# Antibiotic Prescribing: A Risk Perspective

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## Abstract (300 word limit)

Statement of the Problem: Antibiotics remain a mainstay in the treatment of potentially fatal bacterial diseases, preventing millions of deaths every year.[1] Optimization of antibiotic use is crucial to ensure rational and effective use whilst limiting use which contributes to antibiotic resistance in the community due to excessive use or under-dosing. A multidisciplinary team concept, including protocol-driven pharmacist prescribing, supports efforts in ensuring rational use of antibiotics by patients in the community. The purpose of this study was to describe the pharmacist's perceived risks of potential antibiotic prescribing by pharmacists. Methodology: A self-administered questionnaire was developed[2-5] and validated via a two-round Delphi technique, and was disseminated to pharmacists practicing in Malta, electronically and personally through visits to pharmacies. The questionnaire had three sections and comprised Likert-scale questions anchored by 0 denoting the lowest score and 4 denoting the highest score, open-ended and close-ended questions. Data analysis was undertaken using the Statistical Package for the Social Sciences. Findings: Two hundred and nine pharmacists from a total sample of 930 answered the questionnaire, (6% margin of error). When pharmacists were asked to rate the importance of drug-related factors when prescribing antibiotics, 84%, (n=176) replied that the 'activity of antibiotic against the most likely pathogen present' was the most important. Pharmacists perceived that 'incomplete patient assessment leading to misdiagnosis' (57%, n=120), is a risk that patients might be exposed to, if drug-related factors are not taken into account prior to prescribing (Table 1). Pharmacists (44%, n=92) felt very confident about their knowledge of 'penicillins'. Conclusion & Significance: Pharmacists could reflect on the risks to patients in the event of pharmacist prescribing of antibiotics indicating their ability to recognize challenges in optimizing rational use of antibiotics.

## Image

| Risks | Percentage of Pharmacists |
|---|---|
| Misdiagnosis | 57 (n=120) |
| Increased bacterial resistance | 53 (n=111) |
| Possible therapeutic failure | 50 (n=105) |
| Under/over treatment | 39 (n=81) |
| Undesired consequences in co-morbidities | 38 (n=79) |
| Increased interactions | 37 (n=77) |
| Increased allergic reactions | 35 (n=73) |
| Increased side-effects | 32 (n=67) |
| Patients not taking medications | 30 (n=63) |

Table 1: Pharmacist perceived risks to patients if essential information is not provided prior to prescribing.

## Recent Publications (minimum 5)

1. Flasche S, Atkins KE (2018) Balancing Benefits and Risks of Antibiotic Use. J Infect Dis 218(9):1351-3.
2. Attard Pizzuto M, Serracino-Inglott A, Lilian M. Azzopardi (2019). Exploring views of pharmacists on antibacterial prescribing: A Maltese perspective. IJPP 27(3):256-63.
3. Attard Pizzuto, M., Serracino-Inglott, A., & Azzopardi, L. M. (2015, Sep). A risk-based approach towards pharmacist prescribing. Poster session presented at the FIP 75th World Congress of Pharmacy and Pharmaceutical Sciences, Düsseldorf, Germany.
4. Attard Pizzuto, M., Serracino-Inglott, A., & Azzopardi, L. M. (2016). Perceptions of potential antibiotic prescribing by pharmacists. European Journal of Hospital Pharmacy 23(Suppl 1): PS-016.
5. Attard Pizzuto M, Serracino Inglott A, Azzopardi LM. Physician and pharmacist perception on risks associated with potential antibiotic prescribing by pharmacists. Malta Medical Journal 2015;27(Suppl):P.15.



## Biography (150 word limit)

* Maresca Attard Pizzuto studied Pharmacy at the University of Malta, Faculty of Medicine and Surgery and graduated in 2008 and obtained her Ph.D. Degree in 2016. Her research work was related to risk and risk management in various pharmaceutical processes, and evaluated ways how risk in different pharmaceutical settings can be measured. Her work was presented in a number of conferences including the European Association of Faculties of Pharmacy, the European Association of Hospital Pharmacists, the International Pharmaceutical Federation and the American College of Clinical Pharmacy. Dr Attard Pizzuto is an academic at the Department of Pharmacy, University of Malta and her lecturing portfolio extends from applied pharmaceutical science to pharmaceutics, pharmaceutical regulatory science and drug information and statistics. She is also involved in the supervision of a number of undergraduate and postgraduate pharmacy students.

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