

Afghanistan Retail Pharmacy Survey (ARPS): Consolidated Report of Primary and Secondary Analyses

Paul Ickx
Abdul Ahmad Roshan
Norio Kasahara
Ehsanullah Ibrahimi

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Strengthening Pharmaceutical Systems
Center for Pharmaceutical Management
Management Sciences for Health
4301 N. Fairfax Drive, Suite 400
Arlington, VA 22203 USA

Phone: 703.524.6575
Fax: 703.524.7898
E-mail: sps@msh.org

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The Strengthening Pharmaceutical Systems (SPS) Program strives to build capacity within developing countries to effectively manage all aspects of pharmaceutical systems and services. SPS focuses on improving governance in the pharmaceutical sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines.

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Strengthening Pharmaceutical Systems
Center for Pharmaceutical Management
Management Sciences for Health
4301 North Fairfax Drive, Suite 400
Arlington, VA 22203 USA
Telephone: 703.524.6575
Fax: 703.524.7898
E-mail: sps@msh.org
Web: www.msh.org/sps

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ACRONYMS

AD	Anno Domini
ANF	Afghanistan National Formulary
ANPA	Afghanistan Nationwide Pharmacists Association
ASCOR	Afghan Center for Socio-Economic and Opinion Research
BPHS	Basic Package of Health Services
EDL	Essential drug list
FEFO	First expiry first out
FIFO	First in first out
GDPA	General Directorate of Pharmaceutical Affairs
GDPP	General Directorate of Policy and Planning
IDPIG	International Drug Price Indicator Guide
IMCI	Integrated management of childhood illnesses
IRB	Institutional review board
LDL	Licensed drug list
MoPH	Ministry of Public Health
NDTC	National Drug and Therapeutics Committee
ORS	Oral rehydration salts
PPHO	Provincial Public Health Office
PPRO	Private pharmacy retail outlets
PSI	Population Services International
REB	Research ethics board
RPR	Retail Pharmacy Regulation
SH	Solar Hijri
SPS	Strengthening Pharmaceutical Systems
SPSS	Statistical Package for the Social Sciences
USAID	US Agency for International Development
WHO	World Health Organization

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EXECUTIVE SUMMARY

The USAID-supported Strengthening Pharmaceutical Systems (SPS) project in Afghanistan is providing technical assistance to the Ministry of Public Health (MoPH) in strengthening the pharmaceutical system in the country. Private pharmaceutical retail outlets (PPROs) provide 70 percent of the country's total medicines supply,¹ but the private supply system is extremely complex, chaotic, inflated, and under-regulated.² Since 2007, the MoPH General Directorate of Pharmaceutical Affairs (GDPA) is tasked with regulating the registration of PPROs, and, in preparation for a revision of the registration guidelines and procedures, an assessment of the compliance with registration requirements, and of the quality of pharmaceutical service delivery was undertaken with technical assistance from SPS.

Through a competitive tender, the Afghan Center for Socio-Economic and Opinion Research (ACSOR) (a D3 Systems, Inc., subsidiary) was subcontracted to implement the field work and to perform a preliminary analysis, with ongoing technical support from SPS and in coordination with GDPA. The survey includes a sample of 879 PPROs, distributed across 10 provinces (Kabul, Nangarhar, Khost, Kandahar, Herat, Badakhshan, Kunduz, Balkh, Faryab, and Bamyan). Data collection through structured interviews with the most-senior person working in the pharmacy on the day of the visit, and through physical inspection of premises took place between April 15 and May 4, 2013 AD (Hamal 26 and Sawr 14, 1392 SH).³ Preliminary analysis was performed by ACSOR with extensive technical guidance and inputs from SPS, and a preliminary report was presented in February 2014/Hut 1392. Based on the review by and feedback received from GDPA, SPS undertook a secondary analysis of the original dataset. The secondary analysis investigated differences between urban and rural PPROs, and between PPROs of different licensing classes. The present report consolidates the findings of the preliminary and secondary analyses.

The main objective of the survey was to set a baseline for the specific conditions that are intended for improvement through the implementation of revised registration guidelines and procedures, or that SPS Afghanistan interventions are targeting for change. Specific questions were clustered around three major themes: pharmacy licensing and inspections; pharmacy service quality; and product availability, quality, and affordability.

Findings

Pharmacy Licensing and Inspections

To what extent are pharmacies licensed?

- Nearly all PPROs reported they were registered at least once (95 percent, n=837), but only 57 percent (n=499) of all pharmacies—or 64 percent of those that claimed to be registered—were able to produce a proof of licensing at the time of the interview.

¹ Harper J, Strote J. Afghanistan pharmaceutical sector development: problems and prospects. *Southern Med Review* (2011) 4;1:29-39. doi:10.5655/smr.v4i1.75

² Ibid.

³ Dates throughout this report are provided in both the Gregorian calendar (AD) and the Solar Hijri calendar (SH).

- Of those that were able to present their license (n=499), 33 percent (n=163) had a Class I license, 47 percent (n=235) had a Class II license, and 20 percent (n=101) had a Class III license.⁴ The majority, 65 percent (n=325) of the verified licenses had been issued in the 10 years previous to the survey, i.e., after 2002.
- While a pharmacy should have only one valid license, 66 percent (n=578) cited registration with more than one licensing authority, and 99 percent (n=570) of these cited both Qawanin-e-sehi-wa-barrasi (Qawanin) and GDPA as licensing authority. (Qawanin and GDPA both have had official licensing authority in recent years.)
- The top two reasons why pharmacies reported never to have registered were “low economy” and “lack of law implementation.”

What percent of pharmacies have been inspected by MoPH inspectors in the last year?

- Most pharmacies claimed to have been visited by an inspector (89 percent, n=786) at least once; 98 percent (n=767) of these in the last year and 74 percent of these (n=567) in the last quarter (as of May 2013 AD/Sawr 1392 SH).
- Class I and Class II pharmacies claimed more recent visits than Class III pharmacies, and Kabul-based pharmacies claimed more recent visits than those outside of Kabul City.
- Very few pharmacies reported that the inspector left proof of the inspection (7 percent, n=54).

To what degree do pharmacies comply with registration criteria?

- By law, no pharmacy should be established within 200 meters of another pharmacy. The large majority (81 percent, n=712) of all PPROs had at least one other PPRO within 200 meters. On average, a PPRO would have four other PPROs within 200 meters, with a maximum of 45 PPROs within 200 meters.
- There are specific criteria for what constitutes an adequate working surface for a pharmacy of each class, but only 28 percent (n=249) of all pharmacies seem to comply with this requirement, even when applying Class III criteria to PPROs with unverifiable license status. Only 6 percent (n=10) of Class I pharmacies meet their working surface requirement; 13 percent (n=31) of Class II and 46 percent (n=44) of Class III pharmacies meet their working surface requirement. The working surface of more than half (57 percent) of all sampled pharmacies is smaller than the size required for a Class III pharmacy.
- Rigorous application of all requirements contained in Law and Regulation, results in only one PPRO complying with all requirements. Most likely, this can be explained by a combination of factors—
 - Poor adherence to existing licensing procedures
 - Unrealistic existing licensing criteria
 - Limited inspections and enforcement
 - No policy of license renewals, which would allow alignment with new criteria

⁴ The MoPH classifies pharmacies according to their amount of capital, area, and location. See section 3 for a summary of these classifications.

Pharmacy Service Quality

To what extent do pharmacies meet specified physical standards?

- The building infrastructure corresponded with recommended quality criteria in 74 percent (n=648) of the PPROs, if the 200-meter rule and the recommended working surface area are not applied.
- Recommended safe storage of medicine is adhered to by 2 percent (n=17) of the PPROs, but this improves to 59 percent (n=518) if one disregards applying correct color-coding to cabinet panels, and the on-site presence of a functioning refrigerator.
- Of the 748 of pharmacies that do not have a working refrigerator on-site, 65 percent (n=488) claim to sell medicines that should be kept refrigerated.

Are standard recommended practices being executed, i.e., appropriate disposal of expired or sub-standard medicines?

- In the absence of country-specific guidelines, 27 percent (n=235) of PPROs hand over expired medicines to authorities or suppliers, 71 percent (n=626) discard expired medicines in trash or sewer, and 40 percent (n=292) burn the medicine before discarding.

Do pharmacy staff have the training and knowledge expected and required to fulfill their duties successfully?

- In principle, the person responding the questionnaire should have been the most senior pharmacy staff present. In Class I and II PPROs, 46 percent (n=184) of the respondents were pharmacists. In pharmacies with a Class III license, with an unverifiable license, or that were never registered, 63 percent (n=310) of respondents were pharmacists or assistant pharmacists. The data could indicate that 56 percent (n=494) had the required staffing pattern.
- However, when asked whether a pharmacist or assistant pharmacist was present on the day of the visit, 84 percent (n=741) claimed that one was present.
- All respondents were male.
- Pharmacies are advised to inform patients of the common side effects of medications; 77 percent (n=679) of pharmacies in the survey are not complying with this regulation.
- Less than one-fourth of the respondents reported providing the minimal information needed for treatment compliance (dosage, frequency, and treatment length of the medicines dispatched).
- Most commonly kept records pertain to purchase of medicine: 78 percent (n=687), followed by dispensing records in 42 percent (n=372) of the PPROs. Very few (11 percent, n=96) reported complying with the regulation of keeping separate registers for narcotics and controlled substances.

Accessibility of services by the public

- On average, PPROs are providing services more than 10 hours a day, including on Thursdays and Fridays.
- Only 15 percent (n=135) claim to close on Fridays.

- Only 11 of the 879 PPROs included in the sample claimed to provide services 24 hours a day, seven days a week.
- About half (53 percent, n=468) of the pharmacies are complying with the regulation of listing a night duty list, but only in 38 percent (n=338) was the night duty list readable from the outside.
- Most pharmacies (81 percent, n=712) are not following the 200-meter rule.
- On average, 54 percent of the last ten patients seen at the PPROs came to the pharmacy with a prescription.
- Of the investigated PPROs, 59 percent (n=523) reported that they work closely with private institutions such as a doctor's office, private clinic, or private hospital. Only 18 percent (n=154) claimed to work closely with a public health facility.

Product Availability, Quality, and Affordability

Procurement and general quality of medicines

- Respondents mentioned 478 unique names when asked to give the three most important suppliers. Of the mentioned suppliers not one was mentioned by more than half of the respondents, the most frequently mentioned was mentioned by 46 percent of the respondents, and more than half (54 percent) was given by only one respondent.
- Only 30 percent of respondents reported having experienced problems with at least one of their three most important suppliers, but 63 percent mentioned having to manage medicines of poor quality. Both problems with suppliers and receiving medicine of poor quality were more frequently reported in Kabul City than elsewhere.

Availability, quality and affordability of medicines on the Essential Drug List (EDL)

- The survey investigated the availability of 30 tracer medicines that are on the EDL and recommended for use in the MoPH's priority health strategy of the Basic Package of Health Services (BPHS). The overall weighted average percentage availability was 63 percent, with a high of 100 percent and a low of 10 percent. The averages did not differ significantly between PPRO license classes or between geographic areas.
- With very few exceptions, all tracer medicines were unexpired and stored in original packaging, showing no deterioration.
- The median number of tracer medicines available in each PPRO was 19.
- Oral rehydration salts (ORS) and antibiotics recommended as first-choice treatment for pneumonia were among the one-third most-frequently available medicines.
- Injectable and oral contraceptives, and zinc sulfate tablets however, were among the one-third least-frequently available medicines.
- Only 11 percent (n=99) of the PPROs had a choice of four commonly recommended contraceptives (condoms, oral combination pills, oral progesterone-only pills, and injectable hormonal) available.
- The average unit price of the available tracer medicines was compared with the average unit price of the *International Drug Price Indicator Guide (IDPIG)*,⁵ and was found, on average, to be twice as expensive as the IDPIG reference. The average unit price of 21 products was more expensive, and the average unit price of nine products was less expensive than the IDPIG reference.

⁵ MSH (Management Sciences for Health). 2014. *International Drug Price Indicator Guide*, 2013 Edition. (updated annually). Medford, Mass.: MSH.

- The average cost of the antibiotic treatment for pneumonia recommended by Integrated Management of Childhood Illnesses (IMCI) guidelines was 11.10 Afghani. Based on comparisons to average government employee incomes, this is deemed affordable, although it is almost twice as expensive as the IDPIG reference.

Availability and quality of medicines on the Licensed Drug List (LDL)

- In each PPRO, interviewers randomly selected five medicines from the pharmacy shelf. After data recoding in the secondary analysis, 86 percent of the 4,395 selected products matched (in active substance and dosage form) a product on the LDL. There was no difference between PPRO licensing classes or between urban and rural areas.
- Of the 4,395 selected products, 2 percent (n=73) were expired, and 10 percent did not live up to the criteria of acceptable quality (limited to absence of visible damage, availability of batch number, availability of the expiry date or production date indicating month and year).

Conclusions and Recommendations

Registration, Licensing, and Inspection

The fact that the large majority of the pharmacies (95 percent) at least claimed to have a license indicates a positive attitude of most private pharmacy owners towards a regulatory body. This confirms findings of the Afghan National Resources Assessment⁶ in a convenience sample of 1,400 pharmaceutical outlets, where pharmacists indicated they “wish to have more government intervention to control the operation of this market, the quality of the drugs, and to a lesser extent, their price.”

An additional positive finding is that only five pharmacies did not mention either Qawanin or GDPA as the licensing authority where they registered (historically these two authorities have granted licenses). The fact that 66 percent of all pharmacies mentioned more than one licensing authority (and, of these, 99 percent mentioned both GDPA and Qawanin) may indicate a concern with being licensed by the designated authority, and most likely, to have an updated license by the most recent officially designated authority.

In spite of the apparent willingness of retail pharmacies to comply with licensing, there is generally poor compliance with the recent licensing criteria, in particular the rule of not being within 200 meters of another pharmacy, and having the required working area surface. There is also room for improvement on compliance with staffing requirements.

Comparisons of PPROs’ rather poor compliance with present criteria against their apparent willingness to comply with licensing regulations and concern with having a license from the official licensing authority should take into account the following considerations—

- About half of the pharmacies that claimed to be registered, registered first more than 10 years ago.
- About 35 percent of the verified licenses were older than 10 years.

⁶ Ministry of Health, 2002, Afghanistan National Health Resources Assessment.

One can assume that licensing criteria changed over time, and that changes were not always clearly communicated over past 30 years, due to social and political upheaval. This, along with a lack of license-updating requirements (unless there is change in ownership or change in address) and poorly documented inspections, would lead to many pharmacies operating according to outdated criteria. It could also explain why 40 percent of the pharmacies do not live up to the required staffing criteria: even if a pharmacist or pharmacist assistance is introduced at the time of licensing, they may not be replaced when they leave.

Recommendation

Revise and update the registration guidelines making sure that—

- Criteria are realistic and adapted to the local Afghan situation. This does not mean that one should allow for low-quality establishments, but making the difference between exclusion criteria and recommended criteria may be necessary. Exclusion criteria could be linked to obtaining and renewing a license, recommended criteria could be linked to a quality accreditation scheme.
- Licenses are renewable within a defined time period.
- Criteria are objectively verifiable, to allow for inspection.
- New registration guidelines are introduced that include a clear policy and procedures for stepwise improvement, relocation, or exclusion of non-compliant existing pharmacies.

Quality of Services

The majority of pharmacies surveyed complied with physical standards that are under direct control of the pharmacy owner (integrity and cleanliness of building and premises) and that immediately pertain to the comfort of the working environment.

Operational standards (storage, temperature control, record keeping) that more exclusively pertain to the quality of medicines and services are less well followed. Only 23 percent of the pharmacies comply with recommendations for keeping pharmaceuticals in color-coded cabinets; this may be explained by the unavailability of a list matching products with the color code. Only a small proportion (13 percent) had a thermometer indicating ambient temperature, and a little more (15 percent) had a refrigerator, while at least 56 percent sell items that are sensitive to high temperatures. Record keeping is limited, except for commercial records (purchases).

Good dispensing practices and knowledge about patient management are problematic, which is exacerbated by the fact that nearly half (46 percent) of the patients present at the pharmacy without prescription.

Recommendation

Well-organized and regular inspections may improve adherence to the operational standards, in particular when criteria for the standards are objectively verifiable.

Recommendation

Certification of the level to which functional criteria are followed by an independent professional body (like the Afghanistan Nationwide Pharmacists Association, or ANPA) may provide an additional reinforcement of adherence to functional criteria.

Recommendation

If storage is done by color-coding, each registered medicine should carry the coding in its registration, and reference lists for the coding should be publicly available.

Recommendation

Improved dispensing practices and general knowledge about patient management should be addressed jointly by the MoPH, pre-service training institutes, and other professional associations (e.g., ANPA).

Availability, Quality, and Cost of Medicines

Private suppliers are numerous, but only five were mentioned by more than 10 percent of the sampled PPROs as one of their three most important suppliers, and the most frequently mentioned supplier was mentioned by less than half of the PPROs. Only 30 percent of the PPROs mentioned a problem with one of their three most important suppliers, but 64 percent mentioned past problems with poor quality medicine.

Recommendation

With regards to wholesalers who supply PPROs, the MoPH should—

- Revise licensing and quality assurance measures for pharmaceutical wholesalers in Afghanistan
- Assess the performance of wholesalers in Afghanistan in providing good-quality medicines in a timely manner

A sample of 30 tracer medicines on the EDL was found to be available in 60 percent of situations (on average), and most of these were unexpired. This may indicate that the private retail outlets are not a very reliable source for medicines used in the BPHS and Essential Package of Hospital Services (EPHS), since, on average, one out of three medicines on the EDL is not available. Only 11 percent of the pharmacies had a choice of four contraceptive methods available on the day of the visit.

Overall, treatment costs of common diseases seem affordable, although more expensive than the prices available on the international market. This relates only to the price of the medicine, not to associated costs for the patient due to consultation, diagnostics, and transport.

Recommendation

Before PPROs are to be considered as an alternative source for medicine presently provided through donor funding, it is recommended that the MoPH—

- Raise awareness with the PPROs about the importance of carrying the medicines recommended for use in the BPHS/EPHS
- Assess the availability of the same medicines with wholesalers that supply the PPROs
- Perform a more in-depth cost comparison of essential medicines available in PPROs

The present dataset provides only an approximate evaluation of the registration status of the sampled medicines.

Recommendation

Perform an assessment on a comparable sample or sub-sample once the computerization of back-logged registration and importation data is complete.

1. INTRODUCTION

1.1. Background

Funded by the United States Agency for International Development (USAID), the Strengthening Pharmaceutical Systems (SPS) program provides technical assistance and support to the Government of the Islamic Republic of Afghanistan's Ministry of Public Health (MoPH) to improve the country's pharmaceutical system. SPS has worked in Afghanistan since 2008. Under the present Associate Award, SPS provides assistance to build human resource capacity, strengthen local systems and institutional capacity, develop pharmaceutical management information systems that support decision making, enhance the government of Afghanistan's ability to regulate pharmaceuticals, facilitate coordination among stakeholders involved the pharmaceutical sector, and increase capacity to carry out pharmacovigilance activities.

Private pharmacy retail outlets (PPROs) provide the majority of medicines used by the people of Afghanistan. To ensure the safety, efficacy, and quality of medicines and services and products provided at these sites, the MoPH is revising the existing regulatory procedures for establishing a PPRO. To guide a revision of PPRO regulatory procedures, the MoPH and SPS required a comprehensive baseline assessment of PPRO pharmaceutical service quality.

The Afghanistan Retail Pharmacy Survey was funded by USAID via the SPS project. Through an open competitive tender, SPS contracted the Afghan Center for Socio-Economic and Opinion Research (ACSOR)—a D3 Systems, Inc., subsidiary—to perform the data collection and initial analysis of a comprehensive assessment of private retail outlets in 10 Afghan provinces (Kabul, Nangarhar, Khost, Kandahar, Herat, Badakhshan, Kunduz, Balkh, Faryab, and Bamyan). ACSOR and SPS defined and developed the objectives, data collection tool, and analysis plan in collaboration with the General Directorate of Pharmaceutical Affairs (GDPA) and the General Directorate of Policy and Planning (GDPP) of the MoPH. The Afghan MoPH Institutional Review Board (IRB) and the Research Ethics Board (REB) of Population Services International (PSI) (a global health organization located in Virginia, USA) approved the study.

1.2. Purpose and Key Questions

The purpose of this research is threefold—

- To allow for the quantitative measurement and assessment of project impacts on retail medicine outlets (i.e., private-sector pharmacies) by providing baseline data
- Inform project activities and resource allocation
- Provide the MoPH with information to assist implementation of its strategic plan

Specifically, this survey sought to answer several key questions in three major categories.

Pharmacy Licensing and Inspections

- To what extent are pharmacies licensed?
- What percent of pharmacies have been inspected by MoPH inspectors in the last year?

Pharmacy Service Quality

- To what extent do pharmacies meet specified physical standards?
- Are standard recommended practices being executed (e.g., appropriate disposal of expired or substandard medicines)?
- Do pharmacy staff have the training and knowledge expected and required to fulfill their duties successfully?
- What percent of pharmacies are associated with private clinics?

Product Availability, Quality, and Affordability

- To what extent are medicines from the essential drug list (EDL), 2007, available in pharmacies?
- What percentage of products sold in pharmacies are on the licensed drug list (LDL), 2007?
- What is the affordability of medicines in the private sector?

1.3. Timeline

Survey fieldwork took place between April 15 and May 4, 2013, AD (Hamal 26 to Sawr 14, 1392, SH).⁷ ASCOR conducted the preliminary analysis according to the data analysis plan agreed upon with SPS and the GDPA. ACSOR submitted the preliminary survey report in February 2014.

Based on GDPA's review and feedback (July 2014), SPS undertook a secondary analysis of the original dataset between July and December 2014. The secondary report provides disaggregated data (by licensing class and urban/rural split) for several results. It reinterprets the initial findings on availability and quality of medicines (based on re-coding and reprocessing of the related dataset) and reinterprets some findings in order to make more specific recommendations for action.

The analysis, findings, and recommendations from the preliminary and secondary reports were consolidated and harmonized for this document (prepared in February/March 2015) to facilitate the use of the report as baseline reference.

2. METHODOLOGY

2.1. Sampling

ASCOR and SPS determined that the minimum number of total respondents needed for the survey data analysis was 630 pharmacies. This sample size determination was based on a pharmacy population of unknown size, an anticipated non-response rate of 20 percent, and an estimate that 40 percent of private retail pharmacies in Afghanistan are unlicensed. SPS set the required confidence level at 95 percent and estimated the survey design effect at two.

⁷ Dates throughout this report are provided in both the Gregorian calendar (Anno Domini, or AD) and the Solar Hijri calendar (SH).

Setting the confidence interval at 6 percent or less will allow researchers to detect differences equal to or greater than 12 percent in future survey comparisons.

ASCOR visited 881 pharmacies (selected in consultation with the GDPA) in 10 provinces (selected on advice of the MoPH) to allow for a 65 percent or greater non-response rate and to accommodate the possibility of deleting interviews for quality control purposes.⁸ Interviews were conducted in Dari or Pashto with 879 individuals, selected because they were the most senior staff members at the pharmacy and available for interview on the day of the visit.⁹

The sample was distributed over 203 sampling points, based on estimates of licensed pharmacies made available by GDPA, and estimated population by province. Population estimates of the Central Statistics Office’s Yearbook 2012 AD/1391 SH served as reference. Sampling points were then distributed to randomly selected districts within provinces, also proportionate to population size. A geographical sampling point is defined as a tract of a locally prominent location in a district (e.g., a bazaar, mosque, hospital, or school), around which private pharmacy outlets are likely to operate. Rural locations were sampled within the district center.

Sampling points were replaced if supervisors determined that there were insufficient pharmacies (less than five) in a district center based on previous travel to the area and consultation with sources familiar with the district. The administrative units (*nahia*) within cities were selected at random using a step-over list method¹⁰ by the supervisor for urban sampling points. Upon arriving in the sampling point, interviewers located pharmacies using a random walk. Interviewers were permitted to alter the starting point if pharmacies in the designated *nahia* or district center were concentrated in another part of the coverage area.

In the absence of a comprehensive PPRO listing that bore consensus of all stakeholders, the sampling methodology described above is deemed to be the most feasible sampling method to identify the necessary number of pharmacies in districts accessible for data collection without endangering the surveyors’ life or health. See table 1 for the resulting sample of PPROs included in the survey. Throughout this report, a further distinction is made between Kabul City, which is considered a metropolitan area, and other urban areas.

Table 1: Urban/rural split of PPRO sample, by province

Province	Urban		Rural		Total	
	#	%	#	%	#	%
Badakhshan	—	—	17	2	17	2
Balkh	65	7	21	2	86	10
Bamyan	—	—	11	1	11	1

⁸ Two interviews were deleted due to high non-response in the interviews. For a full description of quality control measures, refer to E-9 Methods Report.

⁹ Titles of survey respondents included: pharmacist, assistant pharmacist, owner, medical doctor, technician, or pharmacy employee. In the preliminary report, these people are called “senior pharmacy workers.” This term led many readers to assume that all interviewees were professionally trained pharmacists, thus the secondary report and this consolidated report use the term “respondents.”

¹⁰ The step-over list method involves the following steps: the districts are listed in alphabetical order; the number of distributed sampling points is divided by the number of *nahias* and the result becomes the interval; supervisors select a random entry on the list of *nahias* for a starting point and then rotate the interval over the list; the same is then repeated for neighborhoods within *nahias*.

Province	Urban		Rural		Total	
	#	%	#	%	#	%
Faryab	—	—	34	4	34	4
Herat	90	10	21	2	111	13
Kabul	339	39	54	6	393	45
Kandahar	45	5	12	1	57	6
Khost	—	—	30	3	30	3
Kunduz	20	2	12	1	32	4
Nangarhar	75	9	33	4	108	12
Grand total:	634	72	245	28	879	100

2.2. Interviews

After selecting a pharmacy, interviewers were instructed to use a screening tool to identify the most senior employee (over the age of 18) working at the pharmacy at the time of the visit. All potential interviewees and all interviewers were male. All survey respondents received information about the study and the interview was conducted only when the consent for the study participation was obtained from the respondent. Interviewers explained to respondents that participation was voluntary, they could stop participating at any time, and that their responses would be anonymous.

Interviews averaged 58 minutes in length. The questionnaire consisted of 199 questions that were designed to address the research objectives and 38 management and quality control questions. The face-to-face interviews included direct observation (premises conditions), measurement (counting number of medicines present), and documentation review (license names and dates), covering several service delivery topic areas.

2.3. Interviewer Selection and Supervision

Sixty-five interviewers conducted fieldwork in ten provincial teams. ASCOR held training sessions for potential interviewers and supervisors in Kabul, Jalalabad, Mazar-i-Sharif, Kandahar, and Herat provinces. The training sessions consisted of—

- Review of the questionnaire content (focusing on accurate selection of medicines and recording of medicine label information) and sampling procedures
- Simulated interviews
- Group practice interview at a nearby pharmacy

Participants scoring less than 90 percent correctly on the interview assessment or displaying inadequate performance during the group interview were not invited to participate in fieldwork for the Afghanistan Retail Pharmacy Survey.

Ten provincial supervisors monitored interviewers' work in the field. When there was no opportunity for direct supervision, a supervisor and assistant supervisor revisited selected locations after the completion of interviews or called back if there was a working telephone at the pharmacy. The issues verified during in-person back-checks were proper location and respondent selection, as well as the correct recording of answers to three randomly selected

questions from the main body of the questionnaire. No interviews were rejected as a result of back-checks. Twenty percent of completed interviews (n=268) were back-checked.

2.4. Ethical Review

The IRB of the Afghan MoPH approved the study on March, 4, 2013. The PSI Research Ethics Board reviewed and approved the study via the board's expedited review process on March 6, 2013.

2.5. Data Cleaning and Analysis

Following the interviewers' completion of fieldwork, a supervisor or project manager reviewed each questionnaire for completeness and correct administration of the survey instrument. No errors were identified during this process. Key punching was administered using an in-house program for data entry. After key punching, coding, and data processing, the dataset was reviewed using logic checks to identify possible errors in questionnaire administration or data processing. If review of the questionnaire indicated a possible error in questionnaire administration or recording by an interviewer, field management staff called the respondent to confirm or correct responses. During this process, no major errors suggesting serious problems in administration of the questionnaire by the interviewers were detected. Minor corrections were made in the questionnaires as applicable. ACSOR staff maintained control of the paper questionnaires and electronic dataset throughout fieldwork and data processing. The analysis in this report was drawn largely from frequency and cross-tabulations run from the dataset using SPSS (Statistical Package for the Social Sciences), version 20. Some variables have been re-grouped or re-coded where required for clarity.

The secondary analysis was performed on the original dataset in Excel, with recoding for aggregating sub-samples and the application of different decision rules for coding, as indicated in the relevant sections that follow.

2.6. Limitations

This study of 10 provinces in Afghanistan provides insights into the conditions and challenges facing private retail pharmacies in these areas, but caution should be exercised in generalizing these results to the rest of Afghanistan. Further, provincial-level comparisons should be avoided, as sample sizes vary dramatically across provinces.

Lack of a current and comprehensive sampling frame for the total universe of pharmacies operating in Afghanistan is a limitation in this study. The estimates available at the time of the study design had inconsistencies in district classifications and were only for pharmacies licensed between 2007 AD (1386 SH) and 2012 AD (1390 SH). Therefore, pharmacy totals at the district and settlement level were not used (or available) for this study.

The survey aimed to explore the characteristics of PPROs whose sole or clearly primary business is selling medicines. Other forms of medicine distributing agents such as wholesalers and street vendors, general stores, or grocery shops that sell some medicine were excluded from the study sample.

Considering the sensitive questions included in the survey questions (e.g., licensure status, staffing norms, inspection history), the survey paid special attention to minimizing socially desirable responses. Nonetheless, there remains the possibility that some respondents might have provided what they thought would be socially desirable responses.

The preliminary analysis findings were generated to provide the MoPH with as plain and quick information as possible; sampling weight was not incorporated in the calculation of the values presented

Unless explicitly mentioned, all data were obtained through interview, and thus reflect the respondents' answers to each question. For questions that involved observation, the answers reflect what the interviewers report observing.

3. FINDINGS: LICENSING STATUS OF PHARMACIES

The GDPA operates within the MoPH in Afghanistan and is the prime body for regulating both public- and private-sector pharmaceutical activities within the country. In order to establish a private retail pharmacy in Afghanistan, the proprietor must obtain a license from the GDPA.¹¹ Prior to 2007 AD (1386 SH), Qawanin-e-sehi-wa-barrasi (Qawanin) was the government agency issuing pharmacy licenses in Afghanistan. In 2007 AD (1386 SH), that authority transferred to the GDPA. The Afghanistan Retail Pharmacy Survey asked pharmacies a number of questions to assess their licensing status. Some of the information was self-reported by respondents and some of the information was observed by the interviewer himself.

The MoPH classifies pharmacies according to their amount of capital, area, and location. A Class I pharmacy has capital of at least one million Afs. (approximately 20,000 USD); an area of at least 53 square meters; and is located in the center of cities, densely populated areas, and within 500 meters of a hospital. A Class II pharmacy has capital of at least 500,000 Afs. (approximately 10,000 USD); an area of at least 43 square meters; and is located in other areas of the capital or provinces. A Class III pharmacy has capital of at least 300,000 Afs. (approximately 6,000 USD); an area of at least 38 square meters; and is located in the remote areas, districts, and villages.¹²

3.1. Self-reported Licensing Status

Ninety-five percent of respondents (837 of 879 interviewed) stated that their pharmacy was licensed. Five percent of interviewees claimed that their pharmacy had never been licensed, and almost all of these (41 of 46) were located in areas classified as rural (i.e., smaller towns or bazaars).

Respondents who reported their pharmacies as licensed cited multiple issuing authorities (most of which are valid), however the vast majority of these interviewees said that GDPA

¹¹ Afghanistan Pharmacy Regulations, RPR Article 11.

¹² Pharmacy classes are defined in Article 19 of Afghanistan's Medicines Law of November 4, 2008, approved by Presidential Decree No. 116 of November 18, 2008.

and/or Qawanin issued their pharmacy's license. Table 2 shows how frequently a licensing authority was mentioned, alone or in combination with others.

Table 2: Licensing authorities mentioned, by urban/rural split

Licensing authority	Kabul City (n=339)		Other urban (n=395)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Qawanin	316	93	251	85	179	73	746	85
GDPA	233	69	262	89	157	64	652	74
PHD	0	0	48	16	27	11	75	9
None mentioned	2	1	2	1	—	—	4	<1
MoPH	9	3	8	3	1	0	18	2
MoFi	1	0	—	—	—	—	1	<1
None	—	—	1	<1	41	17	46	5

Table 3 shows the different combinations of licensing authorities mentioned by respondents. According to Afghan regulations, pharmacies are not allowed to simultaneously possess multiple licenses.¹³ In general, once a license is obtained it remains valid until withdrawn based on negative inspection reports, or when the owner changes. In the Afghanistan Retail Pharmacy Survey, approximately 66 percent (n=578) of licensed pharmacies reported having more than one license. Only five pharmacies mentioned an authority other than Qawanin or GDPA, without also mentioning Qawanin or GDPA as a licensing authority. These results indicate a concern of the retail outlet owners with being licensed by the designated authority, and most likely, to have an updated license by the most recent officially designated authority.

Table 3: Frequency of combination of licensing authorities mentioned, by urban/rural split

Licensing authority	Kabul City (n=339)		Other urban (n=395)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Qawanin	99	29	30	10	44	18	173	20
Qawanin, GDPA	210	62	165	56	112	46	487	55
Qawanin, GDPA, PHD	—	—	48	16	21	9	69	8
Qawanin, GDPA, MoPH	4	1	8	3	1	0	13	1
Qawanin, GDPA, MoFi	1	0	—	—	—	—	1	0
Qawanin, PHD	—	—	—	—	1	0	1	0
Qawanin, MoPH	2	1	—	—	—	—	2	0
GDPA	16	5	41	14	20	8	77	9
None mentioned	2	1	2	1	—	—	4	<1
GDPA, PHD	—	—	—	—	3	1	3	<1
GDPA, MoPH	2	1	—	—	—	—	2	<1
PHD	—	—	—	—	2	1	2	<1
MoPH	3	1	—	—	—	—	3	<1
Never registered	—	—	1	<1	41	17	42	5

¹³ RPR Article 13.

3.2. Verified Licensing Status

Table 4 shows that in addition to the 5 percent pharmacies that were never licensed, an additional 38 percent could not produce a copy of the license on the day of the visit. Their classification could not be verified and thus is listed as “unverifiable.” Only 57 percent of all pharmacies included in the survey could produce a proof of license that allowed pharmacy classifications.

Table 4: Verified pharmacy license class, by urban/rural split

License class	Kabul City (n=339)		Other urban (n=395)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Class I	53	16	86	29	24	10	163	19
Class II	95	28	83	28	57	23	235	27
Class III	28	8	19	6	54	22	101	11
Unverifiable	163	48	106	36	69	28	338	38
Never licensed	—	—	1	<1	41	17	42	5

Table 5 cross-matches the mentioned licensing authority with the verified license status and class. The large majority of the pharmacies mentioned Qawanin (85 percent) or GDPA (74 percent) as their licensing authority; these percentages go up to 90 percent and 78 percent, respectively, for pharmacies with a verified license.

Table 5: Mentioned licensing authority, by licensing class

Licensing authority	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Qawanin	144	88	213	91	91	90	298	88	—	—	746	85
GDPA	136	83	189	80	65	64	262	78	—	—	652	74
PHD	33	20	28	12	5	5	9	3	—	—	75	9
MoPH	6	4	2	1	1	1	9	3	—	—	18	2
MoFi	—	—	1	0	—	—	—	—	—	—	1	0
None mentioned	—	—	1	0	1	1	2	1	42	100	46	5

Table 6 cross-matches the different claimed combinations of licenses with the verified license status. See section 3.4 for more analysis.

Table 6: Combination of licensing authorities mentioned, by licensing class

Licensing authority	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Qawanin, PHD	—	—	1	0	—	—	—	—	—	—	1	0
Qawanin, MoPH	—	—	—	—	1	1	1	0	—	—	2	0
Qawanin, GDPA, PHD	31	19	24	10	5	5	9	3	—	—	69	8
Qawanin, GDPA, MoPH	6	4	1	0	—	—	6	2	—	—	13	1
Qawanin, GDPA, MoFi	—	—	1	0	—	—	—	—	—	—	1	0
Qawanin, GDPA	80	49	145	62	51	50	211	62	—	—	487	55

Licensing authority	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Qawanin	27	17	41	17	34	34	71	21	—	—	173	20
PHD	—	—	2	1	—	—	—	—	—	—	2	0
None mentioned	—	—	1	0	1	1	2	1	—	—	4	0
MoPH	—	—	1	0	—	—	2	1	—	—	3	0
GDPA, PHD	2	1	1	0	—	—	—	—	—	—	3	0
GDPA, MoPH	—	—	—	—	—	—	2	1	—	—	2	0
GDPA	17	10	17	7	9	9	34	10	—	—	77	9
Never registered	—	—	—	—	—	—	—	—	42	100	42	5

3.3. Date of Establishment and Licensing

At present, a pharmacy license only needs to be renewed if the pharmacy’s ownership or address changes. The following paragraphs illustrate that a significant number of pharmacies have existed—and have been licensed—for a long time.

The range of time covered in this section (1954 to 2013 AD/1332 to 1392 SH) is divided into periods that reflect different degrees of political and social unrest (table 7). Additionally, in recent years, licensing responsibility shifted from Qawanin to GDPA. Some pharmacies reported receiving a license from Qawanin after the official transition of authority to the GDPA.

Table 7: Key to periods of licensing

Period	Solar Hijri (SH) years	Anno Domini (AD) years	Description
I	Before 1357	Before 1978	Pre-communist era
II	1357–1371	1978–1993	Communist era
III	1372–1375	1993–1997	Mujaheddin era
IV	1376–1379	1997–2001	Taliban era
V	1380–1386	2001–2008	Recent, Qawanin licensing
VI	1387–1392	2008–2013	Recent, GDPA licensing

3.3.1. Reported Date of First Establishment

Respondents were asked to cite the year their pharmacy was established. Table 8 shows the reported establishment period by urban/rural split. The table cannot reflect the total number of pharmacies open in a given period; it reflects the period in which those pharmacies presently functioning first opened. The data show that in areas outside Kabul City, the majority of the pharmacies included in the sample were established in periods V and VI (the last 10 years), while the majority of pharmacies sampled in Kabul City were established more than 10 years ago. This could indicate that the private retail outlets have followed the effort of the MoPH to make health services, including pharmaceutical services, more available outside the Kabul metropolitan area. Additional research could confirm or contradict this.

Table 8: Period of first establishment, by urban/rural split

Period	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
I	11	3	8	3	3	1	22	3
II	69	20	42	14	34	14	145	16
III	67	20	38	13	28	11	133	15
IV	24	7	28	9	17	7	69	8
V	95	28	92	31	76	31	263	30
VI	55	16	80	27	68	28	203	23
Unknown	18	5	7	2	19	8	44	5

Table 9 shows that slightly more than half all licensed pharmacies (53 percent), including those that could not show the license on the day of the visit, claim to have opened for business in the last 10 years (periods V and VI). Few of the unlicensed pharmacies claim to have been in business for more than 10 years, which may indicate that unlicensed pharmacies tend to close or obtain a license after a while.

Table 9: Period of first establishment, by licensing class

Period	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
I	5	3	5	2	1	1	11	3	—	—
II	24	15	39	17	15	15	66	20	1	2
III	34	21	35	15	17	17	47	14	—	—
IV	12	7	25	11	11	11	21	6	—	—
V	60	37	61	26	31	31	97	29	14	33
VI	25	15	69	29	24	24	71	21	14	33
Unknown	3	2	1	0	2	2	25	7	13	31

3.3.2. Reported Date of First Licensing

The period of first registration is similar to the periods of first opening (table 10). This may indicate that most pharmacy owners are keen to get registered.

Table 10: Period of first licensing, by urban/rural split

Period	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
I	9	3	8	3	3	1	20	2
II	57	17	36	12	28	11	121	14
III	54	16	35	12	25	10	114	13
IV	20	6	28	9	17	7	65	7
V	88	26	85	29	63	26	236	27
VI	79	23	86	29	60	24	225	26
Unknown	32	9	16	5	8	3	56	6
Never		0	1	0	41	17	42	5

3.3.3. Period of Verified License Date

Table 11 shows that the large majority of verified licenses were issued in the last 10 years.

Table 11: Period of verified license, by urban/rural split

Period of verified license	Kabul City (n=176)		Other urban (n=188)		Rural (n=135)		Total (N=499)	
	#	%	#	%	#	%	#	%
I	2	1	3	2	3	2	8	2
II	21	12	23	12	16	12	60	12
III	22	13	24	13	14	10	60	12
IV	10	6	22	12	14	10	46	9
V	33	19	59	31	44	33	136	27
VI	88	50	57	30	44	33	189	38

Table 12 shows the proportion of pharmacies that claimed registration and for which a license was verified. Of the pharmacies claiming registration, 64 percent had a verifiable license. Because the verifiable license was not necessarily the first license obtained, these data do not confirm the claimed date of pharmacy establishment.

Table 12: Registration claimed and license verified, by period of first registration

Period of first registration	Registration claimed (#)	License verified		License unverifiable	
		#	%	#	%
I	20	10	50	10	50
II	121	70	58	51	42
III	114	71	62	43	38
IV	65	47	72	18	28
V	236	146	62	90	38
VI	225	155	69	70	31
Total:	781	499	64	282	36

Table 13 shows the proportion of pharmacies claiming a first registration date that matches the period of their verified license (59 percent). The concordance between the date of first establishment is lower in Kabul City (46 percent), than in other urban (67 percent) and rural areas (68 percent).

Table 13: Pharmacies in which period of claimed first registration matches period of verified license, by urban/rural split

Period	Kabul City			Other urban			Rural			Total		
	R1	LM	%M	R1	LM	%M	R1	LM	%M	R1	LM	%M
	#	#	%	#	#	%	#	#	%	#	#	%
I	9	2	22	8	3	38	3	3	100	20	8	40
II	57	21	37	36	23	64	28	16	57	121	60	50
III	54	22	41	35	24	69	25	14	56	114	60	53
IV	20	8	40	28	22	79	17	14	82	65	44	68
V	88	33	38	85	59	69	63	43	68	236	135	57
VI	79	56	71	86	56	65	60	43	72	225	155	69
Total:	307	142	46	278	187	67	196	133	68	781	462	59

R1 = First registration claimed
 LM = Verified license period matches claimed registration period
 %M = Percentage of pharmacies in which verified license period matches claimed registration period

Table 14 shows the difference between the pharmacy’s claimed period of first registration and the period in which the verified license was issued. The issuing period of the verified license differed from the period of claimed first registration for 33 pharmacies; of these, 31 pharmacies had a verified license from the period in which GDPA had issuing responsibility for licenses.

Table 14: Comparison (#) of period of claimed first registration and issuing period of verified license

Period of claimed first registration	Issuing period of verified license						Un-verifiable
	I	II	III	IV	V	VI	
I	8	—	—	—	—	2	10
II	—	60	—	—	—	10	51
III	—	—	60	2	1	8	43
IV	—	—	—	44	—	3	18
V	—	—	—	—	135	11	90
VI	—	—	—	—	—	155	70

3.4. Unlicensed Pharmacies

Five percent of the sample (n=42) reported that their pharmacy did not have a license. Reported reasons for not obtaining a license include¹⁴—

- Low economy (33 percent, n=14)
- Lack of law implementation (14 percent, n=4)
- Pharmacy is newly opened (12 percent, n=5)
- Lack of time (10 percent, n=4)
- Lack of a professional person (7 percent, n=3)
- No need (7 percent, n=3)
- Corruption (7 percent, n=3)
- No one asks for it (5 percent, n=2)
- In process (2 percent, n=2)

When asked how likely it would be that the pharmacy would be licensed in the next six months (from interview date), 40 percent (n=17) reported it was “somewhat or very likely,” 31 percent (n=13) said it was “not very or not at all likely,” and 26 percent (n=11) said they did not know whether their pharmacy would be licensed in the next six months. Those reporting that they were likely to obtain a license in the next six months indicated they want their pharmacy to be legal, or that they have started the process. Those reporting that they are unlikely to obtain a license said it was due to corruption, security problems, or because they think they do not have to (i.e., the government does not pay attention). All of these responses came from respondents located in outlying districts of Khost and Kandahar provinces.

3.5. Pharmacy Inspections

The vast majority of pharmacies (89 percent, n=786) self-reported being visited by an inspector. Of those reporting inspection, 98 percent stated that the inspection occurred within the last year and 65 percent in the last quarter. Respondents said that inspections were conducted by Qawanin (61 percent, n=467), the Provincial Public Health Office (PPHO) (26 percent, n=200), the MoPH (8 percent, n=59), or the GDPA (4 percent, n=29).

Table 15 shows that pharmacies that were never licensed also were rarely inspected. Class I and Class II pharmacies report more frequently than Class III pharmacies that the last inspection took place within the three months prior to the visit.

¹⁴ Respondents were allowed to mention up to two reasons for not being licensed. The two mentions were combined. For example, a total of 10 percent of pharmacies mentioned “lack of time” as a reason for not being licensed, either in the first mention or in the second mention.

Table 15: Self-reported inspections, by verified license status

Inspected	Class I (n=163)		Class II (n=235)		Class III (n=101)		Inspection unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Never	7	4	24	10	13	13	18	5	31	74	93	11
Ever	156	96	211	90	88	87	320	95	11	26	786	89
Last year	142	87	191	81	77	76	288	85	8	19	706	80
Last quarter	112	69	162	69	59	58	231	68	5	12	569	65

Table 16 shows that Kabul-based pharmacies report more recent inspections than pharmacies in smaller towns and rural areas, and pharmacies in rural areas have a higher proportion claiming never to have been inspected.

Table 16: Self-reported inspections, by urban/rural split

Inspected	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Never	9	3	28	9	56	23	93	11
Ever	330	97	267	91	189	77	786	89
Last year	317	94	226	77	163	67	706	80
Last quarter	296	87	159	54	114	47	569	65

Overall, less than 10 percent of the pharmacies could produce written proof of the last inspection.

3.6. 200-Meter Rule

According to Afghan law, no pharmacy should be established within 200 meters of an existing pharmacy. Only a minority (19 percent) of all pharmacies in the sample complies with this rule, and 80 percent of the pharmacies within 200 meters claimed to be registered.

Table 17: Other pharmacies (any and registered) within 200 meters

PPROs (#)	At least 1 PPRO within 200 meters		Average # PPROs within 200 meters		Max. # PPROs within 200 meters	
	#	%	Any	Reg'd	Any	Reg'd
By license class						
Class I (n=163)	137	84	6	5	45	45
Class II (n=235)	191	81	4	4	25	25
Class III (n=101)	76	75	3	3	15	14
Unverifiable (n=338)	280	83	4	3	43	41
Unlicensed (n=42)	28	67	4	<1	9	3
By urban/rural split						
Kabul City (n=339)	308	91	4	3	14	14
Other urban (n=295)	230	78	6	5	45	45
Rural (n=245)	174	71	3	2	9	8
Total (N=879) :	712	81	4	3	45	45

3.7. Compliance with Licensing and Inspection Criteria

If considering criteria individually, one could conclude that most pharmacies are in good physical condition. However, if considering all criteria for licensing and inspection listed in Afghan law and decree (physical premises criteria including the 200-meter rule, recommended storage criteria, and staffing requirements according to license class), only one pharmacy is fully compliant with all recommended government standards (tables 18 and 19).

Table 18: Surveyed PPROs that meet all minimum requirements, by licensing class

Requirement	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Staffing	82	50	121	51	64	63	249	74	9	21	525	60
Physical structure	1	1	6	3	7	7	20	6	1	2	35	4
Storage	4	2	3	1	1	1	9	3	0	0	17	2
Licensing	0	0	0	0	0	0	1	0	0	0	1	0

Table 19: Surveyed PPROs that meet all minimum requirements, by urban/rural split

Requirement	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Staffing	260	77	147	50	118	48	525	60
Physical structure	10	3	9	3	16	7	35	4
Storage	7	2	5	2	5	2	17	2
Licensing	0	0	0	0	1	0	1	0

The fact that a facility did not comply with requirements on the day of the interview does not mean it did not comply with the requirements when the license was obtained. More detailed analysis in section 4 of this report shows that certain requirements are largely met, while

others seem difficult to fulfill, such as having a functioning refrigerator and respecting color codes for medicine storage.

Staffing requirements are respected by the majority of the pharmacies, particularly in Kabul City where GDPA directly oversees the licensing process and where inspections take place more frequently. This could indicate that a more efficient licensing process and more systematic inspections could positively influence pharmacy compliance.

The apparent lack of compliance with licensing and inspection requirements needs to be considered in context: many pharmacies were established before the present licensing and inspection criteria were initiated, and some international standards are unrealistic for many parts of present-day Afghanistan. Noncompliance makes a strong case for establishing realistic minimum standards, informing and enabling pharmacies to comply with those standards (e.g., clear classification of all LDL medicines and each class's storage requirements), and establishing a systematic re-licensing (according to new criteria) process. It also suggests that licenses should be valid for a limited time period (e.g., four or five years) and then be renewed through a speedy renewal procedure that applies any changes in licensing criteria. It may also make the case for an accreditation program in which pharmacies can obtain publicly known credits against set criteria.

4. FINDINGS: PHARMACY SERVICE QUALITY

The pharmacy service quality section of the survey focuses on six major topics: 1) physical standards of the pharmacy, 2) medicine storage, 3) waste management, 4) pharmacy staff and their knowledge, 5) pharmacy hours and availability, and 6) pharmacy record keeping.

4.1. Physical Standards of the Pharmacy

The physical criteria for obtaining a pharmacy license vary by pharmacy class and are set forth by Afghan Medicine Law Articles 19 and 20; they are further detailed in the Retail Pharmacy Regulation.

4.1.1. Infrastructure and Working Space

To assess each visited pharmacy's physical infrastructure and working space, interviewers looked for 15 pre-determined characteristics which were agreed upon with GDPA, including the presence/absence of holes in the wall or in the ceiling, signs of moisture, broken windowpanes, and pests. Interviewers also considered the pharmacy's working surface (as required by their licensing status) and if the visited pharmacy was within 200 meters of another pharmacy (see section 3.6).

Table 20 shows that the building infrastructure of most pharmacies that self-reported as ever registered (more than 70 percent) seems to be of reasonable quality. But only one-third of visited pharmacies have a working surface that corresponds with their licensing status¹⁵ and most pharmacies do not comply with the 200-meter rule (section 3.6). Only 4 percent of visited pharmacies complied with all three criteria regarding infrastructure. While failure to

¹⁵ When a pharmacy's license status was not verifiable, interviewers applied Class III criteria.

comply should not lead to the lowering of realistic standards, international standards that are rarely complied with could be re-evaluated for appropriateness in the Afghan context, and clear guidance on how to promote optimal compliance should be given by the GDPA.

Table 20: Surveyed PPROs respecting physical building and location requirements, by licensing class

Requirement	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
All building infrastructure OK	134	82	181	77	78	77	235	70	20	48
Walls smooth w/o holes	146	90	199	85	84	83	261	77	29	69
Floor level and concrete	155	95	219	93	96	95	311	92	25	60
Ceiling insulated	149	91	220	94	94	93	310	92	35	83
Working area of pharmacy OK for licensing status	10	6	31	13	46	46	154	46	8	19
No pharmacy within 200m	26	16	44	19	25	25	58	17	14	33
Physical criteria OK	1	1	6	3	7	7	20	6	1	2

Data in Table 21 show that the pharmacies that do not meet building infrastructure requirements are more frequent in rural areas. However, less than 10 percent of the pharmacies surveyed in Kabul City comply with the 200-meter rule.

Table 21: Surveyed PPROs respecting physical building and location requirements, by urban/rural split

Requirement	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
All building infrastructure OK	274	81	209	71	165	67	648	74
Walls smooth w/o holes	294	87	229	78	196	80	719	82
Floor level and concrete	326	96	270	92	210	86	806	92
Ceiling insulated	318	94	279	95	211	86	808	92
Working area of pharmacy OK for licensing status	102	30	76	26	71	29	249	28
No pharmacy within 200m	31	9	65	22	71	29	167	19
Physical criteria OK	10	3	9	3	16	7	35	4

4.1.2. Electricity

All respondents reported that they have electricity in their pharmacies. When asked what type of electricity they had available, 80 percent (n=707) indicated municipal electricity, 44 percent (n=383) said electricity from generator, and 13 percent (n=110) reported having electricity from solar panels. The survey did not assess the number of hours per day that electricity was available.

4.1.3. Area of the Pharmacy

In Afghanistan, a pharmacy’s license class determines its minimum size (to include back room and storage area). Survey data indicate that very few visited pharmacies have enough space: only 6 percent (n=10) of Class I pharmacies, 13 percent (n=31) of Class II pharmacies, and 46 percent (n=46) of Class II pharmacies meet their license’s area requirements. More

than half of the pharmacies surveyed (57 percent, n=503) are less than the size required for Class III pharmacies (38 square meters), as shown in Table 22.

Table 22: Area of the pharmacy, by licensing class

Area of pharmacy (m ²)	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Less than 38	94	58	137	58	55	54	183	54	34	81	503	57
38 to 42	45	28	67	29	36	36	94	28	8	19	250	28
43 to 52	14	9	28	12	8	8	46	14	—	—	96	11
53 and more	10	6	3	1	2	2	14	4	—	—	29	3
Don't know	—	—	—	—	—	—	1	<1	—	—	1	<1

Respondents also reported having the following facilities at their pharmacies—

- Private consultation space for customers (66 percent, n=584)
- Sleeping room for night duty staff (64 percent, n=564)
- Washroom/toilet (45 percent, n=396)
- Stock or storage room (24 percent, n=209)
- Dispensary room (13 percent, n=110)¹⁶

4.2. Medicine Storage

Article 16 of the Retail Pharmacy Regulations (RPR) divides up medicines in four categories, with each category to be stored in a cabinet with a panel of a particular color. However, no detailed classification of all LDL medicines in the four categories could be obtained during preparation or analysis of the survey. Article 17 of the RPR gives further general advice on physical storage conditions of medicines in pharmacies in order to safeguard their quality. To determine general storage and shelving practices, interviewers asked survey respondents how they store six specific medications (selected because they represent varying levels of restricted use or toxicity when improperly used).

The majority (59 percent) of all pharmacies in the survey store medicine outside the reach of direct sunlight, either by having the shelves away from windows, or by using protective curtains or shades. Less than one-third of the pharmacies stored different types of medicines according to the recommended color schemes. This is most likely due to the absence of a comprehensive reference matching medicines and colors. Of more concern is that less than only one-fifth of visited pharmacies had a refrigerator available to safeguard heat-sensitive medicine. In total, 2 percent (n=17) of visited pharmacies meet all three storage criteria (tables 23 and 24).

¹⁶ Thirty-eight percent of pharmacies reported they do not count or mix medicines; hence they would have no need for a dispensary room.

Table 23: Surveyed PPROs respecting storage requirements, by licensing class

Requirement	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Shelves protected from sunlight	100	61	129	55	57	56	203	60	29	69	518	59
Panel colors OK	44	27	56	24	21	21	104	31	19	45	244	28
Sun protection and panels colors OK	19	12	31	13	10	10	64	19	15	36	139	16
Refrigerator available	27	17	30	13	13	13	60	18	1	2	131	15
All storage criteria respected	4	2	3	1	1	1	9	3	0	0	17	2

Table 24: Surveyed PPROs respecting storage requirements, by urban/rural split

Requirement	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Shelves protected from sunlight	227	67	155	53	136	56	518	59
Panel colors OK	112	33	58	20	74	30	244	28
Sun protection and panels colors OK	72	21	25	8	42	17	139	16
Refrigerator available	49	14	62	21	20	8	131	15
All storage criteria respected	7	2	5	2	5	2	17	2

4.2.1. Inventory Organization

Most pharmacies (89 percent, n=784) reported selling stock of different batches on a first expiry, first out (FEFO) basis, and 6 percent (n=56) reported selling medicine on a first in, first out (FIFO) basis. Respondents reported that they arranged their stock by (multiple mentions allowed)—

- How the medicine works (56 percent, n=489)
- Form (50 percent, n=439)
- Complaint (38 percent, n=335)
- Alphabetical order (27 percent, n=233)

4.2.2. Refrigeration

Pharmacy regulations in Afghanistan require that pharmacies have a working refrigerator.¹⁷ Twelve percent of visited pharmacies had a working refrigerator (n=102) and 3 percent (n=29) reported having access to a refrigerator offsite.

Interviewers confirmed that the refrigerator was working in 90 percent of pharmacies with an onsite refrigerator, that 76 percent (n=77) were properly placed away from direct sunlight and heating elements, and 58 percent (n=59) had a thermometer inside. In 24 locations, the thermometer inside the refrigerator could be inspected, and in 14 locations, the temperature inside the refrigerators was higher than 8 C. Almost one-third of the locations with

¹⁷ Drugs Law Article 17.

refrigerators had a temperature sheet (n=33) and in the vast majority of these, it was current updated (94 percent, n=31).

Respondents reported that onsite refrigerators were powered by the following sources (multiple mentions were allowed)—

- Municipal power (99 percent)
- Generator (37 percent)
- Solar panel for building or generator (4 percent)
- Solar panel dedicated to refrigerator (2 percent)
- Gas (2 percent)
- Kerosene (1 percent)

Sixty-five percent (n=488) of pharmacies that did not have onsite refrigerators report selling medicines that should be refrigerated—

- Oxytocin: Sold by 42 percent of pharmacies without onsite refrigerators
- Methergine: Sold by 39 percent of pharmacies without onsite refrigerators
- Insulin: Sold by 13 percent of pharmacies without onsite refrigerators

4.3. Waste Management

To gather information on waste management, interviewers asked survey respondents how they dispose of unsold, expired medications and how they dispose of used syringes/needles.

4.3.1. Disposal of Unsold, Expired Medications

According to Article 38 of Afghanistan's Drugs Law (2008), expired medicines should be disposed of according to World Health Organization (WHO) guidelines. Of the 879 pharmacies sampled, only three (less than one percent) reported that their facility does not dispose of unsold expired medication as recommended. A series of high profile raids on facilities that were selling expired medicines occurred just before the survey period; this might have made respondents reluctant to disclose any known, noncompliant procedures with regard to expired medicine.¹⁸

Table 25 shows all methods for disposal of expired medicine. Most frequently, medicine is reportedly thrown out with trash or in the sewer, sometimes after burning. Burning was more frequently mentioned by Class III and unlicensed pharmacies. The relatively high percentages claiming more sophisticated destruction methods (encapsulation, inertization, incineration, and decomposition) most likely indicate that respondents did not fully understand these terms, since no pharmacies seemed to have the necessary equipment and facilities to adequately execute these disposal methods.

The recommended method of disposal depends on the medicine being destroyed. The survey captured disposal methods but respondents were not asked to specify which method was used for which type of medicine.

¹⁸ For example, in January 2013 Pajhwok reported that expired medicines were "set afire in front of the [public health joint] commission and members of the general public" ("Two Tons Of Expired Medicines Torched," January 17, 2013).

Table 25: Methods of disposing of expired medicine, by licensing class

Disposal method	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Hand over to other entities												
Manufacturer	25	15	35	15	9	9	57	17	7	17	133	15
Qawanin	17	10	16	7	3	3	13	4	—	—	49	6
Hospital	5	3	8	3	5	5	7	2	—	—	25	3
PPHO	16	10	4	2	2	2	4	1	—	—	26	3
Municipality	—	—	1	0	—	—	1	0	—	—	2	0
Discard												
Trash	117	72	146	62	62	61	236	70	29	69	590	67
Sewer	22	13	39	17	26	26	73	22	8	19	168	19
Bury	—	—	3	1	1	1	5	1	—	—	9	1
Destroy by fire												
In open container	62	38	113	48	63	62	164	49	29	69	431	49
Incinerator	2	1	8	3	2	2	5	1	3	7	20	2
Others												
Encapsulate	12	7	11	5	10	10	15	4	—	—	48	5
Inertization	4	2	3	1	4	4	9	3	—	—	20	2
Decompose	5	3	9	4	3	3	11	3	—	—	28	3
Safety box	—	—	1	0	—	—	—	—	—	—	1	0
Never had expired medicine	1	1	—	—	—	—	—	—	—	—	1	0
No disposal mentioned	1	1	1	0	—	—	1	0	—	—	3	0

Table 26 shows the number of pharmacies that utilize methods deemed sufficient in a resource-poor environment like Afghanistan. Class I pharmacies most frequently claim to hand over expired medicines to other institutions, but still less than half claim to do so. More than two-thirds of the pharmacies discard expired medicine in the trash or sewer, and half of those burn the medicine as well.

Table 26: Summary of methods of disposing of expired medicine, by licensing class

Disposal method	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Hand over to others	63	39	64	27	19	19	82	24	7	17
Discard	124	76	154	66	66	65	252	75	30	71
Destroy by fire	63	39	115	49	65	64	168	50	29	69
Burn and bury	—	—	3	1	1	1	5	1	—	—
Burn and discard	55	34	74	31	39	39	107	32	17	40

The data in table 27 may indicate that pharmacies in Kabul City hand over expired medicine more readily to the authorities or suppliers—likely because of their physical proximity.

Table 27: Summary of disposal of expired medicine, by urban/rural split

Disposal method	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Hand over to others	129	44	48	14	58	24	235	27
Discard	267	91	209	62	150	61	626	71
Destroy by fire	194	66	119	35	127	52	440	50
Burn and bury	6	2	0	0	3	1	9	1
Burn and discard	115	39	105	31	72	29	292	33

4.3.2. Disposal of Used Syringes/Needles

More than one-third of sampled pharmacies (35 percent, n=309) did not carry syringes. Among the pharmacies that do carry them, respondents cited acceptable and unacceptable methods for both on-site and off-site disposal (table 28). The high percentage of pharmacies that put at least some used syringes in the trash (an inappropriate disposal method) is concerning and suggests that respondents lack knowledge about and/or access to appropriate disposal methods for used syringes and needles.

Table 28: Reported disposal methods for syringes/needles (among pharmacies carrying those items, n=570)

Acceptable, on-site methods	#	%	Acceptable, off-site methods	#	%
Buried on premises	227	40	To local hospital	36	6
Encapsulation	30	5	To PPHO	16	3
Incineration	28	5			
Unacceptable methods	#	%	Other methods*	#	%
Dispose in trash	410	72	Burning**	58	10
Does not dispose of used items	87	11	Sanitize for reuse	6	1

*While not prescribed, there are not specific rules against these methods.
 **This was a volunteered response given separately from the “incineration” option and referring to burning in an open container instead of an incinerator.

4.4. Pharmacy Staff and Their Knowledge

The Afghanistan Retail Pharmacy Survey included questions about pharmacy staff and their education, and related to patient care. The latter aimed to determine the level of knowledge of respondents. All survey respondents were male; female staff were not encountered in any of the survey locations.

4.4.1. Pharmacy Staffing and Education

Licensed Class I and Class II pharmacies are required to have a full-time pharmacist, and Class III pharmacies should have a full-time pharmacy assistant. Interviewers asked respondents the highest level of education they attained. Because respondents were the most senior staff present on the day of the visit (see section 2.1), these data help determine

pharmacy compliance with staffing requirements. Data are disaggregated by pharmacy licensing class in table 29 and disaggregated by rural/urban split in table 30.

In Class I and II pharmacies, 46 percent of respondents were pharmacists (bachelor, master or PhD). In Class III pharmacies, 57 percent of respondents were pharmacists or assistant pharmacists. In the pharmacies where the license could not be inspected, 70 percent of respondents were pharmacists or assistant pharmacists. In unlicensed pharmacies, only 17 percent of respondents were pharmacists or assistant pharmacists.

Table 29: Claimed level of highest education of respondent, by licensing class

Level of education	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
PhD of pharmacy	—	—	1	<1	3	3	—	—	—	—
Master of pharmacy	6	4	3	1	3	3	6	2	—	—
Bachelor pharmacist	68	42	106	45	26	26	142	42	3	7
Assistant pharmacist	44	27	70	30	25	25	89	26	4	10
Medical doctor	8	5	12	5	7	7	16	5	3	7
12th grade complete	35	21	39	17	34	34	76	22	25	60
9th grade or less	2	1	4	2	2	2	8	2	7	17
Illiterate/no school	—	—	—	—	1	1	1	<1	—	—

Most pharmacies surveyed (74 percent) had a respondent with formal training in medicines and their use (pharmacist, assistant pharmacist, or medical doctor). Table 30 shows that the qualifications of the respondents vary in cities and rural areas. In Kabul City, 84 percent of respondents were pharmacists or assistant pharmacists; that was the case for 70 percent of pharmacies in other urban areas, and for 59 percent in rural areas.

Table 30: Claimed level of highest education of respondent, by urban/rural split

Level of education	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
PhD of pharmacy	—	—	2	1	2	1	4	<1
Master of pharmacy	8	2	6	2	4	2	18	2
Bachelor pharmacist	191	56	92	31	62	25	345	39
Assistant pharmacist	87	26	75	25	70	29	232	26
Medical doctor	14	4	14	5	18	7	46	5
12th grade complete	38	11	95	32	76	31	209	24
9th grade or less	1	<1	10	3	12	5	23	3
Illiterate/no school	—	—	1	<1	1	<1	2	<1

In total, 84 percent of respondents reported that a pharmacist or assistant pharmacist was present on the day of the interview, with a high of 93 percent in Class I pharmacies and a low of 79 percent in pharmacies with unverifiable licenses and in pharmacies that claimed never to have been licensed. Table 31 shows that the difference between rural and urban areas is small.

Table 31: Outlets with pharmacist or pharmacy assistant present on the day of the visit

Type of outlet	Present		Not present	
	#	%	#	%
By licensing class				
Class I (n=163)	151	93	12	7
Class II (n=235)	206	88	29	12
Class III (n=101)	83	82	18	18
Unverifiable n=338)	268	79	70	21
Unlicensed (n=42)	33	79	9	21
By urban/rural split				
Kabul City (n=339)	295	87	44	13
Other urban (n=295)	251	85	44	15
Rural (n=245)	195	80	50	20
Total (N=879):	741	84	138	16

Among respondents, 46 percent (n=402) reported their title as “pharmacist,” 26 percent (n=232) as “assistant pharmacist,” and 14 percent (n=126) as “medicine seller.”

Among respondents, 29 percent (n=258) report having received supplementary pharmacy training outside of their formal schooling. Courses included training about medicine, rational medicine use, family planning, and administering injections. Respondents were not required to show proof of any of these educational qualifications.

Table 32 shows the percentage of pharmacies in which claimed staffing met the requirements of their licensing class. If the pharmacy’s license could not be verified, requirements for a Class III license were applied; this might have caused an overestimation of pharmacy compliance in that category. Three-quarters of pharmacies in Kabul City and half of pharmacies outside Kabul City are staffing compliant according to self-reports.

Table 32: Pharmacy outlets compliant with staffing requirements (self-reported)

Type of outlet	#	%
By licensing class		
Class I (n=163)	82	50
Class II (n=235)	121	51
Class III (n=101)	64	63
Unverifiable (n=338)	249	74
Unlicensed (n=42)	9	21
By urban/rural split		
Kabul City (n=339)	260	77
Other urban (n=295)	147	50
Rural (n=245)	118	48
Total (N=879):	525	60

4.4.2. Knowledge of Pharmacy Staff

In order to gauge the pharmaceutical knowledge of respondents, the survey included specific questions about patient care.

When asked what type of information they provide when dispensing medicines, respondents report discussing with patients (multiple mentions allowed)—

- How to take the medication (82 percent, n=720)
- When to take the medication (80 percent, n=704)
- Frequency: how many times a day (67 percent, n=590)
- Dosage: how much each time (66 percent, n=582)
- Length of treatment (39 percent, n=338)
- How to store the medication (37 percent, n=328)
- Common side effects¹⁹ (23 percent, n=200)
- Pregnancy-related issues (20 percent, n=172)
- Ask patient if they understand how to prepare the medicine (17 percent, n=152)

Only four respondents (0.5 percent of the sample) reported that they do not provide any information to patients when dispensing medication. Adherence to the prescribed treatment depends on the completeness of the instructions for use provided to the patient. Basic information that should be provided, in addition to the name of the medicine, includes: exact dose to administer, frequency of dose to administer, length of treatment, how to administer the dose, and potential side effects associated with the medicine.²⁰ Minimal information that would allow a patient to complete treatment as prescribed should include dosage, frequency, and length of treatment. Table 33 shows that less than one-fourth reported regularly provide this minimal information. The results clearly show room for improving dispensing practices.

Table 33: Providing information on dosage, frequency, and length of treatment

Type of outlet	#	%
By licensing class		
Class I (n=163)	46	28
Class II (n=235)	48	20
Class III (n=101)	19	19
Unverifiable (n=338)	72	21
Unlicensed (n=42)	5	12
By urban/rural split		
Kabul City (n=339)	65	19
Other urban (n=295)	68	23
Rural (n=245)	57	23
Total (N=879):	190	22

Table 34 includes respondent answers to four specific patient care scenarios. The survey results show that knowledge about appropriate patient care (treatment and advice) can be improved.

¹⁹ Providing patients with information about common side effects of medication is required by law in Afghanistan (Medicine Law, Article 30).

²⁰ Keene, Douglas, Paul Ickx, and Julie McFadyen, 2000. *Drug Management for Childhood Illness Manual*. Published for the US Agency for International Development by the Rational Pharmaceutical Management Project, Arlington, VA: Management Sciences for Health

Table 34: Knowledge about patient care (N=879)

Survey question and question#	% that gave the correct answer	% that gave the incorrect answer
Q27: What side effects would you warn patients about when they receive amoxicillin?	40*	60
Q28: If a patient comes into your pharmacy complaining of coughing and night sweats, what would you recommend that the patient do?	60	40
Q29: A father of a three-year-old child is asking for a drug, saying that his son was diagnosed with bronchial asthma. Which one of the following drugs would you instruct him to give his child?	15	85
Q30: A 20-year old woman is asking for drug after she was diagnosed with urinary tract infection. Which one of the following drugs would you instruct her to take?	15	85

*An answer was considered correct if respondent gave at least three common side effects or two common side effects and one rare side effect.

4.5. Accessibility of Services

4.5.1. Opening Hours

Medicine accessibility is dependent in part on the opening hours of the pharmacies. Data in table 35 show that pharmacies claimed to be open an average of more than 10 hours a day, on weekdays, Thursdays, and Fridays. There are only slight differences among license classes.

Table 35: Average hours open per day, by licensing class

	Class I	Class II	Class III	Unverifiable	Unlicensed	Total
Weekday	13	12	12	12	10	12
Thursday	12½	11¼	11½	11¾	9¾	11¾
Friday	10¼	10¼	10¼	10½	7½	10¼

Table 36 shows little difference in opening hours between urban and rural outlets.

Table 36: Average hours open per day, by urban/rural split

	Kabul City	Other urban	Rural
Weekday	11¾	12¾	11½
Thursday	11¾	12¼	11¼
Friday	11¼	9¼	10¼

Table 37 shows that very few pharmacies are closed on Thursday or Friday (less than one in six for the total sample).

Table 37: Outlets closing on weekends, by licensing class

	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Thursday	1	1	—	—	3	3	1	<1	—	—	5	1
Friday	28	17	27	11	13	13	53	16	14	33	135	15

Table 38 shows that in Kabul City, one in five pharmacies closes on Friday, and a smaller proportion does so in other urban and in rural areas. This does not necessarily mean that accessibility in Kabul City is lower, since there is a higher concentration of pharmacies in Kabul City (reflected in more pharmacies having at least one other pharmacy within 200 meters).

Table 38: Outlets closing on weekends, by urban/rural split

	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)	
	#	%	#	%	#	%
Thursday	2	1	—	—	3	1
Friday	72	21	30	10	33	13

Table 39 shows that very few pharmacies are open 24 hours a day and seven days a week. Most of these are located in Kabul City.

Table 39: Pharmacies open 24/7

Type of outlet	Weekdays (#)	Weekdays and Thursday (#)	All days (#)
By licensing class			
Class I (n=163)	4	4	4
Class II (n=235)	3	3	3
Unverifiable n=338)	8	5	4
By urban/rural split			
Kabul City (n=339)	9	7	7
Other urban (n=295)	2	1	
Rural (n=245)	4	4	4
Total:	15	12	11

4.5.2. Night Duty Listing

Since very few pharmacies offer 24-hour services, the availability of night duty lists is important to assure access to medicine, and Article 19 of the RPR requires that pharmacies visibly post the list. Table 40 shows that 53 percent of pharmacies surveyed had a night duty list posted on the day of the interview, and only 38 percent of all pharmacies surveyed had the list posted where it could be read from outside the building.

Table 40: Availability and readability of night duty list, by licensing class

Status of night duty list	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Posted in pharmacy	92	56	142	60	46	46	185	55	3	7	468	53
Readable from outside	70	43	103	44	32	32	131	39	2	5	338	38

Table 41 indicates that three-quarters of the pharmacies in Kabul City had the night duty list posted, and the majority of those were readable from the outside. In other urban areas and in rural areas, the lists were available and readable about half as frequently as in Kabul City.

Table 41: Availability and readability of night duty list, by Urban/Rural split

Status of night duty list	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)	
	#	%	#	%	#	%
Posted in pharmacy	249	73	131	44	88	36
Readable from outside	195	58	86	29	57	23

4.5.3. Business Affiliation with Other Health Workers

Table 42 shows that in the total sample, 76 percent of the pharmacies surveyed reported being close to a hospital or medical doctor's office, and slightly more than one-third reported having no close collaboration with other health workers.

Of the pharmacies surveyed, 59 percent report close collaboration with private health workers or facilities, while 18 percent report close collaboration with public health facilities. The difference may be explained by the fact that public hospitals usually have a public pharmacy attached, and most public clinics, where medical care and pharmaceutical services are ensured by contracted NGOs, provide essential medicine free of charge. Pharmacies in Kabul City reported less collaboration than those in other areas.

Table 42: Business affiliation with nearby health providers, by urban/rural split

Collaboration	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Near MD or hospital	246	73	259	88	161	66	666	76
No close collaboration	169	50	65	22	86	35	320	36
Close collaboration with private	146	43	213	72	128	52	523	59
MD	77	23	57	19	38	16	487	55
Clinic, private	33	10	18	6	10	4	172	20
Hospital, private	167	49	219	74	137	56	61	7
Close collaboration with public	34	10	11	4	50	20	154	18
Clinic, public	11	3	26	9	38	16	95	11
Hospital, public	9	3	12	4	17	7	75	9
Other, public	43	13	39	13	72	29	38	4

Table 43 shows that there is little difference in the collaboration patterns reported by pharmacies of different license class, except for the pharmacies that were never licensed, which less frequently report close collaboration with any other health worker.

Table 43: Business affiliation with nearby health providers, by licensing class

Collaboration	Class I (n=163)		Class II (n=235)		Class III (n=101)		Un-verifiable (n=338)		Un-licensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Near MD or hospital	132	81	189	80	76	75	254	75	15	36
No close collaboration	50	31	86	37	33	33	124	37	27	64
Close collaboration with private	109	67	139	59	63	62	205	61	7	17
MD	104	64	132	56	56	55	190	56	5	12
Clinic, private	48	29	42	18	19	19	57	17	6	14
Hospital, private	12	7	20	9	4	4	23	7	2	5
Close collaboration with public	32	20	41	17	21	21	49	14	11	26
Clinic, public	18	11	21	9	17	17	32	9	7	17
Hospital, public	11	7	25	11	10	10	21	6	8	19
Other, public	10	6	7	3	3	3	17	5	1	2

Table 44 illustrates the weighted average percentage of the last ten patients that presented with a prescription at the pharmacy. The percentage was highest for Class I pharmacies (62 percent) and lowest for the unlicensed (36 percent). It was also highest in urban areas other than Kabul City (59 percent) and lowest in the rural areas (46 percent). This finding could indicate that almost half of the patients come to the pharmacy for advice and treatment without a physician’s prescription. It confirms the importance of the finding that knowledge about patient care and treatment should be improved.

Table 44: Weighted average percentage of last ten patients that presented with a prescription

Type of outlet	%
By licensing class	
Class I	62
Class II	55
Class III	51
Unverifiable	51
Unlicensed	36
By urban/rural split	
Kabul City	54
Other urban	59
Rural	46
Overall average:	54

4.6. Pharmacy Record Keeping

Interviewers also asked to see some common pharmacy registries and documentation. Article 15 of the RPR in Afghanistan requires that pharmacies keep a separate register of narcotics and controlled substances. Only 11 percent (n=96) of respondents report that their pharmacy complies with that regulation but only 8 percent (n=68) could show the interviewer the registers.

Table 45 shows that the most commonly reported records are purchasing records (78 percent). Less than half report keeping dispensing records, and few report keeping stock keeping records, or special records for controlled substances. Hardly any pharmacy reported keeping computerized records.

Table 45: Record keeping reported, by licensing class

<u>Type of records kept</u>	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Stock keeping	38	23	27	11	14	14	20	6	9	21	108	12
Purchase	136	83	194	83	78	77	251	74	28	67	687	78
Dispensing	79	48	107	46	39	39	129	38	18	43	372	42
Controlled Substances	29	18	33	14	12	12	22	7	=	=	96	11
Computerized	10	6	4	2	=	0	9	3	=	=	23	3

Table 46 shows a 20 to 30 percent difference between the records that were reported as kept and those that could be confirmed by the surveyor.

Table 46: Record keeping verified, by licensing class

<u>Type of records kept</u>	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Stock keeping	30	18	16	7	7	7	13	4	8	19	74	8
Purchase	117	72	171	73	66	65	218	64	19	45	591	67
Dispensing	66	40	86	37	25	25	100	30	16	38	293	33
Controlled Substances	20	12	26	11	10	10	12	4	—	—	68	8
Computerized	7	4	3	1	=	0	9	3	—	—	19	2

4.7. Pharmacy Reference Works

The MoPH has published several reference documents to guide the selection and use of medicines in Afghanistan. The LDL indicates by generic name, dosage form, and strength of all medicines that can be imported, manufactured, or sold in Afghanistan. The EDL provides a subset of medicines on the LDL allowed to be used in the public health sector of Afghanistan. The Afghan National Formulary (ANF) provides information about the indications, precautions, and contraindications for use of the medicines on the EDL and LDL.

Interviewers investigated the availability of the LDL, EDL, and ANF in the visited PPROs, both as reported by the respondent and through visual verification.

In the total sample, about one-fourth of all PPROs reported availability of LDL and EDL, and 14 percent reported availability of ANF. But verification could confirm availability in only half of the reported cases.

Table 47 gives the reported and verified availability by urban/rural split. Availability of EDL (both reported and verified) is highest in urban areas outside Kabul.

Table 47: Availability of pharmacy reference materials, by urban/rural split

Reference document	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Reported								
LDL	86	25	100	34	56	23	242	28
EDL	70	21	106	36	44	18	220	25
ANF	71	21	41	14	15	6	127	14
Verified								
LDL	42	12	38	13	28	11	108	12
EDL	34	10	55	19	22	9	111	13
ANF	39	12	11	4	6	2	56	6

Table 48 gives the reported and verified availability by licensing class and shows that availability is higher in Class I and Class II pharmacies.

Table 48: Availability of pharmacy reference materials, by licensing class

Reference document	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Reported										
LDL	58	36	68	29	37	37	75	22	4	10
EDL	54	33	61	26	35	35	67	20	3	7
ANF	19	12	36	15	18	18	51	15	3	7
Verified										
LDL	32	20	32	14	22	22	18	5	4	10
EDL	35	21	33	14	21	21	19	6	3	7
ANF	6	4	24	10	13	13	11	3	2	5

5. FINDINGS: AVAILABILITY, QUALITY, AND AFFORDABILITY OF MEDICINES

The interviewers also asked questions about items sold at the pharmacies and the origin of the medicines sold, verified the availability and cost of a selected list of essential medicines, and inspected quality of five randomly selected products in each pharmacy.

5.1. Products Offered for Sale

Table 49 illustrates that several non-pharmaceutical items are sold at pharmacies. Personal hygiene products, diet products, and cosmetics are commonly sold in most pharmacies. The Medicines Law and RPR contain prohibitions on the sale of narcotics, alcohol, and sub-

standard medicines; Article 18 of the RPR indicates that a pharmacy should not store or sell non-medical equipment. Half of the Kabul City pharmacies report selling general food items in addition to medicines. Noteworthy is that not all pharmacies report selling contraceptives, and few report offering vaccines for sale. Vaccines are most commonly reported to be sold at outlets in urban settings outside Kabul City (20 percent). It is encouraging to see that very few pharmacies are selling cigarettes and bottled beverages (including soft drinks), since the use of has been linked to health risks,²¹ and Afghanistan has ratified the *WHO Framework Convention on Tobacco Control* since 2010.²²

Table 49: Items reported as for sale at retail outlets, by urban/rural split

Items reported as for sale	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Over-the-counter medicine	328	97	277	94	229	93	834	95
Medical supplies	323	95	271	92	226	92	820	93
Contraceptives	296	87	252	85	192	78	740	84
Personal hygiene products	295	87	193	65	164	67	652	74
Diet products	249	73	188	64	149	61	586	67
Cosmetics	219	65	144	49	106	43	469	53
Eye medicine	106	31	147	50	45	18	298	34
General food items	167	49	77	26	49	20	293	33
Medical equipment	139	41	98	33	37	15	274	31
Dental products	101	30	121	41	37	15	259	29
Diagnostics	92	27	99	34	42	17	233	27
Traditional or herbal	73	22	63	21	43	18	179	20
Vaccines	8	2	58	20	10	4	76	9
Bottled beverages	12	4	14	5	5	2	31	4
Cigarettes	1	<1	1	<1	2	1	4	<1

Table 50 shows that Class III pharmacies report selling more traditional or herbal medicine (31 percent) than other pharmacies.

Table 50: Items reported as for sale at retail outlets, by licensing class

Items reported as for sale	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Over-the-counter medicine	157	96	228	97	98	97	312	92	39	93
Medical supplies	152	93	219	93	94	93	318	94	37	88
Contraceptives	147	90	210	89	79	78	277	82	27	64
Personal hygiene products	117	72	187	80	73	72	266	79	9	21

²¹ De Vogli R., Kouvonen A., Gimenez D. The influence of market deregulation on fast food consumption and body mass index: a cross-national time series analysis. *Bull World Health Organ* 2014;92:99–107A | doi: <http://dx.doi.org/10.2471/BLT.13.120287>

²² WHO. *Report on the Global Tobacco Epidemic, 2013*. Country profile. Afghanistan. Consulted March 24, 2015 on http://www.who.int/tobacco/surveillance/policy/country_profile/afg.pdf

Items reported as for sale	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Diet products	114	70	152	65	67	66	233	69	20	48
Cosmetics	75	46	124	53	50	50	207	61	13	31
Eye medicine	84	52	83	35	30	30	97	29	4	10
General food items	59	36	86	37	38	38	107	32	3	7
Medical equipment	45	28	90	38	30	30	103	30	6	14
Dental products	69	42	60	26	33	33	94	28	3	7
Diagnostics	49	30	67	29	35	35	71	21	11	26
Traditional or herbal	19	12	46	20	31	31	81	24	2	5
Vaccines	22	13	8	3	4	4	42	12	0	0
Bottled beverages	6	4	4	2	5	5	16	5	0	0
Cigarettes	1	1	2	1	0	0	1	0	0	0

5.2. Procurement and General Quality of Medications

5.2.1. Suppliers Used

When asked to name their three largest suppliers (i.e., the companies that supply the largest quantities of stock to their locations), two respondents were unable to give the name of at least one supplier; all other respondents gave the name of at least one supplier. In total, 2,479 names were given, resulting in 478 unique names, of which 257 (54 percent) were given by only one respondent. The most frequently named pharmaceutical supplier is Afghan Pharma (named by 46 percent of respondents). Other frequently named suppliers include Getz (named by 28 percent of respondents), Omid Pharma (15 percent), Julphar (14 percent), and Omar Bangesh (11 percent). Caution must be taken, since the survey did not rule out the possibility that different suppliers in different locations could be referred to with the same name. Subsequent analysis assumes that one name refers to one supplier, and, if in different locations, to a subsidiary of the same supplier.

Table 51 lists the 20 most frequently mentioned suppliers in the total sample, with the total number of different locations that were reported. The average number of locations per supplier in the total sample is 1.4 (median 1), but is 5.3 (median 6) for the 20 most frequently mentioned suppliers.

Table 51: Most frequently reported suppliers, with number of locations reported

Supplier	Reporting frequency		# of locations
	#	%	
Afghan Pharma	403	46	10
Getz	247	28	7
Omid Pharma	131	15	8
Julphar	121	14	6
Omar Bangesh	92	10	5
GSK	66	8	6
Merck	56	6	7
Global Pharma	39	4	4

Supplier	Reporting frequency		# of locations
	#	%	
Hilton	35	4	7
Abbott	34	4	7
Parwan Hotel	30	3	2
Khalid Ershad	29	3	3
Ibn Sina	26	3	6
Nabi Qasim Company	22	3	4
Olin Pharma	21	2	2
Green Gate Company	20	2	6
Hamid Pharma	19	2	6
Haroon Naseer	19	2	4
Ahmad Company	18	2	4
Ariana Pharma	18	2	3

Table 52 lists the 20 most frequently mentioned suppliers by urban/rural split and it shows that use of suppliers varies with geographic location. In fact, most pharmacies tend to use suppliers from the capital of the province in which they are located. While a few suppliers are used by pharmacies in almost all visited provinces, not one supplier was mentioned by a pharmacy in all ten provinces. Comparing with the previous table suggests that suppliers listed as most frequently used in all three areas are those with the highest number of different locations.

Table 52: Twenty most frequently mentioned suppliers, by urban/rural split

Kabul City (n=339)		Other urban (n=295)		Rural (n=245)	
Supplier	%	Supplier	%	Supplier	%
Afghan Pharma	43.4	Afghan Pharma	50.2	Afghan Pharma	44.1
Getz	42.2	Getz	26.1	Omid Pharma	21.2
Julphar	23.0	Omid Pharma	21.7	Getz	11.0
Omar Bangesh	18.0	Merck	10.8	Omar Bangesh	6.5
Global Pharma	8.6	Julphar	10.5	Green Gate Company	5.7
GSK	7.4	GSK	9.5	GSK	5.3
Parwan Hotel	6.2	Hilton	6.4	Julphar	4.9
Khalid Ershad	5.6	Olin Pharma	6.4	Abbott	4.1
Merck	5.0	Omar Bangesh	5.1	Parwan Hotel	3.3
Omid Pharma	4.4	Ahmad Company	5.1	Mesaq Pharmacy	3.3
Ibn Sina	4.4	Abbott	3.7	Khalid Ershad	2.9
Hamid Pharma	4.4	Megtar Company	3.4	Merck	2.9
Abbott	3.8	Akbar Zada company	3.4	Haroon Naseer	2.9
Nabi Qasim Company	3.8	Haroon Naseer	3.1	Aria Pharma	2.4
Ariana Pharma	3.8	Asia Pharma	3.1	Searle	2.4
Sehat Asri Company	3.8	Ayoubi Company	2.4	Ehsan Pharma	2.4
Hilton	3.5	Global Pharma	2.0	Ibn Sina	2.0
Qader Wardak Pharmacy	2.7	Ibn Sina	2.0	Nabi Qasim Company	2.0

Kabul City (n=339)		Other urban (n=295)		Rural (n=245)	
Supplier	%	Supplier	%	Supplier	%
Gharzai Naseri Pharmacy	2.4	Exir	2.0	Shegopha Pharmacy	2.0
Pamir Kunduz	2.4	Sandooz	2.0	Mostafa Belal Pharmacy	2.0

The vast majority of suppliers mentioned by respondents (94 percent) are based in Afghanistan; less than one percent are based in Pakistan, and for 6 percent (n=159) of responses respondents said they did not know where the supplier is based. Nearly half of the suppliers mentioned by respondents (46 percent) are in Kabul, followed by Jalalabad (12 percent), Mazar-e-Sharif (11 percent), and Herat (11 percent).

The frequency of supply for the 2,481 suppliers for whom a regular supply period was reported, was between once a week and once a month for 66 percent of the suppliers (n=1,651), and whenever it was needed for 37 percent of the suppliers (n=322). As illustrated in table 53 and figure 1, the proportion of suppliers that regularly supplies between once a week and once a month is higher in Kabul City (72 percent) than in other urban areas (62 percent) and in rural areas (56 percent).

Table 53: Frequency of supply, by urban/rural split

Frequency	Kabul City (n=965)		Other urban (n=855)		Rural (n=661)		Total (N=2,481)	
	#	%	#	%	#	%	#	%
At least once a week	474	49	248	29	125	19	847	34
Every 1–2 weeks	220	23	190	22	162	25	572	23
Every 2–4 weeks	58	6	92	11	82	12	232	9
Less often	19	2	19	2	43	7	81	3
When needed	189	20	300	35	242	37	731	29
DK (vol.)	5	1	6	1	7	1	18	1

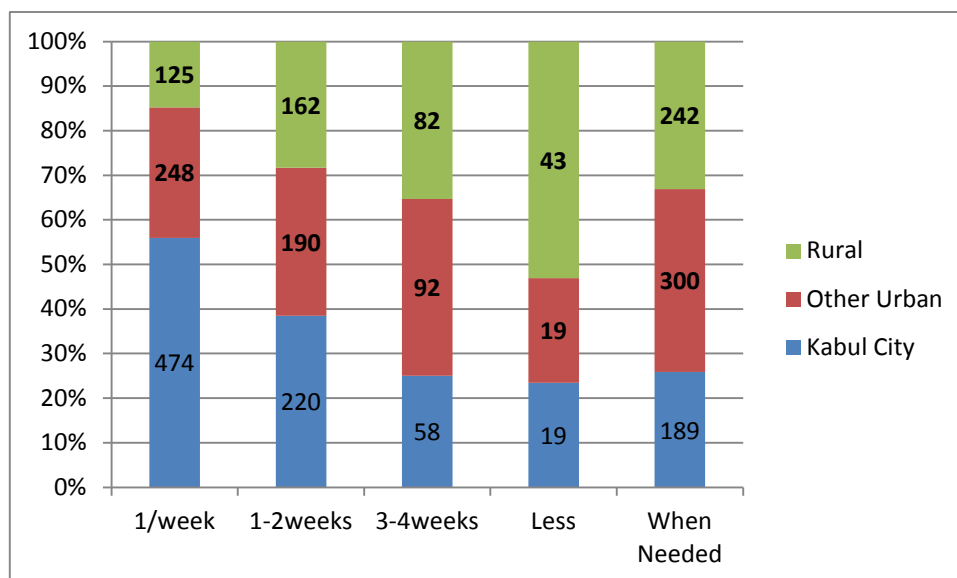


Figure 1: Frequency of supply, by urban/rural split

5.2.2. Problems with Received Products

When asked whether they had received any products with problems in the last year, 70 percent of respondents (n=618) reported that they have had “no problems” with any of the suppliers they reported. It should be noted that even respondents not giving any name, still answered the question on problems with suppliers. Thirty percent of respondents mentioned at least one problem with one of the reported suppliers. Quality-related problems (visibly damaged products, products of suspected quality, or expired or close to expired medicine) were reported by 19 percent (n=163) of the pharmacies. Unexpected price changes were reported by 14 percent (n=127), and delivery of unrequested items or items not matching the requested specifications was reported by 12 percent (n=104) of the pharmacies.

Table 54 shows that more respondents in Kabul City reported problems (37 percent) than respondents in other urban areas (23 percent) or in rural areas (27 percent).

Table 54: Pharmacies reporting problems with suppliers, by urban/rural split

Type of problem	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
Damaged products	38	11	25	8	15	6	78	9
Expired (or close to)	25	7	16	5	14	6	55	6
Unrequested item	29	9	16	5	21	9	66	8
Quality suspect	18	5	7	2	5	2	30	3
Price change	55	16	40	14	32	13	127	14
Wrong specifications	11	3	11	4	16	7	38	4
At least one problem	127	37	67	23	67	27	261	30
No problem	212	63	228	77	178	73	618	70

Table 55 shows that fewer Class I pharmacies report problems (19 percent), than Class II and Class III pharmacies (each 28 percent). Thirty-four percent of the pharmacies that failed to produce a license on the day of the visit reported at least one problem, and so did 50 percent of the pharmacies that were never licensed. If the failure to produce a license at the day of the survey or not being licensed indicates a lower attention for accurate record keeping with the pharmacy staff, then the reported problems could reflect failure to reconcile procurement records in the pharmacy, rather than lower performance of the supplier. The present data does not allow elucidating this.

Table 55: Pharmacies reporting problems with suppliers, by licensing class

Type of problem	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Damaged products	6	4	17	7	7	7	44	13	4	10
Expired (or close to)	7	4	17	7	9	9	17	5	5	12
Unrequested item	9	6	11	5	3	3	36	11	7	17
Quality suspect	4	2	8	3	6	6	11	3	1	2
Price change	11	7	33	14	12	12	60	18	11	26
Wrong specifications	4	2	4	2	8	8	12	4	10	24
At least one problem	31	19	66	28	28	28	115	34	21	50
No problem	132	81	169	72	73	72	223	66	21	50

Looking at it from the supplier perspective, Table 56 confirms that 22 percent of the mentioned suppliers were reported to have problems, and suppliers providing products to pharmacies in Kabul City have the highest percentage of reported problems, 27 percent.

Table 56: Proportion of suppliers with a problem, by urban/rural split

Type of problem	Kabul City (n=965)		Other urban (n=855)		Rural (n=659)		Total (N=2,479)	
	#	%	#	%	#	%	#	%
Damaged products	154	16	28	3	18	3	200	8
Expired (or close to)	110	11	19	2	17	3	146	6
Unrequested item	129	13	20	2	33	5	182	7
Quality suspect	60	6	9	1	7	1	76	3
Price change	293	30	54	6	57	9	404	16
Wrong specifications	61	6	11	1	18	3	90	4
At least one problem	258	27	141	16	150	23	549	22
No problem	707	73	714	84	509	77	1,930	78

Table 57 shows that a smaller proportion of the suppliers mentioned by respondents of Class I pharmacies had problems, than suppliers mentioned by other classes of pharmacies.

Table 57: Proportion of suppliers with a problem, by licensing class

Type of problem	Class I (n=448)		Class II (n=671)		Class III (n=281)		Unverifiable (n=966)		Unlicensed (n=113)	
	#	%	#	%	#	%	#	%	#	%
Damaged products	7	2	23	3	8	3	157	16	5	4
Expired	9	2	21	3	15	5	96	10	5	4
Unrequested	11	2	17	3	5	2	140	14	9	8
Quality	5	1	11	2	8	3	51	5	1	1
Price change	20	4	58	9	20	7	295	31	11	10
Wrong specs	6	1	5	1	12	4	57	6	10	9
Problem	58	13	135	20	68	24	247	26	41	36
No problems	390	87	536	80	213	76	719	74	72	64

When asked what they did when receiving poor quality medicine, 44 percent of pharmacies (n=372) claimed they never received poor quality medicines.²³ As shown in Table 58, pharmacies in Kabul City reported less frequently to never receive bad medicines (37 percent), than the pharmacies in other urban areas or rural areas, but they more frequently reported to either discard poor quality medicine or request exchange or reimbursement than pharmacies outside Kabul. More than 10 percent of the pharmacies outside Kabul City reported to at least occasionally sell poor quality medicine, either at a discount or because patients needed it badly.

²³ There seem to have been some confusion when noting the answers to the question, either with the respondent or with the surveyor. In several records the answer “never” was substituted for “have not received poor medicine.” These were recoded. After recoding, 40 records were excluded since they inconsistently claimed to “have not received poor quality medicine.”

Table 58: Management of poor quality medicine, by urban/rural split

		Kabul City (n=336)		Other urban (n=275)		Rural (n=228)		Grand total (N=839)	
		#	%	#	%	#	%	#	%
Received no poor quality medicine		123	37	138	50	111	49	372	44
Dispose	Always	130	39	50	18	29	13	209	25
	Sometimes	12	4	32	12	17	7	61	7
	Rarely	4	1	10	4	17	7	31	4
	Never	67	20	45	16	54	24	166	20
Exchange or reimburse	Always	111	33	63	23	70	31	244	29
	Sometimes	19	6	25	9	23	10	67	8
	Rarely	18	5	15	5	9	4	42	5
	Never	65	19	34	12	15	7	114	14
Sell at discount	Always	1	0	7	3	2	1	10	1
	Sometimes	2	1	9	3	4	2	15	2
	Rarely	9	3	15	5	8	4	32	4
	Never	201	60	106	39	103	45	410	49
Sell because needed	Always	1	0	2	1	4	2	7	1
	Sometimes	2	1	15	5	3	1	20	2
	Rarely	8	2	13	5	4	2	25	3
	Never	202	60	107	39	106	46	415	49
Excluded from analysis		3	—	20	—	17	—	40	—

Respondents from pharmacies with a verifiable license reported less frequently receiving poor quality medicine than those for which the license could not be verified, or those who were never licensed (table 59).

Table 59: Management of poor quality medicine, by licensing class

		Class I (n=158)		Class II (n=227)		Class III (n=93)		Unverifiable (n=324)		Unlicensed (n=37)	
		#	%	#	%	#	%	#	%	#	%
Received no poor quality medicine		80	51	114	50	46	49	124	38	8	22
Dispose	Always	33	21	59	26	16	17	90	28	11	30
	Sometimes	5	3	16	7	11	12	22	7	7	19
	Rarely	3	2	5	2	4	4	15	5	4	11
	Never	37	23	33	15	16	17	73	23	7	19
Exchange or Reimburse	Always	45	28	52	23	27	29	105	32	15	41
	Sometimes	5	3	18	8	10	11	24	7	10	27
	Rarely	7	4	12	5	5	5	15	5	3	8
	Never	21	13	31	14	5	5	56	17	1	3
Sell at discount	Always	1	1	2	1	1	1	6	2		0
	Sometimes	2	1	2	1	2	2	7	2	2	5
	Rarely	4	3	5	2	6	6	9	3	8	22
	Never	71	45	104	46	38	41	178	55	19	51
Sell because needed	Always		0	3	1	1	1	3	1		0
	Sometimes	3	2	2	1	3	3	10	3	2	5
	Rarely	5	3	4	2	3	3	9	3	4	11
	Never	70	44	104	46	40	43	178	55	23	62
Excluded from analysis		5	—	8	—	8	—	14	—	5	—

Figure 2 further illustrates that pharmacies in Kabul City report more frequently having a problem with a supplier and receiving poor quality medicine.

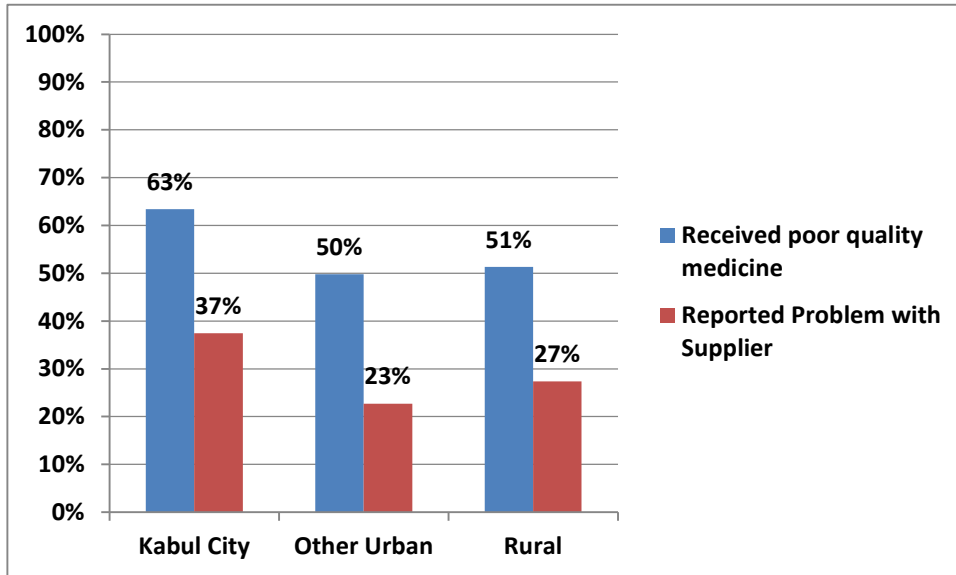


Figure 3: Comparison of poor medicine quality and reported problems with a supplier, by urban/rural split

In Figure 3 there is linear increase—from pharmacies with verified license status, to pharmacies with unverifiable license status, to pharmacies that were never licensed—in the proportion of pharmacies reporting receiving poor quality medicine and reporting problems with a supplier.

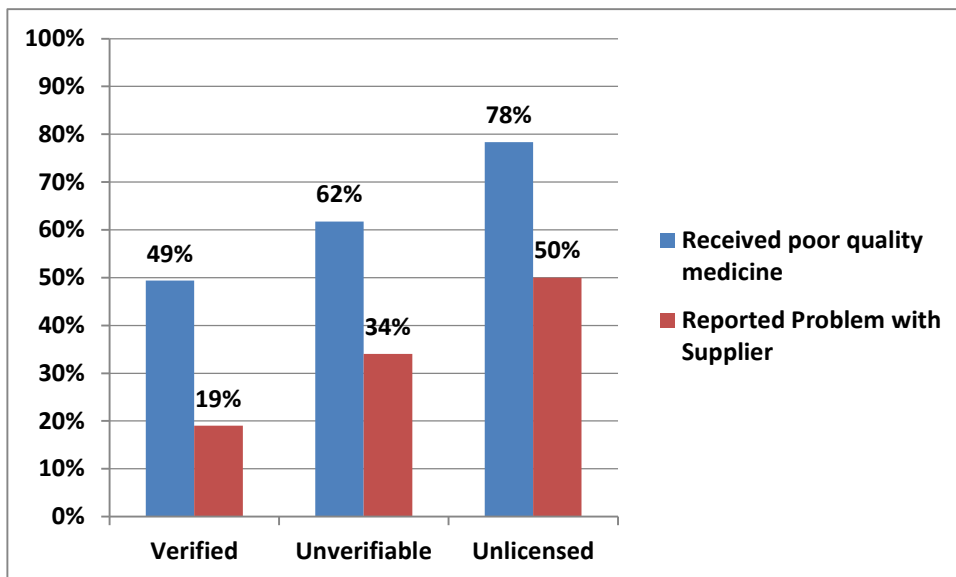


Figure 2: Comparison of poor medicine quality and reported problem with suppliers, by licensing status

The difference between the proportion reporting a problem with a supplier and the proportion reporting receiving a poor quality medicine may be explained by the fact that the problem with a supplier was only investigated for the three most frequently used suppliers, while poor quality medicine may have been received from suppliers that PPROs used less frequently.

5.3. Availability, Quality, and Affordability of Essential Medicines

One part of the survey assessed the capacity of the PPROs to provide essential medicine required by the Basic Package of Health Services (BPHS). Logistically it was impossible with the available resources to assess availability of all BPHS medicines. As is done routinely for public health clinics in Afghanistan, the availability of a list of 30 essential medicines, selected for importance, was assessed in all pharmacies. The respondent in each pharmacy was asked to show the product he would propose when asked to provide the listed medicine.

All locations surveyed had at least one of these tracer medicines in stock, but 99 percent of pharmacies did not have all 30 tracer medicines in stock.

5.3.1. Availability of 30 Tracer Medicines in PPROs

Table 60 shows that the weighted average percentage of availability of 30 tracer medicines on the day of the interview for the whole sample, as verified by the surveyors, was 63 percent. There was little variation between the different license classes, but a low average of 56 percent availability for those pharmacies that were never licensed. Hardly any of the inspected medicine was expired, and nearly all was in the original packaging. According to data collectors, burning of non-standard and expired medicines by inspection authorities had taken place in several locations shortly prior to the survey, which may skew the observed figures.

Table 60: Availability of a set of 30 tracer medicines at private retail outlets, by licensing class

	Class I (n=163)	Class II (n=235)	Class III (n=101)	Un- verifiable (n=338)	Un- licensed (n=42)	Total (N=879)
Weighted average % availability	66	63	67	61	56	63
Weighted average % unexpired availability	66	62	66	60	56	62
Weighted average % available in original packaging	66	62	67	60	56	62
Median # available	19.9	18.8	20.1	18.2	16.7	18.8
Maximum # available	29	30	30	30	24	30
Minimum # available	3	5	9	5	6	3

Table 61 illustrates that tracer medicine availability does not vary much by urban/rural split.

Table 61: Availability of a set of 30 tracer medicines at private retail outlets, by urban/rural split

	Kabul City (n=339)	Other urban (n=235)	Rural (n=245)	Total (N=879)
Weighted average % availability	61.6	66.5	59.5	62.7
Weighted average % unexpired availability	61.3	66.0	59.4	62.3
Weighted average % available in original packaging	61.1	66.2	59.4	62.4
Median # available	18.5	20.0	17.8	18.8
Maximum # available	30	30	30	30
Minimum # available	5	3	6	3

The gathered data indicate that a patient looking for treatment of a condition addressed by the BPHS has one chance in three of not finding the needed medicine in a PPRO. The PPRO might be able to provide the medicine with some delay, but non-availability when presenting at the PPRO will inevitably lower medicine accessibility.

The spread of availability is between 30 (all tracer medicines present) and three. The average number of available tracer medicines was 18.8 and the median was 19. Table 62 and Figure 4 show that the majority of pharmacies where the license class could be verified have more than the average number (19 or more) of tracer medicines available, while for the pharmacies that claimed never to be licensed or could not produce a license, the majority had less than the average (18 or less) medicines available.

Table 62: Proportion of pharmacies with more than 18 tracer medicines available, by license class

Availability	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
>18 medicines	105	64	126	54	63	62	147	43	13	31	454	52
≤18 medicines	58	36	109	46	38	38	191	57	29	69	425	48

Figure 4: Proportion of pharmacies with more than 18 tracer medicines available, by licensing class

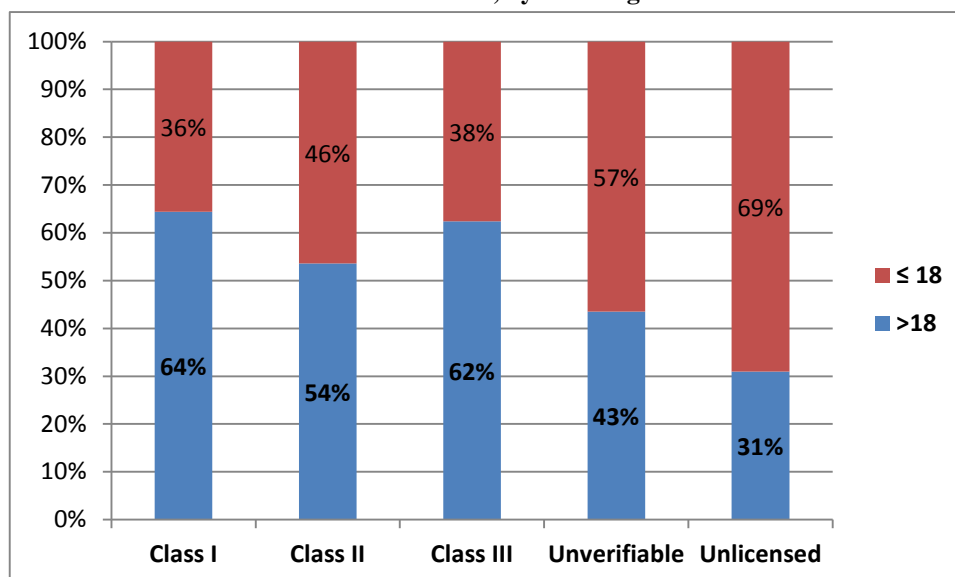


Table 63 and Figure 5 show that the pharmacies in urban areas outside Kabul City have better availability than Kabul City pharmacies and rural pharmacies.

Table 63: Proportion of pharmacies with more than 18 tracer medicines available, by urban/rural split

Availability	Kabul City (n=339)		Other urban (n=235)		Rural (n=245)		Total (N=879)	
	#	%	#	%	#	%	#	%
>18 medicines	161	47	184	62	109	44	454	52
≤18 medicines	178	53	111	38	136	56	425	48

Figure 5: Proportion of pharmacies with more than 18 tracer medicines available, by urban/rural split

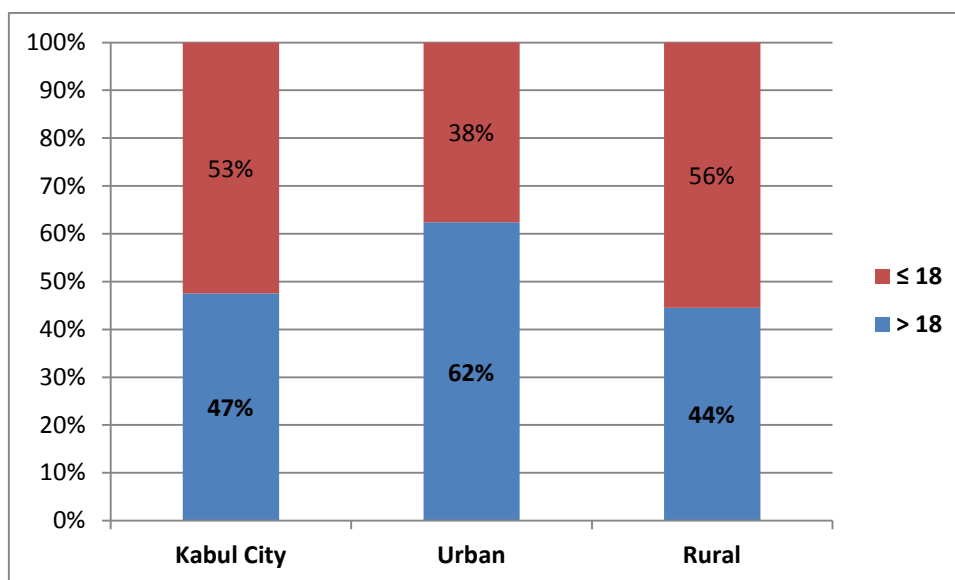


Table 64 lists the tracer medicines in descending order of availability. Several key integrated management of childhood illnesses (IMCI) medicines, such as oral rehydration salts (ORS) and first-line antibiotics used in the standard IMCI protocols, are among the one-third most-available medicines. However, injectable and oral contraceptives, and zinc sulfate tablets are among the one-third least-available tracer medicines.

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Table 64: Availability of tracer medicines in private retail outlets, by licensing class

Tracer medicine	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unregistered (n=42)		Total (N=879)	
	#	%	#	%	#	%	#	%	#	%	#	%
Paracetamol 500mg	157	96	224	95	95	94	310	92	35	83	821	93
Amoxicillin cap 500	156	96	219	93	94	93	318	94	33	79	820	93
Amoxicillin 250mg/5ml susp	154	94	219	93	89	88	313	93	35	83	810	92
Tetracycline eye ointment	147	90	220	94	93	92	303	90	36	86	799	91
ORS packets	150	92	197	84	94	93	313	93	28	67	782	89
Ringer lactate	140	86	207	88	97	96	290	86	38	90	772	88
Paracetamol 120 mg/5ml	146	90	204	87	88	87	285	84	33	79	756	86
Cotrimoxazole tab 480	136	83	194	83	89	88	273	81	25	60	717	82
Condom	133	82	194	83	80	79	291	86	19	45	717	82
Gentamycin 80mg inj	139	85	188	80	86	85	259	77	31	74	703	80
Ampicillin 500mg inj	138	85	181	77	82	81	241	71	23	55	665	76
Ibuprofen 200mg	121	74	181	77	78	77	243	72	27	64	650	74
Metronidazole 200 (or 250) mg tab	123	75	179	76	79	78	230	68	26	62	637	72
Mebendazole 100mg	119	73	168	71	77	76	233	69	20	48	617	70
Gentian violet crystals	132	81	151	64	70	69	236	70	27	64	616	70
Ciprofloxacin tab 250	120	74	156	66	64	63	211	62	26	62	577	66
Iron & folic acid (any strength)	109	67	154	66	73	72	216	64	24	57	576	66
Aminophylline 100mg tab	89	55	121	51	64	63	175	52	19	45	468	53
Oxytocin inj	96	59	110	47	56	55	165	49	25	60	452	51
Diazepam 5mg/ml inj	91	56	126	54	57	56	139	41	14	33	427	49
Chloroquine 150mg	97	60	112	48	40	40	146	43	19	45	414	47
Chloramphenicol 250mg	83	51	107	46	44	44	142	42	23	55	399	45
Medroxy progesterone 150mg inj	79	48	98	42	55	54	126	37	29	69	387	44
Magnesium trisilicate + aluminium hydroxide	56	34	96	41	49	49	132	39	14	33	347	39
Chloroquine syrup	77	47	79	34	37	37	98	29	21	50	312	35
Salbutamol inj	57	35	71	30	45	45	94	28	26	62	293	33
Zinc sulfate dispersible tablets	66	40	74	31	40	40	101	30	4	10	285	32
Norgestrel (progesterone only pill, POP)	44	27	59	25	33	33	76	22	1	2	213	24
Ethinyl estradiol + norgestrel (combination)	41	25	50	21	30	30	68	20	20	48	209	24
Chlorhexidine w/wo cetrimide, sol *	37	23	58	25	28	28	74	22	2	5	199	23

5.3.2. Availability of Contraceptives in PPROs

Data in table 65 show that survey respondents underreported whether their pharmacy sold contraceptives (as measured by at least one type being present). Condoms were available in 80 percent of surveyed pharmacies, injectable contraceptives in almost 50 percent, and oral contraceptives in less than 25 percent of the pharmacies.

However, overall only 11 percent of surveyed pharmacies had all four investigated methods (barrier, injectable hormonal, oral combination, oral progesterone-only) in stock on the day of the visit. The largest proportion with all four types present on the day of the visit (16 percent) was found among Class III pharmacies and pharmacies in urban areas outside Kabul.

Table 65: Availability of contraceptive choice in PPROs

Type of outlet	Claimed to sell contraceptives		At least one type present		All four types present	
	#	%	#	%	#	%
By licensing class						
Class I (n=163)	147	90	151	92.6	20	12.3
Class II (n=235)	210	89	205	87.2	24	10.2
Class III (n=101)	79	78	91	90.1	16	15.8
Unverifiable (n=338)	277	82	307	90.8	39	11.5
Unlicensed (n=42)	27	64	34	81.0	—	—
By urban/rural split						
Kabul City (n=339)	296	87	316	93.2	38	11.2
Other urban (n=295)	252	85	268	90.8	46	15.6
Rural (n=245)	192	79	204	83.3	15	6.1
Total (N=879):	740	84	788	89.6	99	11.3

5.3.3. Adequate Storage of Temperature-Sensitive Medicines

When temperature-sensitive medicines are not kept within the acceptable temperature range, their quality deteriorates; for this reason, interviewers checked for appropriate storage of three such items (oxytocin, ergometrine, and insulin) during the survey. Table 66 shows that 56 percent of the pharmacies sell one of these medicines, but of these pharmacies, only 9 percent keep the item refrigerated. The highest percentage (14 percent) of pharmacies stocking and refrigerating at least one of the temperature-sensitive medicines occurred in urban areas outside Kabul City.

Table 66: Pharmacies selling and storing temperature-sensitive items (oxytocin, ergometrine, insulin)

	Kabul City (n=339)		Other urban (n=295)		Rural (n=245)		Total (n=879)	
	#	%	#	%	#	%	#	%
Sell at least one of the three	145	43	207	70	136	56	488	56
Sells and keeps refrigerated	30	9	42	14	6	2	78	9
Sells and does not keep refrigerated	115	34	165	56	130	53	410	47

Table 67 shows that none of the unlicensed pharmacies and only a small proportion of pharmacies that claim to be licensed apply cold storage for the temperature-sensitive items.

Table 67: Pharmacies selling and storing temperature-sensitive items (oxytocin, ergometrine, insulin)

	Class I (n=163)		Class II (n=235)		Class III (n=101)		Unverifiable (n=338)		Unlicensed (n=42)	
	#	%	#	%	#	%	#	%	#	%
Sell at least one of the three	97	60	128	54	68	67	176	52	19	45
Keeps refrigerated	17	10	19	8	7	7	35	10	—	—
Do not sell any of the three	80	49	109	46	61	60	141	42	19	45

5.3.4. Affordability of Essential Medicines

One way to assess the affordability of essential medicines is to compare average unit costs in Afghanistan with the average unit cost in the *International Drug Price Indicator Guide* (IDPIG).²⁴ This comparison shows that tracer medicines are, on average, twice as expensive in retail outlets as the average listed price in the IDPIG. Out of 30 tracer medicines, 21 were more expensive and 9 were less expensive than the prices listed in IDPIG.

Another way to assess medicine affordability is to compare the cost of a standard treatment course for a common illness with the daily or monthly minimum wage. In Afghanistan, the monthly minimum wage for government employees is 5,000 Afs. When compared to the average cost of one course of treatment for pneumonia with cotrimoxazole, or of an ORS treatment for diarrhea as per IMCI-standard treatment protocol, essential medicines seem to be offered at affordable prices at private retail outlets, as shown in Table 68.

Table 68: Cost (in Afghani) of standard treatment for pneumonia and diarrhea

Type of outlet	Cost of cotrimoxazole for pneumonia			Cost of ORS for a diarrhea episode		
	Avg	Min	Max	Avg	Min	Max
By licensing class						
Class I	11.98	5	35	24.50	8	100
Class II	11.34	5	40	22.19	8	100
Class II	11.58	5	35	25.01	12	80
Unverifiable	9.32	7	18	17.71	8	40
Unregistered	10.50	5	40	22.19	8	100
By urban/rural split						
Kabul City	10.75	5	40	22.29	11	80
Other urban	11.67	5	35	24.65	12	100
Rural	10.94	5	40	21.21	11	100
Total average	11.10	5	40	22.81	8	100
IDPIG	6.37	—	—	23.22	—	—

²⁴ Management Sciences for Health. 2014. *International Drug Price Indicator Guide, 2013 Edition*. (Updated annually.) Medford, Mass.: MSH.

5.4. Availability, Quality, and Affordability of Medicines on the LDL

5.4.1. Sampled Medicines on the LDL

The MoPH publishes a complete list of the generic names of all medicines legal for manufacture, importation, and use within Afghanistan (Medicines Law Article 2): the LDL. Pharmacies should not sell medicines that are not on the LDL. During the survey visit, interviewers were to randomly select five medicines from the pharmacy shelf and record information about each product. During the preliminary data analysis, these records were coded and compared to the LDL for matches in generic name and strength. The preliminary analysis found that only 32 percent of 4,395 items were on Afghanistan’s current LDL (2007). Recognizing, that this finding did not include corrections of obvious spelling and typing errors, the original dataset was reprocessed and recoded during the secondary analysis in the following ways—

- Obvious transliteration and spelling errors were corrected.
- Brand names mistakenly put in the generic name field were replaced with the generic name corresponding to the brand name.
- Medicines of which the corrected generic name and the dosage form corresponded with the LDL were accepted as corresponding.
- Combination medicine was only accepted as matching if all active substances were listed in the same combination in the LDL.

The results of this secondary analysis show that, in the total sample, 86 percent of the randomly selected medicine corresponded with an item listed in the LDL (table 69). Out of 4,395 products, some 149 (3 percent) were herbal or cosmetic products, normally not included in the LDL. They are listed as “N/A” in the table. There is no significant difference between urban and rural PPROs.

Table 69: Proportion of randomly selected products corresponding with generic name and dosage form in LDL, by urban/rural split

Corresponds with LDL	Kabul City (n=1,695)		Other urban (n=1,475)		Rural (n=1,225)		Total (N=4,395)	
	#	%	#	%	#	%	#	%
Yes	1,428	84	1,275	86	1,090	89	3,793	86
No	219	13	133	9	101	8	453	10
N/A	48	3	67	5	34	3	149	3

Table 70 shows the results are similar for all classes of licensed or non-licensed pharmacies.

Table 70: Proportion of randomly selected products corresponding with generic name and dosage form in LDL, by license class

Corresponds with LDL	Class I (n=815)		Class II (n=1,175)		Class III (n=505)		Unverifiable (n=1,690)		Unlicensed (n=210)	
	#	%	#	%	#	%	#	%	#	%
Yes	702	86	1,013	86	438	87	1,452	86	188	90
No	85	10	110	9	54	11	190	11	14	7
N/A	28	3	52	4	13	3	48	3	8	4

The present dataset and reference materials did not allow a more-detailed analysis of sampled products corresponding with products having obtained an import license. Once backlogged registration and importation data are completely computerized and readily available, this part of the survey could be reanalyzed.

Of the medicines randomly selected from shelves, 56 percent were prescription (n=1,968) and 44 percent (n=1,548) were over-the-counter. Most of the medicines (62 percent, n=2,721) were produced in Pakistan, 11 percent (n=496) were produced in Iran, 10 percent (n=454) were produced in the United Arab Emirates, 5 percent (n=182) in India, and 3 percent (n=119) were produced domestically.

5.4.2. Quality of Sampled Medicines

Quality features investigated in this survey were limited to displaying required product information on the medicine packaging. The medicine name, manufacturer and manufacturing country were listed on all medicines. Additional required information (such as batch or lot number and expiry or manufacturing date) was available on more than 90 percent of the products sampled.

Table 71 shows that 92 percent of all sampled medicines had expiry month and year indicated on the package, with no significant difference between urban and rural areas.

Table 71: Availability of expiry dates, by urban/rural split

Expiry information displayed	Kabul City (n=1,695)		Other urban (n=1,475)		Rural (n=1,225)		Total (N=4,395)	
	#	%	#	%	#	%	#	%
Month and year	1,587	94	1,332	90	1,124	92	4,043	92
Only year	104	6	135	9	95	8	334	8
No date	4	<1	8	1	6	<1	18	<1

Table 72 shows that the proportion of medicines displaying month and year of expiry date sampled from Class II and Class III pharmacies is smaller (87 percent) than for medicines sampled in the other types of pharmacies.

Table 72: Availability of expiry dates, by licensing class

Expiry information displayed	Class I (n=815)		Class II (n=1,175)		Class III (n=505)		Unverifiable (n=1,690)		Unlicensed (n=210)	
	#	%	#	%	#	%	#	%	#	%
Month and year	767	94	1,024	87	439	87	1,608	95	205	98
Only year	46	6	145	12	64	13	74	4	5	2
No date	2	0	6	1	2	0	8	0	—	—

Table 73 shows that only 73 out of 4,395 medicines sampled were expired (2 percent) or lacked an expiration date. Eighteen medicines had only an expiry year listed; their expiry date was set on January 01, thus probably slightly overestimating the total expired.

Table 73: Proportion of sampled medicines expired

Type of outlet	Total		Not expired		Expired	
	#	#	%	#	%	
By licensing class						
Class I	815	803	99	12	1	
Class II	1,175	1,151	98	24	2	
Class III	505	497	98	8	2	
Unverifiable	1,690	1,662	98	28	2	
Unlicensed	210	1,662	100	1	<1	
By urban/rural split						
Kabul City	1,695	1,669	99	26	2	
Other urban	1,475	1,446	99	29	2	
Rural	1,225	1,207	99	18	1	
Total:	4,395	4,322	99	73	2	

Table 74 shows that when the criteria absence of visible damage, availability of batch number, availability of an expiry date indicating month and year are combined, 10 percent of the medicine would qualify as substandard.

Table 74: Proportion of sampled medicine with no visible damage, and batch number and expiry month and year indicated

Type of outlet	Total		All OK		Not all OK	
	#	#	%	#	%	
By licensing class						
Class I	815	754	93	61	7	
Class II	1,175	999	85	176	15	
Class III	505	431	85	74	15	
Unverifiable	1,690	1,558	92	132	8	
Unlicensed	210	201	96	9	4	
By urban/rural split						
Kabul City	1,695	1,545	91	150	9	
Other urban	1,475	1,303	88	172	12	
Rural	1,225	1,095	89	130	11	
Grand total:	4,395	3,943	90	452	10	

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Registration, Licensing, and Inspection

That the large majority of the pharmacies (95 percent) at least reported to have a license indicates a positive attitude of most private pharmacy owners towards a regulatory body. This confirms findings of the Afghan National Resources Assessment²⁵ of 2002 in a convenience sample of 1,400 pharmaceutical outlets, in which pharmacists indicated they “wish to have

²⁵ Ministry of Health, 2002, Afghanistan National Health Resources Assessment.

more government intervention to control the operation of this market, the quality of the medicines, and to a lesser extent, their price.”

Only five pharmacies failed to mention either the Qawanin or the GDPA as the licensing authority where they registered. This is also a positive finding, demonstrating that most pharmacies are aware of the role played by these two agencies in recent years. Sixty-six percent of all pharmacies mentioned more than one licensing authority, and of these, 99 percent mentioned both GDPA and Qawanin. These results indicate a concern with being licensed by the designated authority, and most likely, to have an updated license from the most recent officially designated authority. Of pharmacies reporting themselves as registered, half stated that they first registered more than 10 years ago. Furthermore, about 35 percent of the verified licenses were older than 10 years.

While pharmacy outlets appear willing to be appropriately licensed, compliance with present requirements is rather poor. The physical condition of the infrastructure and cleanliness of premises were good in the majority of the visited pharmacies. However, the majority of pharmacies were located within 200 meters of another pharmacy and were lacking the required working area surface. Furthermore, many did not meet the staffing requirements of their license level.

One can assume that licensing criteria changed over time and that changes were not always clearly communicated over past 30 years, due to social and political upheaval. This, along with limited situations in which licenses need to be updated, and apparently not very systematic inspections with little enforcement beyond confiscating expired medicine, could lead to many pharmacies operating according to outdated criteria. It could also explain why 40 percent of the pharmacies do not live up to the required staffing criteria: even if a pharmacist or pharmacist assistance is introduced at the time of licensing, they may not be replaced when they leave.

To improve registration, licensing, and inspection of private pharmacies, this information suggests that MoPH should revise and update the registration guidelines making sure that—

- Criteria are realistic and adapted to the local Afghan situation. This does not mean that one should allow for low-quality establishments, but making the difference between exclusion criteria and recommended criteria may be necessary.
- Licenses are renewable within a defined time period.
- Criteria are objectively verifiable, to allow for inspection and enforcement.
- New registration guidelines include a clear policy and procedures for stepwise improvement or exclusion of non-compliant existing pharmacies.

6.2. Quality of Services

The majority of pharmacies meet the physical standards that are under the pharmacy owner’s direct control (e.g., integrity and cleanliness of building and premises) or that immediately pertain to the comfort of the working environment.

Operational standards (e.g., storage, temperature control, and record keeping) that more exclusively pertain to the quality of medicines and services are not followed as well. For example, only 23 percent of surveyed pharmacies comply with requirements for keeping

pharmaceuticals in color-coded cabinets. Only a small proportion (13 percent) of surveyed pharmacies had a thermometer indicating ambient temperature and slightly more (15 percent) had a refrigerator, yet at least 56 percent of surveyed pharmacies sell items that are sensitive to high temperatures. Only 53 percent of pharmacies had the night duty list posted in the pharmacy.

While staffing patterns were not in line with recommendations for many pharmacies, more than 80 percent reported the presence of a pharmacist or pharmacist assistant on the day of the visit. Dispensing practices show ample room for improvement: less than one-fourth of respondents reported providing minimal information to ensure that the patient complies with treatment.

Knowledge about patient care and treatment for common conditions leaves room for improvement, in particular because more than half of patients present at the pharmacy without prescription.

Record keeping is limited, except for commercial records (purchases). Reported compliance with legal record-keeping requirements on controlled substances is minimal.

The availability of pharmacy reference materials published by the MoPH was low, in spite of the fact that documents like LDL and EDL are available upon request from the MoPH and can be downloaded from the MoPH website.

To improve service quality, this survey analysis suggests that—

- Well-organized and regular inspections may improve adherence to the operational standards, in particular when criteria for the standards are objectively verifiable.
- Proactive dissemination methods of official reference materials, in particular outside the Kabul City should be explored.
- Certification of the level to which functional criteria are followed by an independent body (like the Afghanistan Nationwide Pharmacists Association, or ANPA) may provide an additional reinforcement of adherence to functional criteria.
- Improving dispensing practices and general patient care and treatment is a priority to be addressed through pre- and in-service training.
- If pharmacies employ color-coded medicine storage, each registered medicine should carry the coding in its registration, and reference lists for the coding should be publicly available.

6.3. Availability, Quality, and Cost of Medicines

One-third of pharmacies reported selling general food items, but very few reported selling potentially harmful products like bottled beverages (including soft drinks) and cigarettes.

The source of supply of medicines tends to be located in the capital of the province where the pharmacy is located. Only five suppliers were mentioned by 10 percent or more of the pharmacies, and all of them have distribution points in several provinces. Seventy percent of pharmacies reported having no problems with the suppliers they mentioned, 30 percent mentioned at least one problem with one supplier. In total, 22 percent of the 478 mentioned suppliers were cited for at least one problem. The most frequently cited problems were

related to perceived quality. All these observations relate to experiences with the three most important suppliers for each outlet. In addition, only 44 percent of the pharmacies reported never to have received poor quality medicine, a figure that relates to all suppliers used by each outlet. This indicates that the PPROs have concerns about the quality of medicines received from local wholesalers.

Storage of temperature-sensitive items in refrigerators is a big problem for PPROs of all classes and in all areas; this interferes with availability of lifesaving medicines.

Concern with quality of medicines on the market has been an ongoing issue in Afghanistan, it is recommended that the MoPH—

- Implement a revised and improved registration system for PPROs and pharmaceutical wholesalers
- Pursue establishment of a grading system for supplier performance reliability, at least for those suppliers that aspire to become eligible to provide medicines to public-sector facilities
- Investigate solutions for improving cold-storage conditions in PPROs

Weighted average availability of a sample of 30 tracer medicines of the EDL in the sampled pharmacies was 60 percent and most of the medicines were unexpired. Similar assessments in public health facilities indicated weighted average availability of 30 tracer drugs at the day of the visit of 92 percent.²⁶ This may indicate that the private retail outlets are not a very reliable source for medicines used in the BHPS, since one out of three tracer medicines are not available. Only 11 percent of the pharmacies had a choice of four contraceptive methods available on the day of the visit, which indicates that PPROs are, at present, not a reliable source for contraceptives.

Overall, pharmaceutical treatment costs for common diseases seem affordable, although more expensive than the prices available on the international market. The total cost of diagnosis and treatment of an illness episode would need to take into account additional costs like physician's honorarium, cost of diagnostic procedures, transportation and other indirect costs.²⁷

Before PPROs are to be considered as an alternative source for medicine presently provided through donor funding, it is recommended that the MoPH—

- Raise awareness with the PPROs about the importance of carrying medicines recommended for use in the BHPS
- Assess the availability of those medicines with wholesalers that supply the PPROs
- Perform a more in-depth cost comparison of essential medicines available from the PPROs

²⁶ SPS Afghanistan Associate Award. 2013. SPS Afghanistan Associate Award Report, Fiscal Year 2013. Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

²⁷ Central Statistics Organisation (CSO) and UNICEF (2012). Afghanistan Multiple Indicator Cluster Survey 2010-2011: Final Report. Kabul: Central Statistics Organisation (CSO) and UNICEF.