

# Roles and impacts of hospital pharmacy technicians: A literature review

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## Background

- Pharmacy practice is based on collaboration between pharmacists and pharmacy technicians.
- A better knowledge of the roles and the impacts of pharmacy technicians can involve a better organize of pharmaceutical activities and improve patient care.
- There are numerous studies and literature reviews published about the roles and the impacts of pharmacists. What about pharmacy technicians?

## Purpose

This literature review aims to describe and assess the roles and impacts of hospital pharmacy technicians.

## Material and methods

- This is a review of literature.
- Literature search conducted on PubMed from January 1st to April 29th, 2016 :
  - “pharmacy technician[All Fields] OR pharmacy technicians[All Fields].
- Selection of French and English articles :
  - Describing the roles and impacts of hospital pharmacy technicians.
  - Based on title followed by abstracts then entire article.
- Data extraction
  - Country, journal, type of study, activities, indicators and impact.
  - Performed by two authors and supervised by one reviewer.
  - For each article included in the analysis, all relevant activities were identified.
  - Key indicators that document the impact of pharmacy technician with statistical analysis or with only quantitative or qualitative metrics were identified and categorized as mortality, morbidity, adverse effects, adherence, medication errors, costs, satisfaction and others.
  - No statistical analysis was conducted.

## Results

### 36 articles included

- **Articles published in 6 country**
  - 58% (21/36) United States of America,
  - 7% (6/36) in United Kingdom,
  - 14% (5/36) in Canada,
  - 6% (2/36) in Denmark
  - 3% (1/36) in Netherlands et en Australia.
- **Articles classified in 8 pharmacy technician activities**
  - Technical support to specific clinical pharmacists activities (n = 19 articles/n=21 indicators)
  - Medication reconciliation activities (n=19 articles/n=12 indicators)
  - Support to patient counseling activities (n=9/n=10)
  - Drug procurement (n=8/n=9)
  - Tech-check-tech activities (n=4/n=6)
  - Drug dispensing activities (n=3/n=4)
  - Other activities (drug administration, follow-up phone call, etc.) (n=7/n=11)
- **Articles with positive impact of pharmacy technicians**  
17 articles for a total of 31 indicators. These indicators were related to:
  - Medication errors (n=10),
  - Morbidity (n=3),
  - Costs (n=2),
  - Adherence (n=1),
  - Satisfaction (n=1)
  - Others (number of patients, time spent, etc.) (n=14).
- **Articles with neutral impact of pharmacy technicians**  
11 articles for a total of 18 indicators
- **No included article reported negative impact of pharmacy technicians.**

## Discussion

- There are a diversification and an evolution of the tasks of the pharmacy technicians as well as the evolution of the pharmacy and pharmacy profession
- Pharmacists may delegate many technical tasks while ensuring the quality level.
- The articles found after 1996 are less oriented on the verification between technicians (tech-check-tech) but more on the support to the pharmacists
- The development of new activities and the redeployment of the workforce must not be at the expense of the supply, storage and dispensing activities of the drug and other pharmaceutical missions.
- In the scientific literature, the positive effects of the pharmacist in clinical services are widely described and to provide more pharmaceutical care to patients, the development of new roles for PPHs is a solution to consider.

## Conclusion

There is an emerging literature about the roles and the impact of pharmacy technicians and they can have a positive impact in the drug-use process.