INTRODUCTION

- Benefit-risk assessment is a critical process in regulatory decisions for development and registration of medicines.
- The environment for the assessment of medicines tends more towards profiling safety and efficacy.
- Therefore, there is an increasing need to articulate and account for these benefit-risk decisions.
- Little information is currently available of the benefit-risk assessment approaches used by regulatory agencies and pharmaceutical companies, and hence the reason for this study.

AIMS AND OBJECTIVES

- A study was constructed to investigate the current approaches and future directions for benefit-risk assessment.
- The objectives of the study were to:
  - Identify agencies’ and companies’ current approaches to benefit-risk assessment.
  - Establish the criteria for including a framework/model for benefit-risk assessment, and their advantages, disadvantages, barriers, and possible solutions as perceived by agencies and companies.

METHODOLOGY

- The study included the following areas:
  - The current systems employed by organizations for the benefit-risk assessment of medicines during development and approval.
  - The perception of the need for an appropriate benefit-risk framework.
  - Factors for reviewing benefit-risk frameworks.
  - The perceived advantages and barriers to implementing benefit-risk frameworks.
  - Development of visualization tools for communicating benefit-risk decisions.

RESULTS

Profile of Respondents

- Eleven out of 14 agencies (79%) responded, which included:
  - The European Medicines Agency (EMA)
  - The Scottish Medicines and Healthcare products Regulatory Agency (MHRA)
  - The Welsh Medicines and Healthcare products Regulatory Agency (WHRAs)
  - The Australian Therapeutic Goods Administration (TGA)
  - The Therapeutic Goods Administration, Australia (TGA)
  - Health Canada
  - The National Health and Medical Research Council (NHMRC)
  - The United States Food and Drug Administration (FDA)
  - The US Department of Health and Human Services (HHS)
  - The European Medicines Agency (EMA)
  - The Therapeutic Goods Administration, Australia (TGA)
  - Health Canada
  - The National Health and Medical Research Council (NHMRC)
  - The United States Food and Drug Administration (FDA)

Twenty out of 24 companies (83%) responded, comprising of both large and small organizations.

None of the organizations used a fully quantitative system.

Six out of 11 agencies and 9 out of 20 companies used a semi-quantitative systems.

Study Outcomes

Figure 1. Barriers to implementing semi-quantitative or quantitative frameworks

Major barriers were the lack of an accepted and scientifically validated framework.

10 out of 15 responders using semi-quantitative systems were not satisfied.

Methodologies deemed useful and relevant by responders were not used by their organizations currently.

Figure 2. Plans to change to semi-quantitative or quantitative systems

DISCUSSION

- The stakeholders considered any proposed framework:
  - Is likely of a semi-quantitative nature.
  - Would have the flexibility to incorporate existing assessment methodologies.
  - Is capable of enhancing communication.
  - Should cover both agencies and companies, and be applied across the entire life cycle of a product.
  - Should be guided by a coordinating committee in the development and implementation of the framework.

CONCLUSION

- Agencies and companies are looking for a change in their current way of assessing the benefits and risks of medicines.
- The study highlighted the agreement between agencies and companies in the following areas:
  - Advantages and purposes of a benefit-risk framework.
  - Characteristics of an ideal framework.
  - Directions for developing the framework.
  - Factors for reviewing framework.
  - Barriers to implementing a framework.

RECOMMENDATIONS

- Form a coordinating committee to steer the development and implementation of a universal framework.
- Identify relevant methodologies to be used within an overarching framework.
- Use visualization tools for communicating benefit-risk decisions.

FUTURE CHALLENGES

- Future challenges are to:
  - Develop an internationally acceptable and standardized framework for benefit-risk assessment.
  - Identify when and how patients should be included in benefit-risk decisions, both in drug development and regulatory review.
  - Build a tool box of methodologies adaptable to different situations.

DISCLOSURE

- Authors of this presentation have the following to disclose concerning personal financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:
  - James Leong: Nothing to disclose.
  - Neil McAuslane: Nothing to disclose.
  - Stuart Walker: Nothing to disclose.
  - Sam Salek: Nothing to disclose.