

Role and impact of pharmacists in Belgium: a scoping review

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Background

- Pharmacy practice has evolved considerably in recent decades.
- The pharmacist plays more and more a clinical role and delegate the technical tasks to the pharmacy technicians.
- There is growing corpus of literature on the roles and impacts of the pharmacist and his collaborators; this literature can be appreciated by consulting platforms (e.g. Impactpharmacie.org) or by consulting published systematic or literature reviews.
- The evolution of the pharmacy practice takes into account the legal framework in place; it may be interesting to study the roles and consequences of the pharmacist in a given country.
- We were interested in the literature describing the roles and impacts of pharmacists in Belgium.

Objectives

The main objective is to review the literature and highlight the different characteristics of the pharmacists' **role** and the **impact** of their activities in Belgium.

Methods

- This is a scoping review.
- The literature search was carried out in **three databases**, PubMed, Embase and CINAHL between 01/01/2006 and 31/09/2019 (last update).
- The **search strategy** for PubMed contained the following terms: ("Pharmacists" [Mesh] OR "Pharmacy" [Mesh]) OR "Pharmacies" [Mesh] OR "Pharmaceutical Services" [Mesh] AND "Belgium" [Mesh]. The search strategy for Embase contained the following terms: (pharmacists or pharmacist) and belgium and the search strategy for CINAHL contained the following terms: belgium and pharmacists. The review was reinforced by a manual search.
- Two team members independently **selected studies** based on title and abstract and those deemed potentially relevant were obtained for a full analysis. Any discrepancies in the inclusion of the study in our review were resolved by consensus.
- Included** were studies, published in English, French or Dutch describing the role (descriptive study) and impact (study with impact assessment) of pharmacists in Belgium at all levels of care. No limits have been established for particular groups of patients or age groups, nor for methodologies, given the limited number of studies on the subject.
- Excluded** were studies without full description of the pharmaceutical intervention, studies in which it was impossible to separate the activity of pharmacists from that of other health professionals, studies in which the pharmacist played only a role minor or passive, studies whose results were solely attributable to a computer or a technological tool and studies whose results were not specific to Belgium.
- Each article was assigned one or more **pharmaceutical interventions**, none, one or more **pathologies targeted** by the pharmacist's intervention, and none, one or more **patient care programs** involving the pharmacist.
- For each study included with issues related to the impact of the pharmacist, the following elements were extracted: type of **impact measure** and effect of impact (positive, neutral or negative).

Results

Fig. 1: Cartography of selection of articles

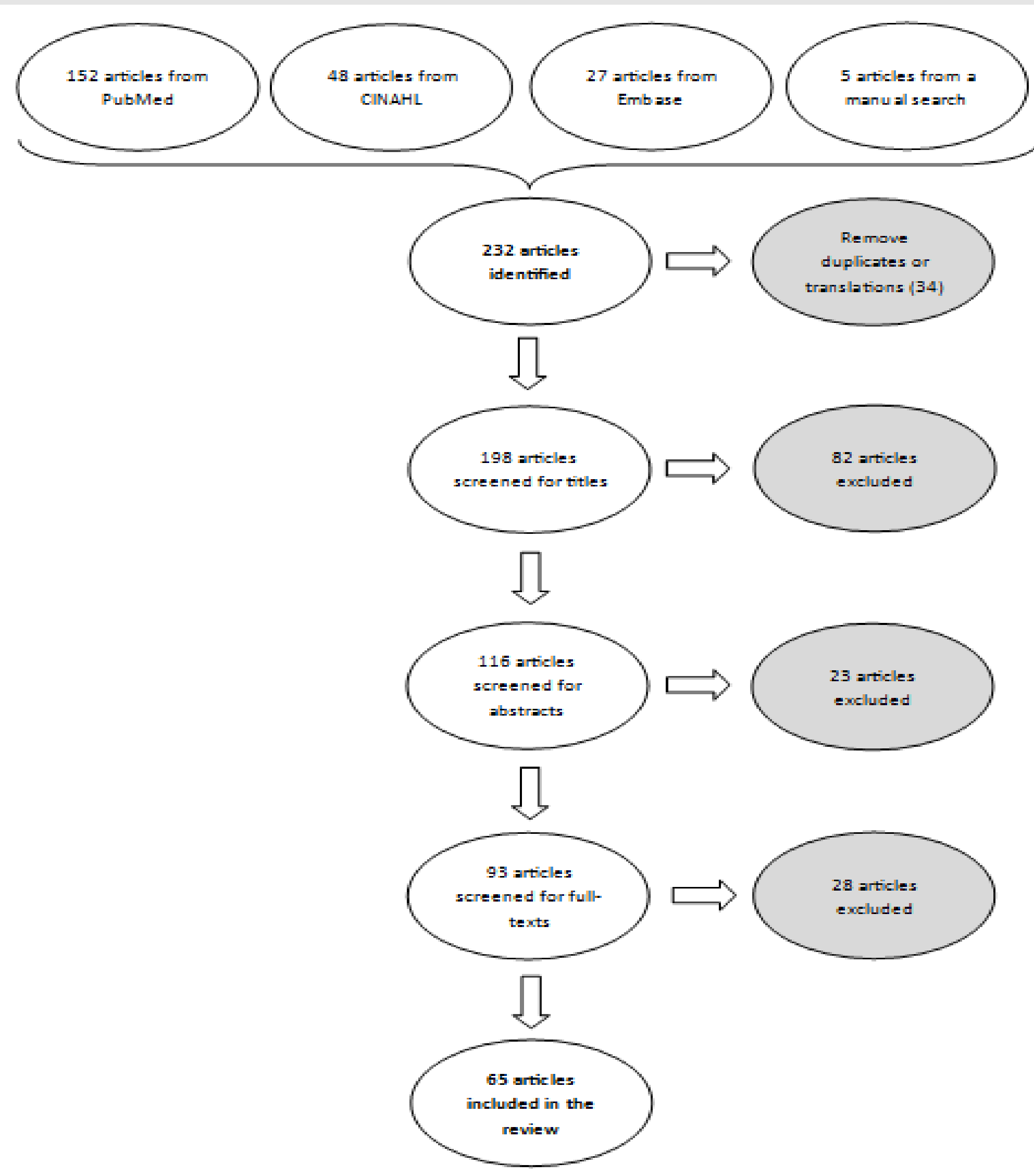


Fig. 2: Number of articles published by year

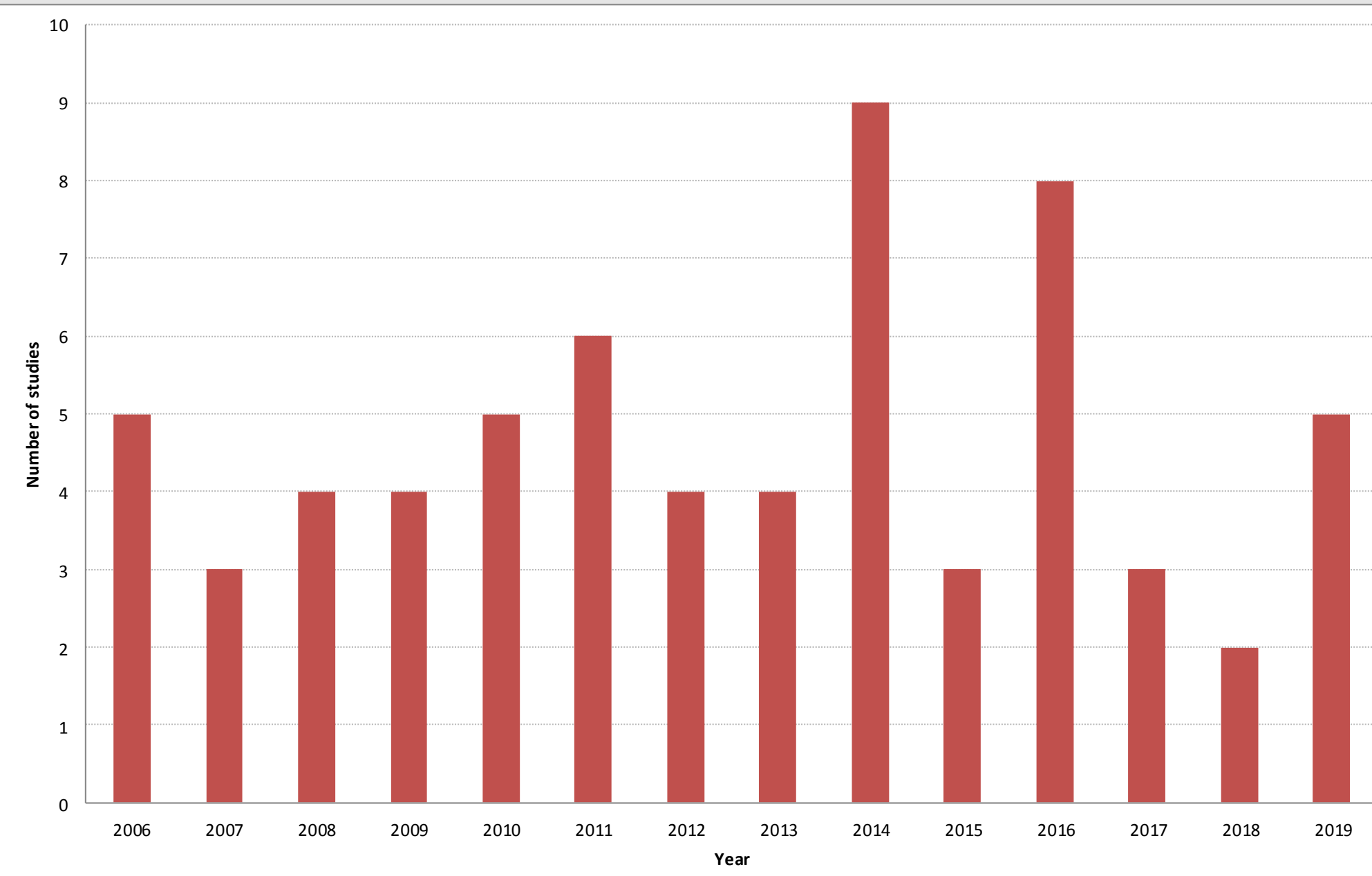


Fig. 3: Proportion of articles by practice settings

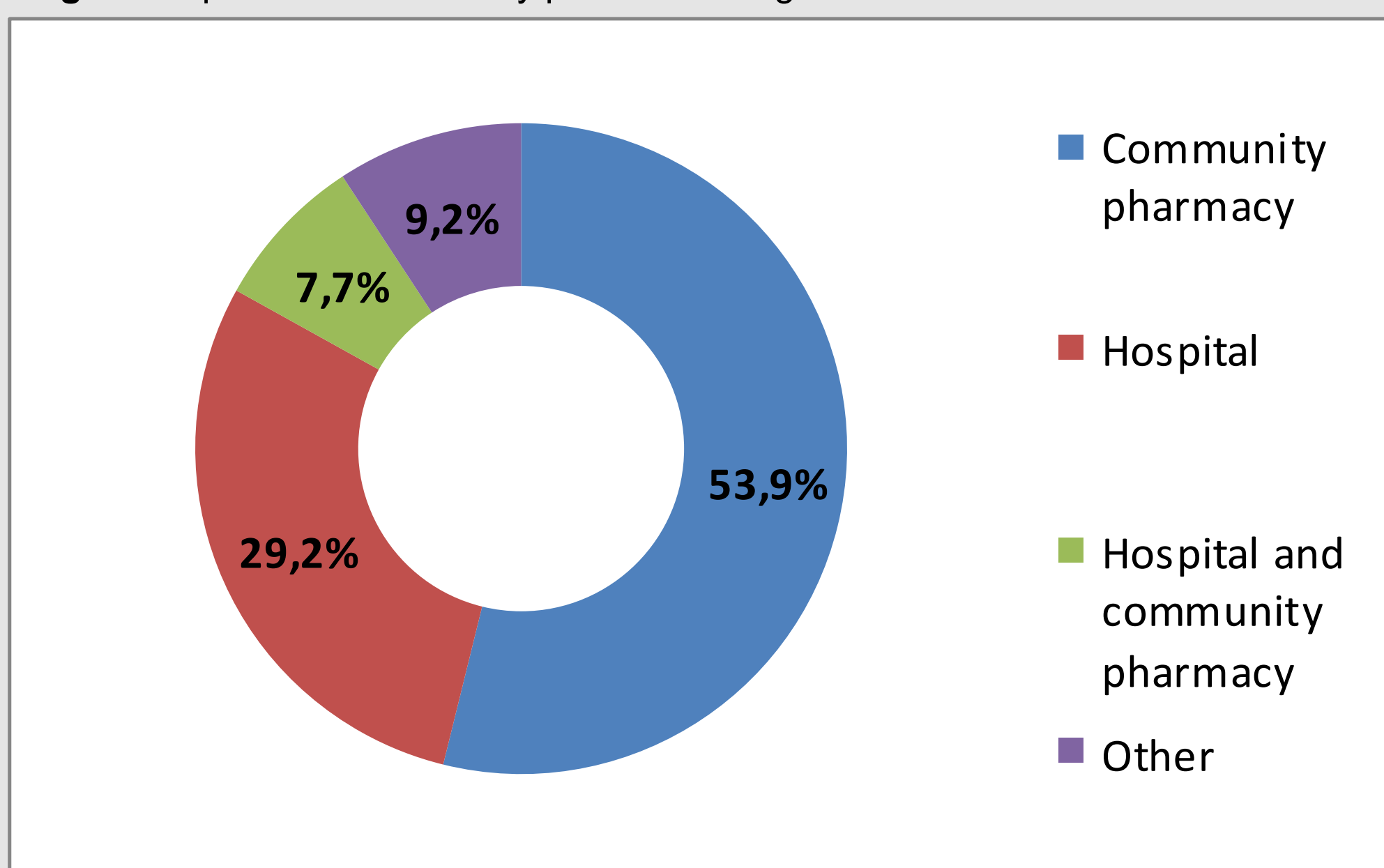


Fig. 4: Number of articles per pharmaceutical activities and pharmacy practice settings

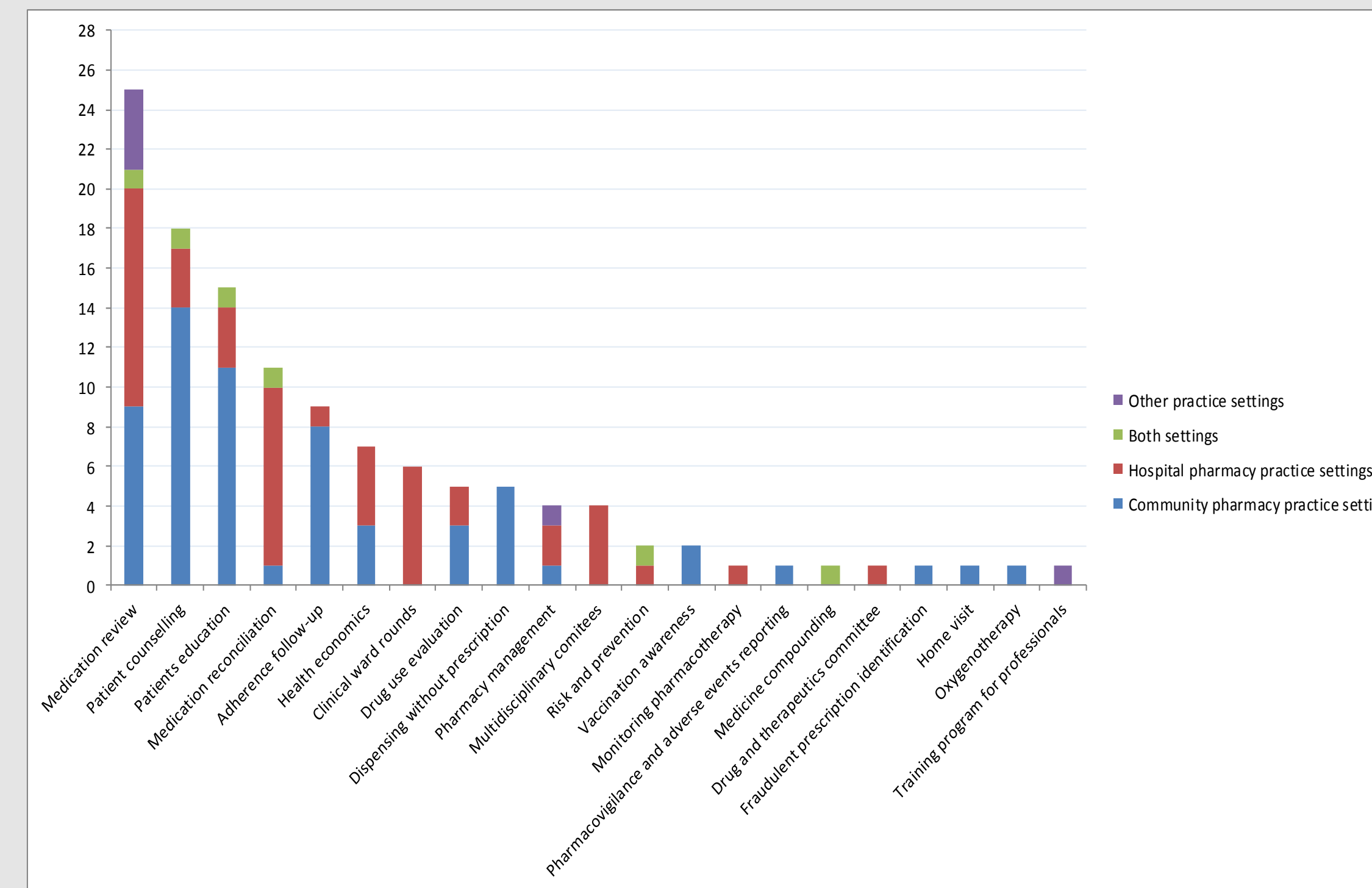


Fig. 5: Number of articles per patient care programs and pharmacy practice settings

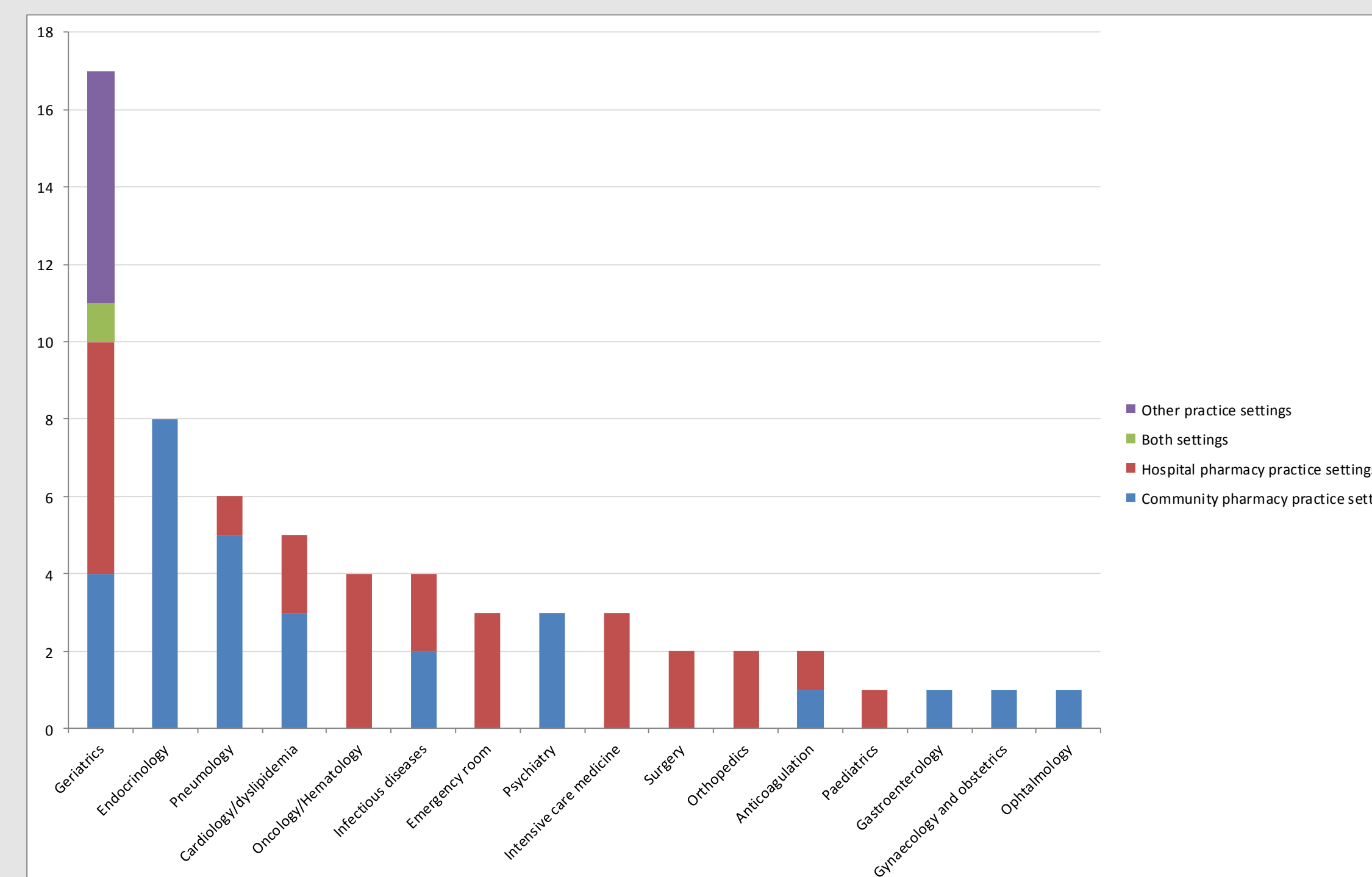


Fig. 6: Number of articles per targeted diseases and pharmacy practice settings

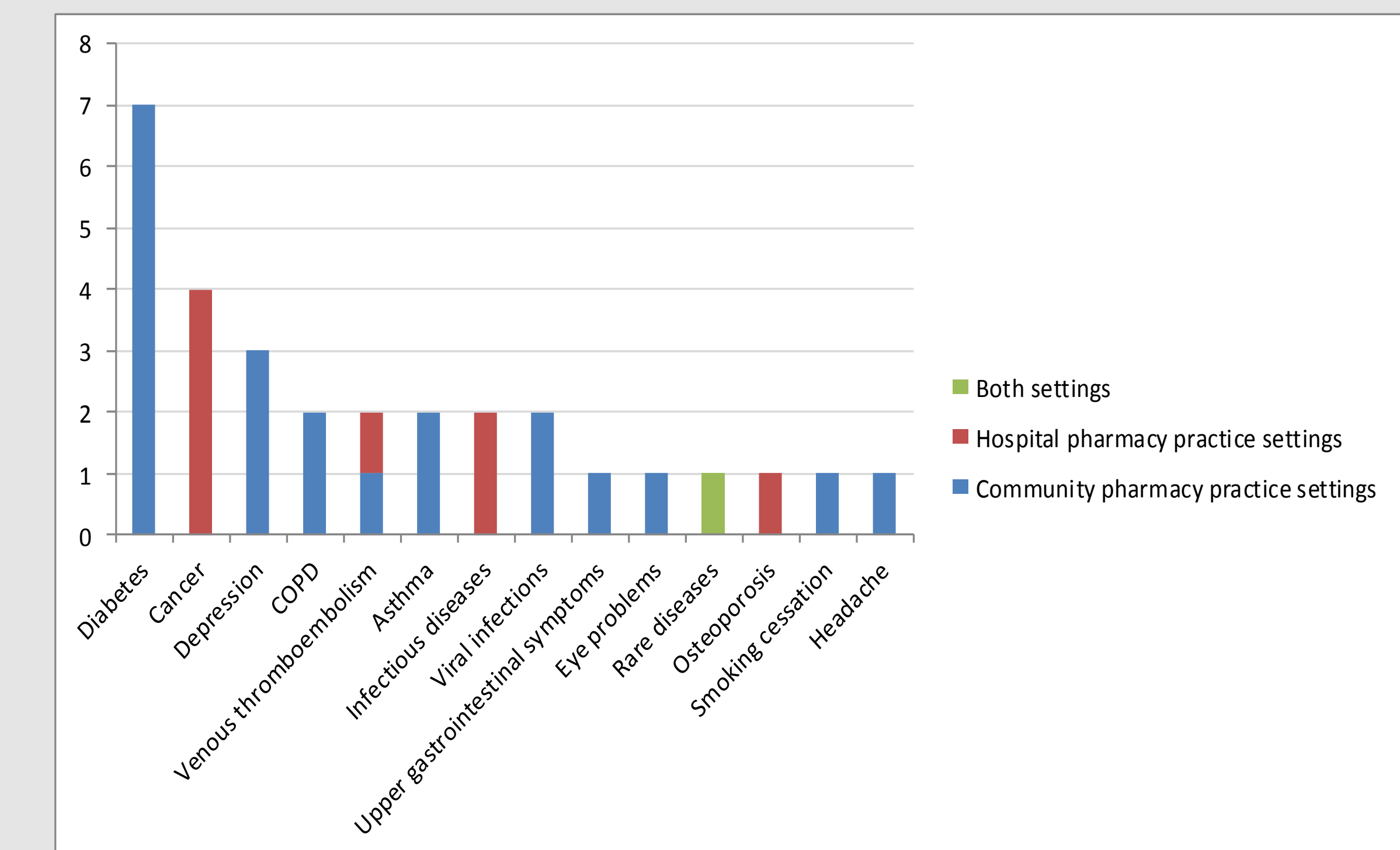


Fig. 7: Profile of outcome measures with impact evaluation and pharmacy practice settings

| Outcomes measures | Number of outcomes measures | Positive effect | | | Neutral effect | | | Negative effect | | |
|----------------------|-----------------------------|--------------------|----------|-------|--------------------|----------|-------|--------------------|----------|-------|
| | | Community pharmacy | Hospital | Other | Community pharmacy | Hospital | Other | Community pharmacy | Hospital | Other |
| Morbidity | 17 | 5 | 4 | 3 | 3 | 0 | 2 | 0 | 0 | 0 |
| Costs | 6 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Medication errors | 4 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Medication Adherence | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Satisfaction | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Adverse reactions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mortality | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 35 | 23 | | | 12 | | | 0 | | |

Discussion / Conclusion

- General profile of included studies** - Our literature review highlights a majority of descriptive studies (73.9%) without measuring the impact of the pharmacist. It is more complex and costly to conduct a study with outcomes measuring the effect of the pharmaceutical intervention. In addition, pharmacists are trained to treat patients and not to perform evaluative research. In Belgium, research is insufficiently funded and evaluative research is probably a very limited part of research initiatives.
- Profile of studies by activity, by illness and by program of care** - With respect to the pharmaceutical activities evaluated in this review, the studies focus mainly on medication reviews, patient counseling, therapeutic patient education and medication reconciliation activities. With regard to the pharmacist care programs evaluated in this review, geriatrics is the primary care program that has been identified. With regard to the pharmacist-targeted pathologies assessed in this review, diabetes is the main disease studied.
- Profile of studies by practice setting and impact measurement including observed effect** - Regarding the impact measures associated with the pharmaceutical interventions evaluated in this review, a majority of the measures have positive effects (65.7%, 23/35); many have no effect (34.3%, 12/35) and no measure has a negative effect.
- Does Belgium have a plan to develop clinical pharmacy?** An action plan has been implemented to develop clinical pharmacy in Belgian hospitals for the 2015-2020 period in order to improve the quality and safety of pharmaceutical care, to offer a better service to the patient, to ensure transmurial care and control costs.
- And are there other challenges?** The pharmacy curriculum could benefit from a better exposure of pharmacy students to evaluative research about the roles and the impacts of pharmacists. Better funding of evaluative research in pharmaceutical practice could be achieved, with the identification of relevant research targets in line with the action plan for the implementation of clinical pharmacy in Belgium. As Belgium faces difficulties in recruiting pharmacists, at least in hospitals and is struggling with a huge budget deficit in healthcare, decision makers should consider using these results and investing in pharmacy practice to support the development of clinical pharmacy practice.
- Limitations** - This scoping review only included three databases. The interventions of pharmacists described in the studies were not necessarily reflecting the current pharmacy practice given the experimental nature of the studies. The studies' selection was double blinded but the extraction was of the information was single-blinded. Finally, the study did not describe the magnitude of the measured impacts.
- Conclusion** - This is the first review of the literature on the roles and impacts of the pharmacist in Belgium. Sixty-five articles were selected, 17 of which included measures of the impact of pharmaceutical activity. Of the 35 impact measures associated with pharmaceutical interventions, 23 included positive effects, 12 neutral effects and none of the negative effects. These data are part of the action plan for the development of clinical pharmacy in Belgian hospitals for the period 2015-2020.