ANALYSIS OF MEDICATIONS DISTRIBUTED BY RESIDENTIAL CARE FACILITIES FOR THE ELDERLY (RCFE): EVALUATION OF SOURCES OF POSSIBLE SAVINGS WITHIN 21 ESTABLISHMENTS TESTED

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Aim of the study

To assess precisely and on a large scale, from the SIAPDAMEDISSIMO SIAPDA® :
1. the cost of medication per unit dose and the cost structure, per day and per resident,
2. avoidable costs through improvement in the quality of prescriptions and by preparing in pill boxes.

SIAPDA : Système d'Information Assistant la Préparation des Doses à Administrer (Information System Assisting with the preparation of doses to be administered).

Equipment and method

Longitudinal study: 6 months, from 1 January 2010 to 30 June 2010.

Populations and consumptions studied: The data was collected from 19 dispensing pharmacies who supply 1,766 residents from 21 RCFEs representative of the whole of metropolitan France. The pharmacies are users of the SIAPDA. The RCFEs participate in the experiment (circular of 10 November 2009). The pharmacies and the RCFEs have signed an agreement with the PDA for total traceability of treatments. As it concerns anonymous information devoid of any clinical profile, the study only required the consent of pharmacists.

Data collection: The assistants or pharmacists entered in the SIAPDA, for each medicine delivered in a pill box or in a box, standard traceability information (medicine code, sale price, quantity delivered, batch, expiry date, etc.) and the number of units (up to the breakable fraction) according to the posological scheme prescribed by the physician. The information linked to the medication are from the Claude Bernard database®.

Statistical analysis: The sums and averages were calculated per resident. The Kolmogorov-Smirnov test shows that the cost values of treatment per day and per resident follow a normal distribution. The confidence intervals were calculated in Excel with a precision of 95%.
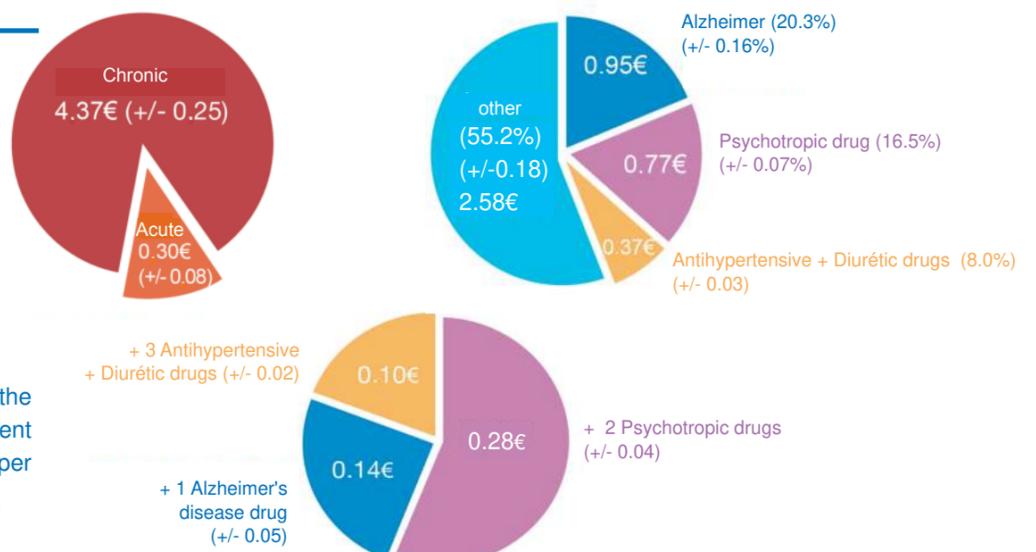
Results

The overall cost of treatment per day and per resident is on average €4.67 (+/- 0.29). The cost of chronic treatment is €4.37 (+/- 0.25) per day and per resident, i.e. 93.6% of the overall cost and 75.5% of the number of prescriptions.

44.8% of daily expenses are carried out within 3 therapeutic classes. The treatment of Alzheimer's disease represents a treatment cost of €0.95 per day and per resident (+/- 0.16), which equates to 20.3% of the overall cost,

Among the chronic treatments, additional expenses generated by the associations studied in the 3 therapeutic classes represent a treatment cost on average of €0.52 (+/-0.11) per day and per resident, or €0.48 per day and per resident excluding surpluses,

The cost of expensive drugs is on average equal to €0.36 (+/- 0.13) per day and per resident including 30.6% anti-anemia drugs (€0.11 per day and per resident) and 13.9% neuroleptic drugs (€0.05 per day and per resident),

Delivery surpluses, which represent the quantity of medicines delivered and charged for, although not necessary for the treatment, given the posological scheme prescribed by the physician (dosage, duration) and the size of the packaging delivered, represent an average cost of €0.33 (+/-0.05) per day and per resident. Preparing into pill boxes under pharmaceutical control would have enabled this waste to be avoided.

Conclusion

The average cost of treatment in RCFEs is equal to €4.67 per day and per resident. Savings are possible (€0.81 per day and per resident) by improving the quality of prescriptions (€0.48 per day and per resident excluding surpluses) and by preparing into pill boxes (€0.33 per day and per resident). Extrapolated to 574,677 residents in RCFEs, this represents a potential saving of 170 million euros per year. In co-analysis with existing clinical gerontology tools, the SIAPDA is an available and efficient management tool for pharmaceutical care in RCFEs to be used by professionals.

Analysis table

		Résidents (no.)	Résidents (%)	Prescriptions (no.)	Prescriptions (%)	Médicines (no.)	Médicines (%)	Daily cost total résidents (€)	DTC average total résidents (%)	average DTC / résident
1	Total	1,766	100%	14,023	100%	64,976	100%	8,255	100%	4.67
2	Chronic treatments	1,731	98.0%	10,588	75.5%	57,897	89.1%	7,725	93.6%	4.37
3	Intercurrent treatments	1,186	67.2%	3,435	24.5%	7,079	10.9%	530	6.4%	0.30
4	Alzheimer's disease treatments	485	27.5%	2,483	17.7%	2,845	4.4%	1,679	20.3%	0.95
5	Psychotropic drugs	1,425	80.7%	7,873	56.1%	14,371	22.1%	1,361	16.5%	0.77
6	Anti HTA and diuretics	1,445	81.8%	7,700	54.9%	14,015	21.6%	654	7.9%	0.37
7	+ 1 Alzheimer's disease drug	133	7.5%	445	3.2%	463	0.7%	247	3.0%	0.14
8	+ 2 psychotropic drugs	586	33.2%	2,620	18.7%	5,287	8.1%	498	6.0%	0.28
9	+ 3 antihypertensive and diurétic drugs	283	16.0%	994	7.1%	2,399	3.7%	172	2.1%	0.10
10	Sub-total 7+8+9					8,149	12.5%	917	11.1%	0.52
11	Sub-total 7+8+9 excluding surpluses					8,149	12.5%	852	10.3%	0.48
12	Delivery surpluses	1,727	97.8%	11,277	80.4%	45,644	70.2%	583	7.1%	0.33
13	Sub-total 11 + 12					53,793	82.8%	1,435	17.4%	0.81

Glossaire

(1) SIAPDA: Système d'Information Assistant la Préparation des Doses à Administrer (Information system assisting with doses to be administered) (2) Daily cost of treatment: calculated by using the value of drugs entered in the SIAPDA, divided by the number of days that all patients concerned were present over the period (3) Expensive drugs: unit price of the box higher than €100 VAT included (4) Alzheimer medications according to the Claude Bernard® database: Donepezil, Memantine, Tacrine, Rivastigmine, Galantamine (5) Psychotropic drugs: antidepressants, antiepileptics, anxiolytics, hypnotics, neuroleptics, sedatives, morphine and morphinomimetics, psychostimulants, Ketamine, Opium, Caffeine (6) delivery surpluses: Quantity delivered and charged for although not necessary for the treatment, given the posological scheme prescribed by the physician (dosage, duration),and the size of the commercial packaging delivered - Francis Megerlin - SDM-12/2009 (7) Intra-class therapeutic associations: There is an association if several drugs in the same class are prescribed at the same time to the same patient: the first drug of the class prescribed to the patient is not in association, the following ones are for the overlapping period. The cost of association is calculated pro rata for the treatment duration. (8) Quality of the data: To make the entered data reliable, data judged to be "incorrect" are discarded from the calculations. The medication lines entered are judged incorrect if at least one of the following conditions is fulfilled: a) the unit price entered is greater than 1.5 times the reference price, or less than 0.5 times the reference price (the reference price of a product is that from the Claude Bernard database), b) if the packaging of the product enables the number of boxes necessary to be calculated and that the quantity entered (number of boxes charged for) is greater than 3 times the number of boxes necessary.

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