together with free text. Above right you find a "Diabetes letter" with individual goals given to the patient together with a printed lab-list.



### Feedback with HbA1c curves and prediction of risk

Above to the left in red is HbA1c from a single patient using insulin pump compared to the group of pump-users attending the clinic shown in black. This presentation can be used during the visit. The yellow line shows HbA1c before start on insulin pump in the group.

When HbA1c data are collected from all clinics it is possible to estimate the correlation coefficient of HbA1c at two occasions with a time lag of 1 years shown above to the right. This curve could be used in order to study the relationship between HbA1c and risk of complications in a long perspective. What is the impact of modifying the HbA1c level during a long period?



### Feedback to reengineer the system

The architecture of the system and the infrastructure is not fixed but can be changed to satisfy the needs of the patient as well as for continuous evaluation and research.