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Burden of Low-Molecular-Weight Heparin Switching in the UK and Canada

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Introduction

Switching between low-molecular-weight heparins (LMWHs) on hospital formularies often takes place as contracting opportunities occur. Despite this, there is a lack of published literature on the administrative activities required to implement this switch and the associated administrative burden undertaken by hospitals to do so.

In order for hospitals to make well-informed decisions when considering non-medical switching of LMWHs on the hospital formulary, it is necessary to understand the administrative time and cost burden associated with this switch.

Objective

To explore the administrative time and cost burden on hospitals in Canada and the United Kingdom (UK) when undertaking a non-medical switch of LMWHs on the hospital formulary.

Methods

A targeted, English-language literature review was conducted in November 2023 to identify the administrative burden associated with non-medical switching of LMWHs. Due to the limited literature, the search was expanded to administrative activities associated with general non-medical switching of medications. A range of activities were identified and categorised into the administrative items listed in Table 1.

Table 1. Identified categories outlining the administrative burden associated with non-medical switching of medications

Activity	Canada
Protocols	Review of clinical profiles and update of hospital/pharmacy protocols
Training of hospital and pharmacy staff	Creation, organization and implementation of training on the new LMWH
Hospital- and pharmacy-wide communication	Communication and coordination across hospital departments
Supporting materials	Development or management of new materials to support the switch i.e., flyers, posters
Educational resources	Adaptation, approval and distribution of updated educational materials across all relevant departments
Administration systems	Update of clinical and prescribing platforms
Procurement systems	Update of procurement platforms
Stock management	Stock management during transition, including use or disposal of existing, pre-switch stock

- A 10-minute, self-complete survey was developed and administered to chief hospital pharmacists (CHPs) in Canada (n=15) and the UK (n=15) in June 2024.
- Inclusion criteria for CHPs were: a minimum of 1 years' experience in their role at a hospital with a minimum of 300 beds; experience of a switch in hospital formulary medication during their time in their current role; and experience of formulary committee decision-making for a formulary switch (not exclusive to LMWH products) during their time in their current role.
- The survey qualitatively and quantitatively assessed the administrative time and cost burden experienced by CHPs following a decision to switch LMWH medications on their hospital formulary.
- CHPs were asked to rank activities based on time spent and associated costs incurred. An estimation of average time spent on each activity was also collected.
- CHP opinion on the importance of the administrative burden on switch decision-making at their hospital was also gathered.
- No identifiable private information was collected; thus, this project did not require Institutional Review Board review or approval.

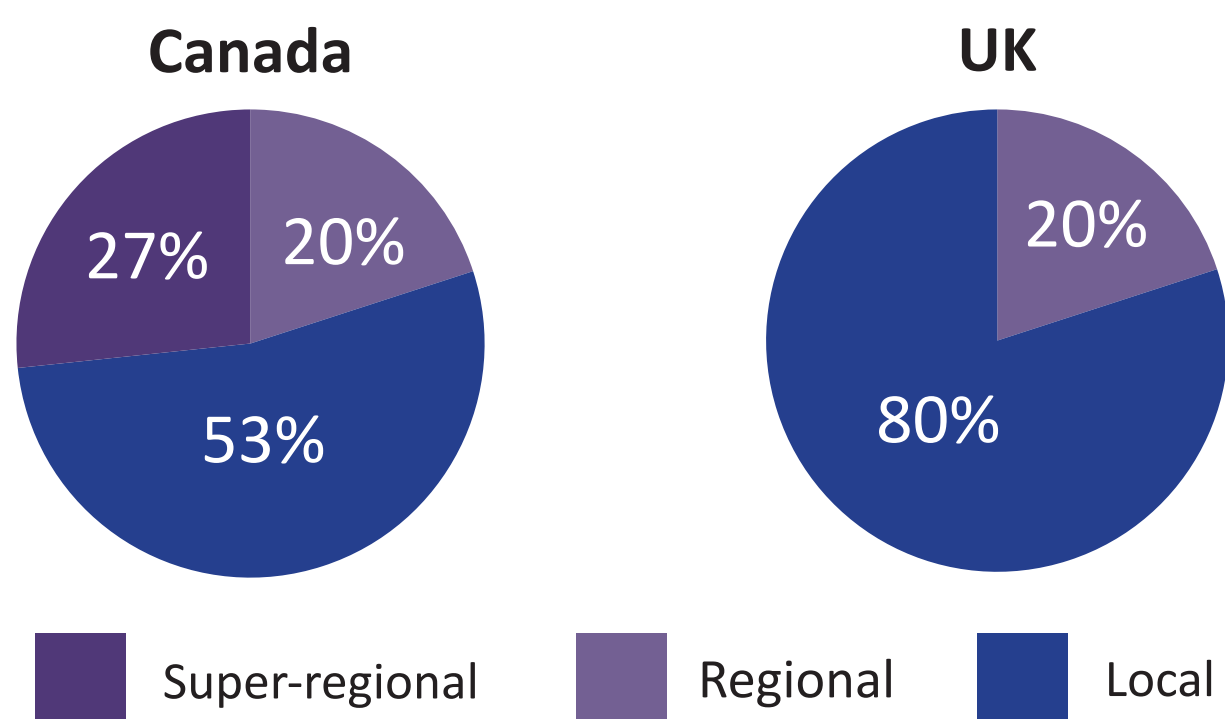
Results

Demographics

100% (n=30) of the CHPs surveyed experienced a switch in LMWHs on their hospital formulary during their time as a CHP.

- Participants had an average of 10 years' experience in their role as a CHP (Canada: 10 years; UK: 11 years).
- The majority of participants across both countries were employed at **regional (e.g. teaching) hospitals** (Figure 1).

Figure 1. Participant hospital type



Time burden

Switching-related hospital administrative activities

- The most commonly reported activities occurring in hospitals following a decision to switch LMWHs on the hospital formulary were review and update of hospital and pharmacy **protocols**, **training of hospital and pharmacy staff** and **hospital-and pharmacy-wide communication** (Table 2).
- Development or management of new **supporting materials** was the least commonly occurring activity following a switch at participant hospitals.

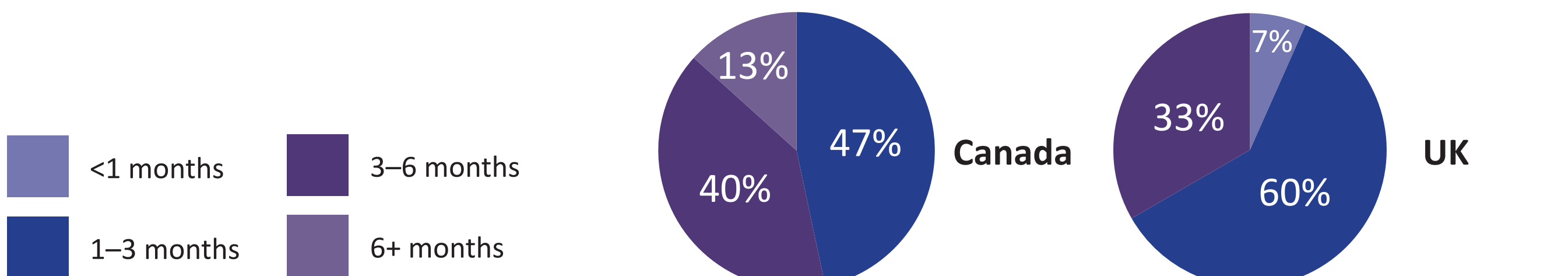
Table 2. Mean occurrence of activities following a LMWH switch on the hospital formulary

Activity	Canada	UK
Protocols	87%	100%
Training of hospital and pharmacy staff	87%	100%
Hospital- and pharmacy-wide communication	93%	93%
Educational resources	87%	93%
Stock management	87%	87%
Procurement systems	80%	93%
Administration systems	80%	87%
Supporting materials	67%	60%

Duration of the average LMWH switching process

- The most commonly reported duration for a switch to complete at a hospital, following the decision to switch, was **1–3 months**.
- The UK had a lower median duration for the switching process to complete of **1–3 months**, compared with **3–6 months** in Canada (Figure 2)

Figure 2. Time taken for the average switching process to complete at participant hospital



Ranking of switching activities by associated time burden on hospitals

- The top two administrative activities ranked as the greatest time burden on hospitals according to participants were **protocols** and **training of hospital and pharmacy staff** (Figure 3).

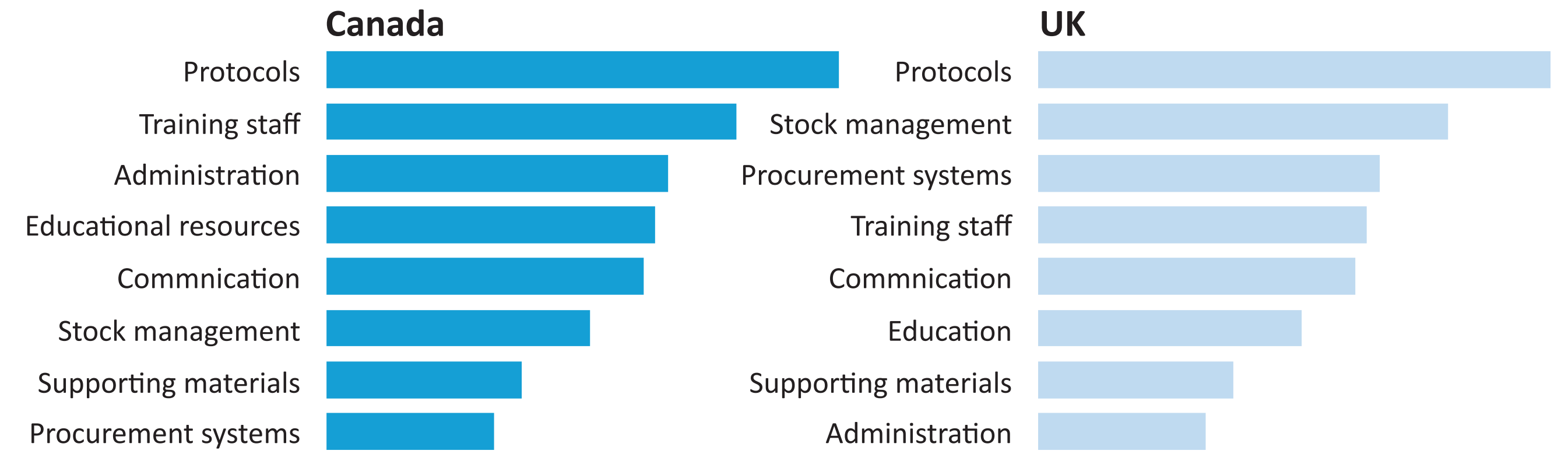
Figure 3. Participant ranking of activities by time burden on participant hospitals

	Canada	UK
Greatest burden	1 Protocols	Protocols
	2 Training of hospital and pharmacy staff	Training of hospital and pharmacy staff
	3 Administration systems	Educational resources & Hospital- and pharmacy-wide communication
	4 Educational resources	Educational resources & Hospital- and pharmacy-wide communication
	5 Hospital- and pharmacy-wide communication	Administration systems
	6 Stock management	Stock management
	7 Supporting materials	Procurement systems
Least burden	8 Procurement systems	Supporting materials

Time spent by CHPs on switching-related administrative activities

- During the average switching week, reviewing and updating **protocols** was the administrative activity participants spent the most of their week on in both Canada (15% of working week) and the UK (18% of working week).
- Across all participants, the average percentage of a switching week spent on a switching-related activity was 9.3% (Canada: 9.5%; UK: 9.2%).

Figure 4. Portion of the average switching week spent on administrative activities

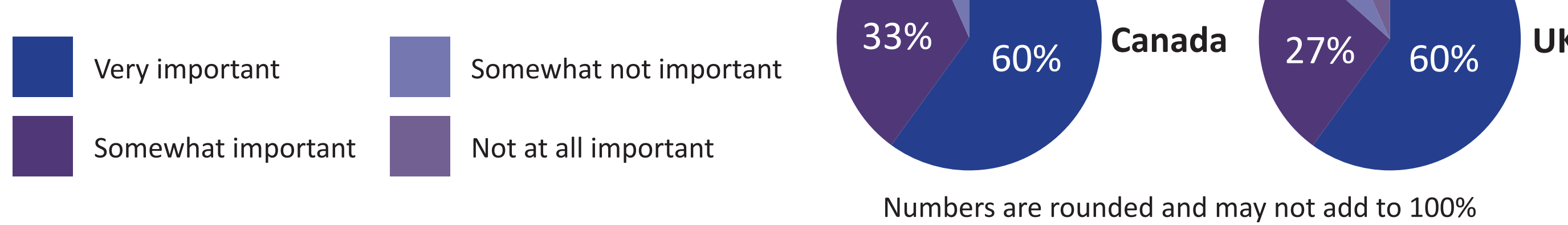


Importance of time burden associated with a change in hospital formulary medication

90% (n=27) of all survey participants said that the time burden associated with a change in hospital formulary medication was **Very important** or **Somewhat important**, when making the decision to switch from one LMWH to another on the hospital formulary.

- Overall, 93% (n=14) and 87% (n=13) of Canadian and UK participants, respectively, said time burden was either **Very important** or **Somewhat important** (Figure 5).

Figure 5. Participant opinion on the importance of time burden in LMWH switch decision making



Cost burden

Primary source of costs for switching-related activities

- Averaging across all activities, **hours spent by staff** was the primary expense to hospitals.
- Administration systems** was the only item where the primary source of costs across participants in both countries differed, with **information technology** as the primary source, closely followed by **hours spent by staff** in responses (Table 3).
- Options for the primary expense for each switching-related activity were: **hours spent by staff**; **subcontractors**; **materials**; **information technology**; **other**.

Table 3. Primary source of costs for each switching-related activity

Activity	Canada	UK
Protocols	Hours spent by staff	Hours spent by staff
Training of hospital and pharmacy staff	Hours spent by staff	Hours spent by staff
Hospital- and pharmacy-wide communication	Hours spent by staff	Hours spent by staff
Educational resources	Hours spent by staff	Hours spent by staff
Stock management	Hours spent by staff	Hours spent by staff
Procurement systems	Hours spent by staff	Hours spent by staff
Administration systems	Information technology	Information technology
Supporting materials	Hours spent by staff	Materials

Ranking of switching activities by associated cost burden on hospitals

- The top two administrative activities with the greatest cost burden on hospitals according to participants were **protocols** (1) and **training of hospital and pharmacy staff** (2) (Figure 6).

Figure 6. Participant ranking of activities by cost burden on participant hospitals

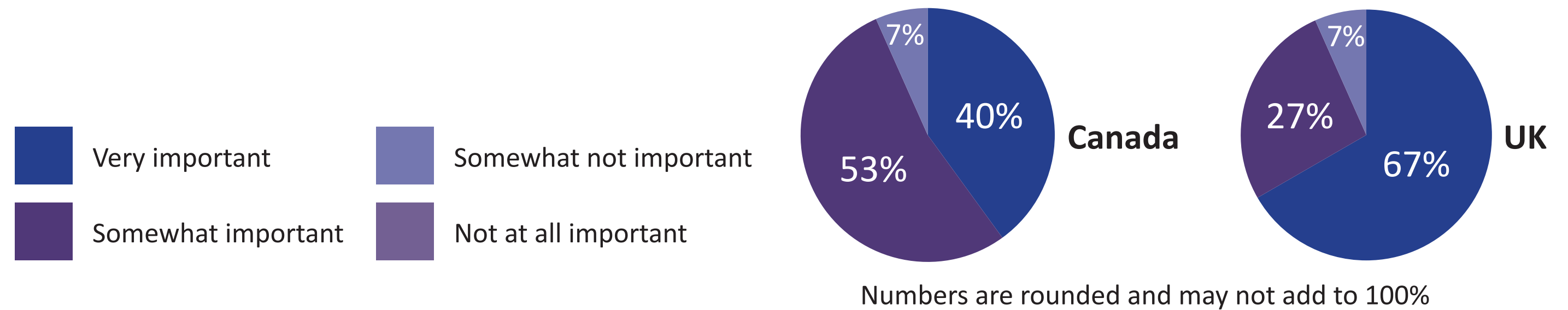
	Canada	UK
Greatest burden	1 Protocols	Protocols
	2 Training of hospital and pharmacy staff	Training of hospital and pharmacy staff
	3 Supporting materials	Educational resources
	4 Educational resources	Stock management
	5 Administration systems	Hospital- and pharmacy-wide communication
	6 Hospital- and pharmacy-wide communication	Administration systems
	7 Stock management	Procurement systems
	8 Procurement systems	Stock management
Least burden	9 Supporting materials	Supporting materials

Importance of time burden associated with a change in hospital formulary medication

93% (n=28) of survey participants said that the cost burden associated with a change in hospital formulary medication when making the decision to switch from one LMWH to another on the hospital formulary was Very important or Somewhat important.

- 93% (n=14) of Canadian participants and 93% of (n=14) UK participants said that time burden was either **Very important** or **Somewhat important** (Figure 7).

Figure 7. Participant opinion on the importance of cost burden in LMWH switch decision making



Conclusions

- During LMWH switches, CHPs spend a considerable portion of their working week on switching-related administrative tasks.
- Reviewing and updating protocols and training staff are the greatest sources of time and cost burden on hospitals during a switch.
- The majority of CHPs believe that time and cost burden are very important in switch decision-making.
- Formulary committee members should ensure that they consider the high level of administrative burden when making decisions to switch products on formulary.
- Findings were similar between the UK and Canada.

Disclosure

This study was jointly funded by Pfizer Inc. and IPG Health