


Travel health pharmacy: A new model for sustainability

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Introduction

Public perceptions of pharmacists have rarely been as positive as the second full year of the COVID-19 global pandemic comes to a close. Pharmacists have voluntarily vaccinated a large segment of the general public while exposing themselves to significant personal risk. Delta and Omicron variant concerns notwithstanding, a notable opportunity for pharmacists to pivot towards travel health services presents as the pandemic winds down and global economies reopen.

Two short- to medium-term drivers are significant. First, pharmacies now have a newly strengthened asset on their balance sheet that can and should be leveraged: goodwill. In accounting terms, goodwill is considered an intangible asset that is associated with a brand's products and/or services. Pharmacists' sacrifices during the pandemic provide added lustre to the profession's public image—one that highlights altruism, public welfare and expertise in navigating a potentially dangerous infectious disease. Although the first 2 aspects (altruism and public welfare) can be co-opted towards many aspects of both traditional and progressive pharmacy practice, the latter aspect (expertise in infectious disease) is particularly relevant to travel health, given common pillars such as vaccination promotion and administration. Second, there is now pent-up demand for travel given the period of abstinence engendered by government-mandated quarantining rules. A shift in consumer sentiment away from goods and towards experiential services like travel could serve as reinforcement, especially since numerous goods and services are commonly included in the same discretionary spending category in many personal budgets.

Pharmacists are widely acknowledged to be underused resources in the health care system, yet shrinking revenues are in many instances limiting pharmacists' ability to implement

a full scope of services. Since 2010, the combined effects of prescription price deflation, competitive pressures, a reluctance to charge out-of-pocket for a full scope of services and decreased access to funding through direct and indirect (i.e., rebate-based) cuts have resulted in more stringent labour use among community pharmacies, despite calls for the inverse by pharmacists looking to provide more comprehensive care. Given increasing automation, the emergence of the registered pharmacy technician profession and the potential disruption offered by online/central fill pharmacies like Express Scripts and PocketPills, the time is ripe to consider travel health services that will allow pharmacists to work to their full potential and continue to provide value to the health care system.

The purpose of this article is to provide practical insights and guidance for pharmacists looking to provide travel health services either within a traditional pharmacy model or as the core offering of a new business.

Background and rationale

Although the current business landscape for travel health services can best be described as "in flux," the resumption of decade-long trends and future forecasts should conceivably take place in the next 6 to 12 months. It should be noted, however, that persistent global vaccine inequities may initially preclude certain parts of the world from participation in the reopening market.

The United Nations has reported that 1.4 billion travellers left their home countries for vacations in 2018. Indeed, travel has been an expanding market, with 2018 being the ninth straight year of sustained global tourism growth and global spending on tourism outpacing global GDP.¹ The UN's 2017 report estimated that international travel will increase at a rate of 3.3% per year through 2030.² According to another source,

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destinations for international tourists are increasingly in the developing world. About 8% of these travellers need medical care during their trips or after, much of which is preventable through prophylactic use of medications and/or vaccines³ and other preventive measures. It is important to note, however, that according to a 2003 New York Airport survey, many patients either are not aware of the need for preventive measures or simply choose not to pursue them. Of those travelling to destinations in which hepatitis A was a risk, only 14% had been vaccinated; 27% of travellers visiting high-risk malaria zones did not believe they were at risk and only 46% were travelling with antimalarial agents. In 42% of antimalarial-carrying travellers, chloroquine was the agent prescribed, despite visiting areas where chloroquine-resistant *P. falciparum* was present.⁴ Moreover, the US Centers for Disease Control and Prevention reported that of 508 travellers who contracted malaria, only 29% took the recommended regimen. This suggests a market opportunity for pharmacists to provide a better service value over current offerings by prescribing more appropriate therapies and avoiding adverse effects from those that are unnecessary.⁵⁻⁸ Pharmacists are well positioned to provide expert guidance on drug interactions and provide insights into the ramifications of travel on a patient's current therapies (e.g., effects of dehydration on medications like metformin or lithium, or increased risk of phototoxicity from thiazide diuretics). Furthermore, it has been shown that medication prescribing and delivery at the same site (e.g., a travel clinic pharmacy) improve both accessibility and adherence.⁹

It has been suggested that pharmacists are keen on delivering these services (one survey in Quebec¹⁰ found that 92% of community pharmacists were interested), although they would likely need additional training, such as the program offered by the International Society of Travel Medicine or those potentially created by advocacy associations, such as the Canadian Pharmacists Association or the Ontario Pharmacists Association. Current data and trends suggest that patients would be receptive to this service from pharmacists, given the results of one study in Alberta, where consultations, vaccinations and prescriptions for oral therapies were provided by an autonomous pharmacist⁹ (in contrast to previous studies, where pharmacists were bound to a predefined protocol or were dependent on other providers for full provision of services). Ninety-four percent of patients who completed the post-travel questionnaire reported being satisfied or very satisfied with the service provided. Further, a small study of a travel clinic run through a community pharmacy in California found not only that patients were highly satisfied with the service (96%) but that pharmacist recommendations were accepted in 84.7% of cases.¹¹ These findings were consistent with a study examining similar service offerings in community pharmacies.¹² Considering the recent widespread uptake of pharmacist-administered, publicly funded influenza and COVID-19 vaccines, as well as those charged out-of-pocket (e.g., shingles, hepatitis

A/B, etc.) as a surrogate measure, the future bodes well for this service.

One study demonstrated that there are opportunities to provide other needed vaccines, such as pneumonia or publicly funded influenza vaccines, to patients receiving travel vaccines.¹³ This same logic can be applied to prescribing pre-exposure prophylaxis in patient groups that are at high risk for contracting HIV, particularly since inhibitions may be lower during travel. It can further be speculated that providing publicly funded medication reviews may help to inform the fee-based travel consult, by providing background information that could help tailor the travel consultation. Flaherty et al.¹⁴ discussed additional service offerings that could be incorporated into a pharmacist travel clinic, including first aid preparedness for adventure travel and risk reduction of deep vein thrombosis.

Clinical effectiveness of travel health services

A 2011 study at a US-based university travel health clinic demonstrated that pharmacists with appropriate training provided superior evidence-informed clinical recommendations when compared with other primary care providers (physicians, nurse practitioners, physician assistants) and that patient compliance was higher in the pharmacist group. The study was conducted by retrospective chart review and examined 513 patients who received 30-minute travel consultations. Specifically, the pharmacist-run travel clinic prescribed recommended antibiotics for travellers' diarrhea when indicated 96% of the time, compared with 50% of the time in the other-care-provider group ($p < 0.0001$). Furthermore, patients seen by the pharmacist travel specialist received their medications 75% of the time, compared with 63% in the other-care-provider group ($p = 0.04$). The other-care-provider group prescribed antibiotics inconsistent with guidelines in different scenarios. The other care providers did not order antibiotics when indicated 49% of the time (vs 6% in the pharmacist group, $p < 0.0001$) and ordered them when not indicated 21% of the time (vs 3% in the pharmacist group, $p < 0.0001$). Similarly, other care providers prescribed antimalarials when indicated 81% of the time (vs 98% in the pharmacist group, $p < 0.0001$) and prescribed them 19% of the time when not indicated (vs 2% in the pharmacist group, $p < 0.0001$). Moreover, the other care providers ordered vaccines less often than indicated (mean 2.31 per patient vs 2.77 in pharmacist group, $p = 0.0012$), ordered more vaccines per patient inconsistent with guidelines (mean 0.18 vs 0.025 in the pharmacist group, $p < 0.0001$), did not order when indicated (mean 0.78 vs 0.12 in the pharmacist group, $p < 0.0001$) patients were less likely to receive the ordered vaccines (mean 1.95 vs 2.38 in the pharmacist group, $p = 0.0039$).⁵

Unfortunately, there are scant data that compare hard outcomes achieved from pharmacist interventions vs usual care (e.g., malaria rates after travel, successful treatment of traveller's diarrhea, confirmed hepatitis A/B cases). In the absence

of these data, studies involving health care professional travel interventions were examined. One study published in 2015 involved a database analysis of 32,000 ill European travellers (from 5 sites) during a 5-year period (2008-2012). When travellers had received a pretravel consult, they had significantly lower rates of malaria, acute hepatitis, HIV/AIDS and postexposure prophylaxis resulting from animal bites when compared with travellers who had not received a consult. However, rates of traveller's diarrhea were paradoxically higher in the consult group. Since this was not a fully controlled or randomized trial, the authors could only hypothesize that their findings might be the result of a higher likelihood of travellers seeking a pretravel consult when visiting destinations with higher inherent rates of traveller's diarrhea. Details concerning vaccinations and medications provided were not indicated in the study.¹⁵ A retrospective cohort study published in 2018 examining 1160 patients with travellers' diarrhea at a Mayo Clinic (from 1994 to 2017) showed a significantly reduced length of hospital stay in the group that received a pretravel consult compared with the group that did not. However, there were major differences between groups in addition to heavy potential risks of bias.¹⁶ A retrospective cohort study published in 2014 demonstrated statistically significant differences in rates of travellers' diarrhea and insect bites between those participants who received a pretravel consult and those who did not. There was a nonsignificant difference in malaria rates between the 2 groups; however, the frequency of illness was low (3 patients in the control group vs 0 in the case group).¹⁷

Making the case

Delivering value

The only pharmacist-specific study focused on costs was conducted by the Clinical Pharmacy International Travel Clinic (CPITC)—a telepharmacy service that serves the Kaiser Permanente Colorado Region (and now serves other areas of the United States). A review from 2004 revealed that the CPITC consults with approximately 9500 travellers annually and has yearly operating expenses of US\$450,000. Consults average in cost between US\$45 and \$50 (10-30 minutes long). The authors took data from an unpublished retrospective review of a nurse-based travel consultation system and compared the data with their own data over a similar period of time. It was determined that approximately US\$47,000 in savings could be realized per year (approximately 720 consults) through the avoidance of unnecessary vaccines and medications (e.g., use in low-risk situations). It was concluded that pharmacists provide prescribing for travel consultations more cost effectively than do nurses, due to greater appropriateness of therapy choices, a clear value-add that favours pharmacist uptake, especially when considering pharmacists' inherent ability to manage drug interactions and contraindications in more complex populations.¹³

Certainly, some data suggest that increasing accessibility and overall prevention rates of travel-relevant interventions are cost effective, although it should be noted that further study and analysis are required to make any definitive statements on this topic. A recent systematic review suggested that hepatitis B vaccination is cost effective in several different populations that may be generalizable to travelling populations (e.g., US\$6112 per case avoided in adults attending STI clinics or US\$65,715 per case avoided in predialysis patients with renal impairment).¹⁸ Although there is generally a paucity of cost-effectiveness data for travellers' diarrhea, a 1999 cross-sectional survey study¹⁹ of people travelling to Jamaica for an average duration of 7.7 days suggested an aggregate cost of illness (including medication, medical treatment and missed activities) of US\$116.50 per patient affected, or US\$27.50 per traveller (note that 23.6% of travellers surveyed were affected by travellers' diarrhea). The study concluded in 1997, so adjusted for inflation, the cost per traveller amounts to US\$43.04.²⁰ Although much of the economic data on malaria treatment and prevention centres are supplied from the developing world and are therefore not fully generalizable to first-world travellers, an economic analysis of US travellers from 2000 to 2014 suggested an average cost per hospital stay of a case of active malaria to be US\$25,789.²¹ Of course, it should be noted that US health care spending is the least cost effective among industrialized nations, and so the costs for similar quality of care in Canada are suggested to be reasonably lower.

Market forces

Changing market forces include an increasingly educated surplus of newly graduated pharmacists (as entry-level PharmD programs become commonplace across the country) that will help keep wages stable and a revenue mix that is reliant on non-generic vaccine dispensing, vaccine administration and consultation fees. Since these costs are not always covered by insurers, there is less risk for aggressive fee and drug pricing discounts, as communicated by software adjudication systems. However, the differences between the fees charged and fees covered by insurers may affect out-of-pocket costs, thereby reducing the likelihood of repeat use by patients and referrals to family and friends. In the future, we may very well see greater coverage of these services (e.g., through flexible health spending accounts or progressive benefits managers like League and Green Shield Canada), which may allow for an offset of fee discounts through greater overall volume.

There is also potential for partnering with allied businesses and service providers for mutual referrals and incentives (e.g., travel agents, travel supply stores, travel insurance providers). Additionally, there may be opportunities to partner with academia and receive funding to study and track hard outcomes in travellers visiting a pharmacist travel clinic (e.g., hepatitis rates in those accepting vaccination vs those who decline).

FIGURE 1 Political, economic, social and technological (PEST) factors influencing pharmacist-provided travel services

<p>Political</p> <ul style="list-style-type: none"> → Legislation across Canada for independent pharmacist prescribing is not fully in place, though the trend towards expanded scope continues. → Provincial governments are increasing price controls on drugs, resulting in shrinking revenues. Pharmacies will be looking for alternative revenue streams, potentially increasing competition in provision of travel services. → New COVID-19 variants could emerge, compelling governments to enact new travel restrictions. 	<p>Economic</p> <ul style="list-style-type: none"> → Overall travel/tourism market is rebounding, though geographic restrictions and specific measures will create challenges (e.g., proof of vaccination status). → Shift in spending towards “experiences” rather than material possessions for Millennials, who have recently surpassed Baby Boomers in buying power.
<p>Social</p> <ul style="list-style-type: none"> → The public is increasingly demanding that health care be more accessible and is embracing a health system that is less physician-centric. → The public’s trust in pharmacists is consistently among the highest for health professionals, and this has been reinforced by pharmacists’ roles during the COVID-19 pandemic. 	<p>Technological</p> <ul style="list-style-type: none"> → Demand for app-based support of travel health services will allow some entrants to create a differentiated value proposition. → Pandemic-accelerated telemedicine trend may allow for consult-only based services, with prescriptions and vaccinations to be provided/administered with traditional community pharmacy partners closer to patients.

Political, economic, social and technological (PEST) forces will also play a significant role, as summarized in Figure 1. In particular, it must be noted that legislation for pharmacists to independently prescribe vaccinations and medications used in travel medicine has not fully passed in all provinces and territories at the time of this writing. However, medical directives with physicians or partnerships with nurse practitioner partners could be considered.

Sample pro forma income statement

A pro forma income statement (Table 1) based on a model pharmacy travel clinic suggests a profit before taxes of \$126,321.03 per year. Key assumptions within this figure are that the clinic is open for 8 hours per day from Monday to Saturday, excluding statutory holidays. Each appointment is expected to last up to 60 minutes (includes consultation, vaccine administration and dispensing of medications). It is assumed that the pharmacist-owner provides patient services 5 days per week and so this labour is not reflected on the wage expense line. Further, the model assumes a clinical pharmacist wage of \$44.52 per hour 1 day per week (on the day the pharmacist-owner does not provide services) based on the national average as reported by Indeed.com.²² Similarly, a registered pharmacy technician wage of \$23.78²² is assumed 6 days per week (one full-time and one part-time) and the technician is expected to assist in dispensing and administration. Six clients are seen

per day on average. The average vaccine cost is assumed to be \$60, the average nonvaccine prescription cost is \$15 and the average over-the-counter cost is \$9, based on knowledge of items commonly used by travelling patients. Amortization and depletion, rent, utilities, software and telecommunications, insurance, repairs and maintenance, professional and business fees, advertising, and interest and bank expenses are based on national figures provided by the federal government.²³ Benefits expenses are taken from the Conference Board of Canada.²⁴ Provincial scope-of-practice limitations necessitating the hiring of a nonpharmacist prescriber were not accounted for (e.g., under wage expenses), as this will vary by province and may change as provinces grant greater powers to pharmacists, and could simply be tied to returns.

Discussion

The most compelling barrier to pharmacists’ foray into travel health services is scope-of-practice barriers (e.g., full prescribing rights), for which 2 solutions are suggested. In the short to medium term, medical directives or partnerships with physicians or nurse practitioners could be explored. In the long term, advocacy efforts directed towards provincial or territorial ministries or regulatory bodies, perhaps as a negotiating tool in future regulatory talks, should be pursued diligently. Figure 2 demonstrates a deeper analysis examining strengths, weaknesses, opportunities and threats associated with this initiative.

TABLE 1 Pro forma income statement

Revenues	
Consultation fees (\$50 per patient)	\$90,600.00
Revenue from 2.31 vaccines per patient ²⁵ (includes \$10 dispensing fee, \$20 administration fee, 10% mark-up and vaccine cost)	\$401,829.12
Revenue from 1.48 nonvaccine Rx products per patient ²⁵ (includes \$10 dispensing fee, 10% mark-up and cost)	\$62,369.04
Revenue from 4.76 non-Rx products per patient ²⁵ (includes 50% mark-up and cost)	\$116,439.12
TOTAL	\$671,237.28

Additional revenue streams could include referral fees from tour operators and travel insurers, sales and/or fees from non-travel-specific vaccines (e.g., influenza, pneumonia), sales of travel-sized personal care items, ad sales from digital offerings (e.g., mobile applications) and publicly funded medication reviews incorporated into the travel health consult.

Expenses	
Cost of goods sold	\$368,995.68
Amortization and depletion expense ²³	\$8726.08
Wages ²²	\$66,476.20
Benefits ²⁴	\$16,660.00
Rent ²³	\$22,822.07
Supplies	\$3000.00
Utilities, software, telecommunications ²³	\$8298.66
Insurance expense ²³	\$19,465.88
Repairs and maintenance ²³	\$2013.71
Professional and business fees ²³	\$18,123.41
ISTM annual membership fee ²⁶	\$266.00
Advertising ²³	\$5369.90
Interest and bank charges ²³	\$4698.66
Total	\$544,916.25
Profit (before-tax expenses)	\$126,321.03

Cost-containment strategies could include using sublet spaces or affiliation with traditional pharmacies or using a "sweat equity" compensation model to replace a portion of traditional wages.

Two notable factors would support pharmacists' move into travel health. First, the market for travel health services is increasing by virtue of post-COVID-19 spending rebounds on travel and tourism. This is good news for any licensed health care professional with an interest in pursuing specialized travel health services, but particularly for pharmacists who have a personal interest in travel health and are looking for alternative practice models. Second and most compelling is that pharmacists are uniquely positioned, through a combination of education, training and professional culture, to embrace competitive advantages over traditional service providers. Pharmacists'

steadfast commitment to evidence-based guidelines and a deep understanding of pharmacotherapy principles as they relate to safety and effectiveness also work in their favour. This suggests that the current market is ripe for disruption and that market share for pharmacists could be grown at an accelerated pace, due to an unmatched value proposition.

Further market growth may be contingent upon reducing cost barriers for price-sensitive consumers, by appealing to insurers to allow travel health services to be eligible for coverage through increasingly popular health spending accounts. At start-up, it is not expected that growth would

FIGURE 2 Strengths, weaknesses, opportunities, threats (SWOT) analysis influencing pharmacist-provided travel services

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> • Increased accessibility of services • Pharmacists regularly considered most trusted health care professional • Pharmacists are positioned to offer more comprehensive and superior quality care vs standard treatment 	<ul style="list-style-type: none"> • Scope-of-practice limitations • Out-of-pocket costs for patients • Public perception of conflict of interest by both prescribing and dispensing under the same business 	<ul style="list-style-type: none"> • Rebounding/growing market • Liaising with travel health insurers to offer lower rates to those using preventative approaches (value creation) • Canadians using more medication over time, so require service providers with expertise in managing interactions (value creation) • Growing industry focus on vaccines and preventative medication increases the number of potential interventions per patient • Accepting cryptocurrencies as payment taps into a millennial market at ease using alternative currencies 	<ul style="list-style-type: none"> • Pushback from physician groups • Downward pressure on prices from new entrants/competition as market continues to expand

be impeded simply because of the size of the existing market and the potential to persuade clients of physician-run clinics to use a pharmacist-run service, particularly if there is an existing pharmacist-client relationship. As this market matures, however, growth potential will likely need to come from consumers with higher price sensitivity. A higher volume, lower margin model may eventually come to fruition, particularly as efficiencies are gained. This, in part, could be embraced through preferred provider agreements with large employers.

Lastly, innovative, future-facing solutions could also support travel health service uptake by pharmacists. Shared or rented coworking spaces may help to reduce fixed costs (e.g., Clinicube, although currently not available in Canada). Telemedicine holds similar potential, particularly as 5G technologies roll out, which will be better equipped to supply this technology. Finally, subscription services for frequent travellers could provide a surge in cash flow at the start of the billing cycle while simultaneously offering cost savings for subscribers. ■

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