

Status quo of the logistic IT-Tools in Swiss hospitals and hospital pharmacies

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Introduction

Current facts and figures on the state of digitalisation in hospitals are incomplete. A survey conducted in 41 hospital pharmacies via chief pharmacists took place in 2011. An enlarged survey was conducted in 2021. The aim was to create an overview for decisionmakers in order to answer questions like

- which tools are used?
- to what extent are they used?
- how has it changed since 2011?

The results of the survey should enable executives to recognise the development and trends.

Method

- Survey conducted in spring 2021 in 60 institutions. The chief pharmacist of the hospitals were contacted. All of them were members of GSASA. Maximal 2 reminders were given.

Results 59 (98%) pharmacists answered the questions.

ERP (enterprise resource planning system): All institutions have a system in place. 6-8 systems are in use at present. The main 5 already existed in 2011. 47 (80%) institutions have interfaces to billing (drug prices) and finances (invoice processing). 22 (37%) can process the supplier invoices electronically and 10 (17%) partially electronically while 14 (24%) plan to establish it.

Barcode Scanning: 53% of the responders use it either fully or partially for the warehouse management.

Ward stock management: In 48 (80%) cases e-orders are used partly by scanning. However only 3 (5%) have tied up electronic cabinets.

Discussion and Conclusion

- The situation concerning the ERPs in Swiss hospitals is stable. Since 2011 it has hardly changed.
- All of the other issues of the survey have dynamically evolved during the last decade. In particular automated medication distribution systems and electronic invoice processing.
- The survey was restricted to GSASA members. It is therefore not complete. Yet GSASA covers most of the central and primary care hospitals (all university and cantonal hospitals are included).

- The survey contained 27 questions and focused on supply chain and distribution of labelled drugs. It was carried out utilising the platform of Findmind.

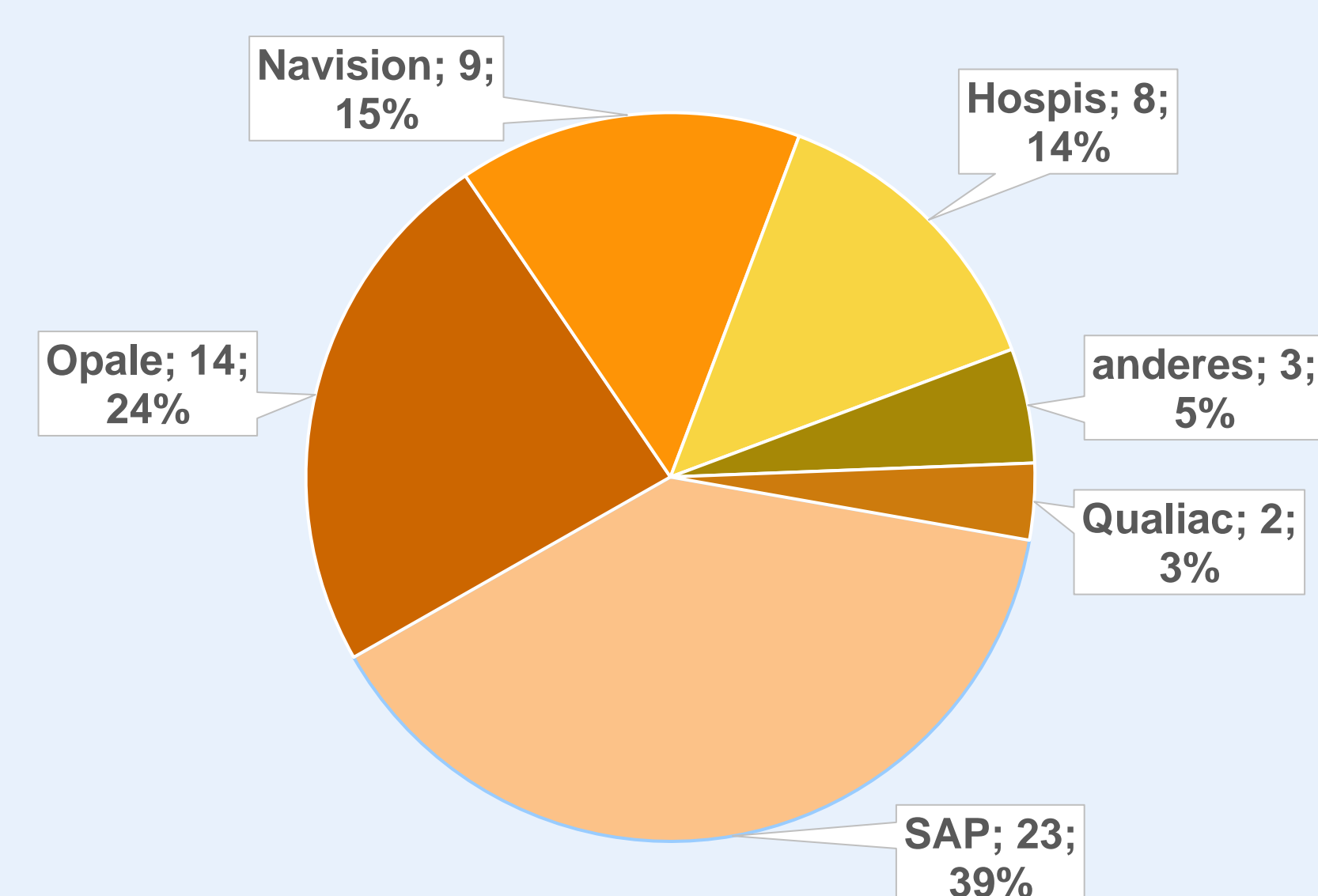
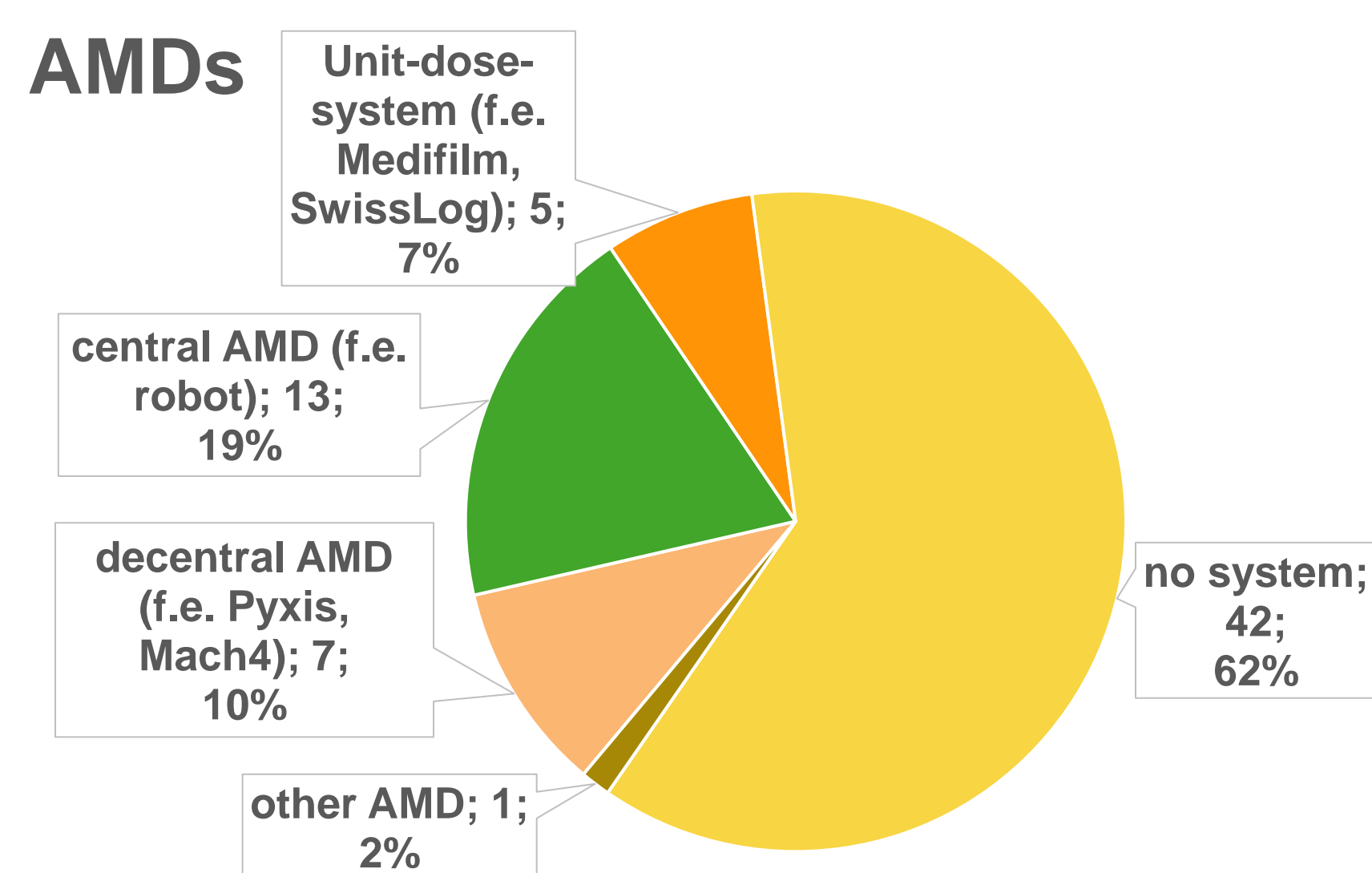


Figure 1: ERP (enterprise resource planning system)



Storage and dispensing robot	Number of robots in place
ROWA (BD Rowa)	3
EvoTec (Swisslog)	1
Mach4 Omnicell	1
Riedl Pysys GPI	1

Table 1: Storage and dispensing robots in place

Figure 2: Automated medication distribution systems

Bedside scanning: 25 (42%) institutions have fully (15/ 25%) or partially (10/17%) introduced and established it. 13 (22%) are planning to do so. There are 6 different areas of application: drug administration, chemotherapy, blood products, laboratory samples, implants and surgery.

Master data maintenance or structured drug data: In 51 (86%) houses such data are maintained by the pharmacy. Master data maintenance occur in ERP, CIS (clinic information system), CDSS (clinical decision support system) or a third system. The following structured clinical drug data occur in Swiss hospitals: renal and liver insufficiency, pregnancy and breast feeding, dosing (adults), divisibility of tablets, crushability, drugs via feeding tubes

Automated medication distribution system (AMD): 13 (19%) hospitals use a central storage and dispensing robot, 7 (20%) decentralised automated drug cabinets and 5 (7%) work with unit-dose-systems as drug blistering machines. The latter are used mainly in care homes and psychiatric institutions. 20 (34%) plan to introduce some new system in particular robots.

Automated ward delivery system (e.g. tube mail, self-propelled transporter, humanoid robot): Only one hospital declared to use such a system.

	in ERP of the hospital pharmacy	in clinic information system	in third system	no maintenance of these data
logistic data with automated interface	45 65%	11 16%	7 10%	6 9%
clinical data with automated interface	9 14%	31 48%	12 19%	12 19%
logistic data manually maintained	41 64%	7 11%	7 11%	9 14%
clinical data manually maintained	10 16%	28 44%	12 19%	14 22%
other data	7 13%	4 7%	10 18%	34 62%

Table 2: Master data maintenance by pharmaceutical personnel