



The Medicine Logistics programme
in the city of Helsinki
5/2006-2/2007

Alarming medication dispenser and
the medication logistics system



Pioneer in the world

At the first time in the world a group of companies gathered together to improve the medicine logistics.

The city of Helsinki piloted the offered service in their home care sector.

Culminatum Ltd Oy acted as a coordinator, who in this programme connected the following group of companies:

- Addoz Oy (alarming medication dispenser)

- Medixine Oy (patient portal)

- Elisa Oyj (telecommunications)

- IBM (server management)

- six pharmacies in Helsinki area (dispenser refilling)



Goals of the programme were set high

- Nurses' workflow will turn from routines to patient care because of released time
- Patient safety will improve
- Medicine misuse will decrease
- Medicine will be taken on time
- Correlation to care will increase
- Pharmaceutical knowledge in pharmacies will be used
- Effectiveness in medication dosage will increase
- Waste of medicine will decrease
- Medicine costs for patients will decrease
- Medicine compensations paid by the Social Insurance Institution in Finland will decrease
- An amount of (useless) home visits will decrease



Results of the medicine logistics programme

- In the piloting phase there were 193 users, from whom 81 users (and 92 dispensers) were active in the end of the programme
- The amount of messages sent during the piloting phase (1.5.2006 – 8.2.2007):

Dose taken	30 297 pieces	95,1%
Dose forgotten	1576 pieces	4,9%
Total amount of doses	31 873 pieces	100%
Alert to the nurse	1105 pieces	3,5%
Dose taken after the automatic reminder call	471 pieces	1,5%

- ➔ 95,1% of doses were taken by using the alarming medication dispenser
- ➔ Adding the automatic reminder call increased the amount of doses taken to 96,6%



Results of the medicine logistics programme

- The alarming medication dispenser increased the amount of on time medication to 95,1%
- When adding the patient portal and telecommunication, meaning added reminder calls, increased the amount of on time medication to 96,6% (+1,5%)
- Depending on criticality of medication a home visit by a nurse might be demanded, which again increased the amount of on time medication over 97%



Goals reached

- Nurses' workflow will turn from routines to patient care because of released time
 - Happened according to nurse interviews
- Patient safety will improve
 - Doses were taken on time and the amount of mistakes in dosage was decreased
- Medicine misuse will decrease
 - Mistakes in dosage were decreased and doses were taken on time
 - 96,6% of doses were taken without activities of home care personnel
- Correlation to care will increase
 - Nurses reported increased vitality among some patients during the pilot
- Pharmaceutical knowledge in pharmacies will be used
 - Pharmacies reported several changes they made in medication because of pure medication synergy and side-effects
 - Doses were optimised to ensure the maximum medicine effect



Goals reached

- Effectiveness in medication dosage will increase
 - Medicine dosage was more effective and accurate when it was accomplished in a quiet and clean room designated for this purpose
- Waste of medicine will decrease
 - Ensured medication synergy decreased the need for interrupting medication
 - Dose not taken could be used later
- Medicine costs for patients will decrease
 - Ensured medication synergy decreased the need for interrupting medication
- Medicine compensations paid by the Social Insurance Institution in Finland will decrease
 - Ensured medication synergy decreased the need for interrupting medication
 - The paid medicine was taken and was effecting on the patient health
- An amount of (useless) home visits will decrease
 - A need for home visits to ensure medication taking was decreased



The main topic is the opportunity this service model offers. With this model patients can be effected before they need home care services and that way extend their independent living at home.



Comments from Anna-Liisa Lyytinen,
director of home care services in the city of Helsinki

- As an utility the alarming medication dispenser enables elderly people with weakened memory live at home
- The need for institutionalization may be postponed
- The amount of patients having dementing disease will increase among an increasing amount of elderly people – to enable living at home has economical relevance
- The relation between the increased amount of patients demanding nursing compared to the decreased amount of nurses (generation starting the nursing education)
- Demands use of IT-based utilities
- The contribution of nurses can be focused to support and improve the elderly people's activity and locomotion, instead of reminding and controlling the medication taking
- The effectiveness of the medication can be improved and the medication misuse can be decreased



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