Performance Indicators in Hospital Pharmacy: Experience of a Teaching Hospital With a Documentation Tool

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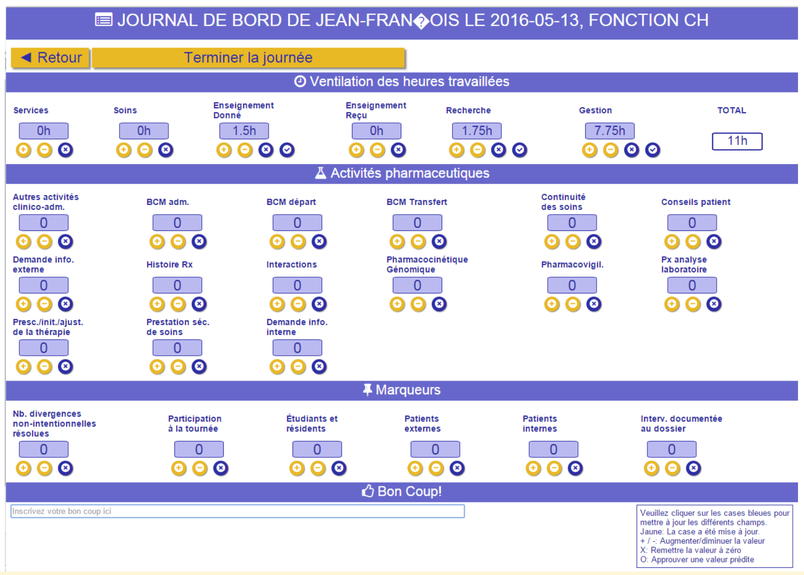
Background

- Most professional pharmacy associations recognize the importance of documenting pharmaceutical activities.
- Such documentation is usually a hospital-based decision and relies on a local consensus of indicators and tools.
- Pharmacy practice does include the 5 principal axis:
  - ⇒ Pharmaceutical services
  - ⇒ Pharmaceutical care
  - ⇒ Teaching
  - ⇒ Research
  - ⇒ Management

Objective

- To describe the pharmacy indicators collected and used by a teaching hospital



Methods

- This is a descriptive and retrospective study
- A documentation tool is
  - ⇒ Used by pharmacists to collect and describe their workload since 1998
  - ⇒ Available on the hospital intranet
  - ⇒ Completed by each pharmacist at the end of the day
- Data were extracted from the SQL database
  - ⇒ For all 27 indicators
  - ⇒ For 2 fiscal years from April 1st, 2014 until March 31st, 2016
- Only descriptive statistics were performed

Results

Data extracted represent a total of

- 125,520 worked hours
- 253,532 pharmaceutical interventions
  - 22% of interventions were written
- 136,676 patients' follow-up
- 94,865 information requests
  - 72% from other clinicians
  - 28% from external stakeholders
- 5,545 students' days

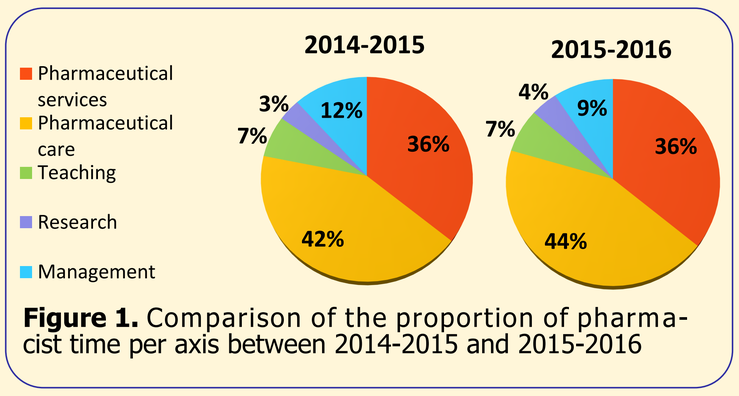


Figure 1. Comparison of the proportion of pharmacist time per axis between 2014-2015 and 2015-2016

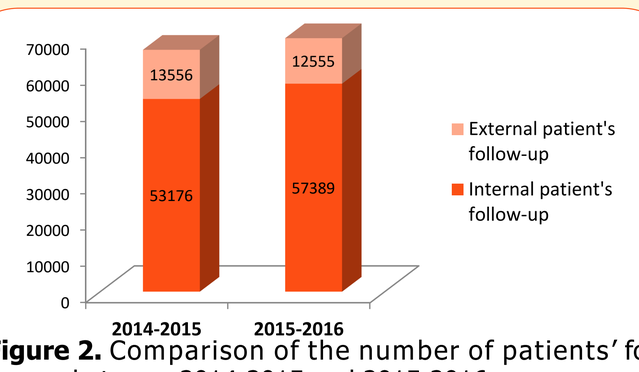


Figure 2. Comparison of the number of patients' follow-up between 2014-2015 and 2015-2016

Table 1. Comparison of the number of pharmaceutical interventions between 2014-2015 and 2015-2016

Pharmaceutical interventions	2014-2015 N (%)	2015-2016 N (%)	Changes
Drug therapy adjustment	61765 (52.6%)	75710 (55.7%)	+22.6%
Medication reconciliation at admission	7118 (10.2%)	8337 (9.9%)	+17.1%
Continuity of care	10630 (9.0%)	12868 (9.5%)	+21.1%
Patient counseling	7285 (6.2%)	6317 (4.6%)	-13.3%
Medical rounds	4729 (4.0%)	5609 (4.1%)	+18.6%
Other interventions	4795 (4.1%)	5023 (3.7%)	+4.8%
Laboratory orders	3465 (2.9%)	3786 (2.8%)	+9.3%
Medication error management	3630 (3.1%)	3373 (2.5%)	-7.1%
Pharmacovigilance	2771 (2.4%)	3796 (2.8%)	+37%
Pharmacokinetics	2522 (2.1%)	2447 (1.8%)	-3.0%
Medication reconciliation at discharge	2254 (1.9%)	1871 (1.4%)	-17.0%
Drug interactions	1287 (1.1%)	1390 (1.0%)	+8.0%
Medication reconciliation at point of transition of care	351 (0.3%)	334 (0.2%)	-4.8%
Total of interventions	**117,514 (100.0%)**	**136,018 (100.0%)**	**+15.7%**

Table 2. Comparison of different ratios between 2014-2015 and 2015-2016

Ratios	2014-2015	2015-2016	Changes
Ratio Pharmaceutical Care/Services hours	1.19	1.21	+2.2%
Number of patients' follow-up/worked hour	1.13	1.05	-7.5%
Number of information requests/worked hour	0.75	0.76	+1.8%
Number of interventions/worked hour	2.00	2.04	+2.1%
Number of students' days/1816 worked hours	82.56	78.16	-5.3%

Table 3. Profile of the average ratios depending on the pharmacists' function

Functions	Intervention/ worked hour	Information/ worked hour	Patient's follow-up/ worked hour	Students' days/1816 worked hours*
Hematology-Oncology	4,54	1,08	1,71	62,45
Information center	0,11	1,32	0,06	137,87
Management	0,62	0,32	0,12	155,51
Medication order review	0,54	0,98	0,04	8,67
Neonatology	5,41	0,97	1,53	37,78
Obstetrics-Gynecology	2,57	0,62	4,18	202,57
Others	0,15	0,16	0,03	51,19
Pediatric Intensive Care	3,90	1,24	0,86	71,16
Pediatrics	1,92	0,47	2,58	145,25
Preparations	0,41	1,46	0,06	102,83
Residents	0,28	0,06	0,41	35,91
Surgery	5,39	0,66	3,98	99,45
Teaching	0,05	0,04	0,02	58,08

* A pharmacist works 1816 hours per year

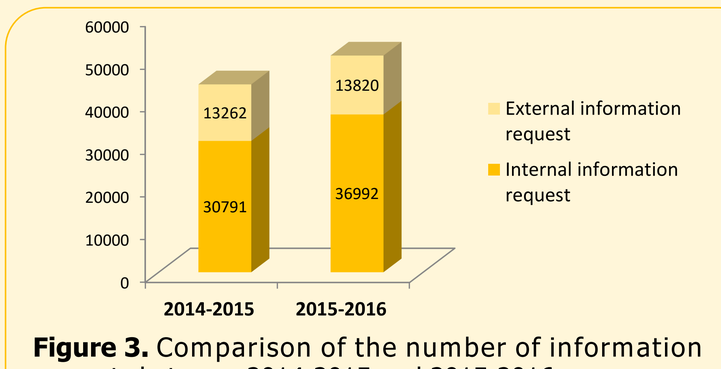


Figure 3. Comparison of the number of information requests between 2014-2015 and 2015-2016

Discussion

- The total number of worked hours increased by 13.3% between 2014-2015 and 2015-2016. Similarly, the total number of information requests increased by 15.3% and the total number of pharmaceutical interventions increased by 15.7%. These increases can be explained by the end of the pharmacist shortage in 2015 and full staffing.
- The limited number of indicators and tool used allow rapid data entry (~ 5 min./day) to provide a workable solution. The web interface allow an autonomous data entry by each pharmacist.
- Data to be collected appear to be sufficient to describe with sufficient details the five axis of pharmacy practice.
- Collected data are used to benchmark current practices between years and teams ; benchmarking with other hospitals is limited as there is no consensus on pharmacy indicators at a national level; data are not used to benchmark
  individuals. Also, data are shared with pharmacists and administrators to support the funding of pharmaceutical care year after year.
- While data entry can be affected by a memory bias if the information is not entered the same day, data collected appear to be relatively stable per individual.

Conclusion

- This study describes the activity of pharmacists within a teaching hospital
- The use of a documentation tool is feasible and useful to support the description and the benchmarking of pharmacists in the healthcare sector.
- Data collected can be used to support the funding of pharmaceutical activities.

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