Characterizing the role of informal payments in the delivery of pathology and clinical laboratory services

Emily H. Glynn

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Committee:
Olusegun Soge
Geoffrey Baird
Taryn Vian

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Emily H. Glynn

University of Washington

Abstract

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Emily H. Glynn

Chair of the Supervisory Committee:
Olusegun Soge
Department of Global Health

OBJECTIVES: Stronger pathology and laboratory medicine (PALM) services are needed in low- and lower-middle income countries (LMICs), though the impact of informal payments (IPs) on PALM remains unclear. IPs are a common, but regressive method of financing health care in LMICs. This study aims to characterize the prevalence and impact of IPs on PALM services. METHODS: PALM staff were surveyed about the frequency, determinants, and impacts of IPs in their workplace from September 2021 - September 2022. RESULTS: In total, 268 responses were received with 46.6% (n = 125) reporting experience with IPs. These 125 participants were more likely to work in the public sector and in LMICs. Approximately 65% reported accepting IPs to perform tests or release results. Obtaining faster results was the most commonly perceived reason for patients offering IPs. Overall, participants reported this activity had more negative than positive impacts on their workplace. CONCLUSIONS: This represents a first step in characterizing IPs within PALM and how this practice may impact access to these services in LMICs. Specifically, the fact that faster turn-around time was the most frequently perceived reason for offering IPs uncovers a potential barrier to improving PALM capacity in these regions.

INTRODUCTION

Pathology and laboratory medicine (PALM) services are an essential component of health systems globally. The ability to diagnose, assess prognosis, monitor response to therapy, screen, and conduct disease surveillance requires robust PALM infrastructure and human resource capacity.[1] However, this capacity is lacking in many low- and low-middle income countries (LMICs) due to a multitude of factors. While many have characterized the challenges to building PALM capacity in LMICs,[1] few have explored the role of corruption as a barrier to these capacity building efforts.[2]

Corruption, commonly defined as “the abuse of entrusted power for private gain,”[3] is an issue that affects health systems across the globe. In fact, the United Nations has targeted the need to substantially reduce all forms of corruption and bribery through Sustainable Development Goal 16.5.[4] Health care is not a typical marketplace, which makes it uniquely susceptible to corruption. Patients cannot predict when they will need to access services and are not always poised to negotiate or “shop around” for a better price.[5] Moreover, interactions with the health system tend to be inflexible and acute, therefore patients may not be a position to reject potentially corrupt acts by service providers. Lastly, there are numerous actors in the health care system (e.g. patients, providers, payers, policy makers, etc.) who bring in different levels of knowledge and expertise, further complicating their interactions.[5] The high-volume and low-cost nature of the testing and its reliance on consumables, reagents, and highly specialized equipment may make PALM particularly vulnerable to corruption.[2]

Informal payments described as “payments to individual and institutional providers, in kind or in cash, that are made outside of official payment channels or are purchases meant to be covered by the health care system,”[6] represent an important form of health sector corruption, particularly in LMICs. Such unofficial payments can be illegal or legal and encompass a broad range of unofficial exchanges including overt bribes, favors, substantial gifts, and payments solicited under the guise of an official transaction or fee, typically for

services that should be provided for free.[7] Even when patients perceive the informal payment to be a gift, these “gifts” can potentially drive unequal treatment and corruption and are therefore problematic.[8] The true prevalence of this practice is difficult to measure given the inconsistencies in defining informal payments and variable cultural norms and perceptions around gift-giving.[6] However, one metric that likely correlates to the underlying rate of informal payments is enumeration of individuals who report paying a bribe.

According to estimates by Transparency International, the proportion of the population who had contact with a public health clinic or hospital within the prior 12 months and were asked to pay a bribe to access medical services varied significantly by region, from 8% in Europe and Central Asia to 25% in the Middle East and North Africa, with rates as high as 45% in Lebanon and 50% in Sierra Leone.[9–13] These estimates underscore the importance of informal payments in financing health care globally and may even represent an underestimate, given the aforementioned difficulties in defining informal payments.

Perpetuation of informal payments within health systems has been attributed to several factors including low public-sector salaries,[14–16] the marketization of health care,[15–17] cultural expectations and practices related to gifting,[15,18] the pervasiveness of bribery in other public sectors,[19] and modeling of the practice by mentors and colleagues.[15–17] Despite the prevalence of informal payments and the role they play in the health systems, they do not necessarily ensure patients will receive a higher level of care,[20] and the burden of these payments falls disproportionately on patients who are low income and at high socioeconomic risk.[21–23] Lastly, health care workers are negatively impacted by the practice as well, with evidence suggesting that it reduces morale,[17] results in pernicious competition among employees,[16,20] and causes health care workers to feel indebted to patients who have made informal payments.[16]

The motivations for and impacts of informal payments have not been well characterized in PALM. Only occasional reports of informal payments involving laboratory testing have been described in the literature and popular press, such as one involving charging patients more than

a published fee for malaria testing [24] or another example of charging for lab tests that should have been provided by the government for free.[25,26] In this study, we aim to better characterize the prevalence and impact of informal payments on PALM services globally.

METHODS

Survey Instrument

This cross-sectional study involved collecting responses using an online survey developed by a subset of the authors (TV and EHG, in collaboration with Timothy Amukele, M.D., Ph.D., ICON Laboratory Services, plc), that was comprised of demographic questions (8 total) and 4 sections focused on the following behaviors: informal payments; absenteeism; theft and diversion; and kickbacks, self-referral, and fraudulent billing. For each of these 4 sections, participants were first asked 2-3 screening questions. If they answered "yes" to any of the screening questions, they were prompted to answer a series of detailed questions regarding that specific behavior. If they answered "no" and/or "unsure" to all screening questions, they moved on to the next section. Consequently, the total number of survey questions a participant may be asked to answer ranged from 19 to 47. In the survey instrument, the term "unofficial payments" was used in place of the more commonly used term "informal payments" to avoid ambiguity. The informal payments section consisted of the following 3 screening questions, which asked participants about their perceptions and knowledge of unofficial payments at their facility: (1) Do you have personal knowledge, either yourself or someone you know, who has been offered or accepted unofficial payments in exchange for lab tests, services (e.g. phlebotomy), equipment, or reagents at your facility?, (2) Do you believe that unofficial payments made by patients in exchange for lab tests or services occurs at your facility?, and (3) Do you believe that unofficial payments made by laboratory staff to vendors or suppliers occurs at your facility? If participants answered 'yes' to any of the screening questions, they were prompted to answer 10 detailed questions regarding the frequency, impact of, and motivations

underlying informal payments. Study data were collected and managed using REDCap electronic data capture tools hosted at the University of Washington.[27,28]

Participants

Responses were collected from September 2021 to September 2022. Participants were recruited through a combination of purposive and snowball sampling. Directed email invitations with a link to the survey were sent to 1) individuals who registered for PALM continuing education programs sponsored by Pathologists Overseas (https://www.pathologistsoverseas.com/), intended for laboratorians and pathologists in resource-limited settings and 2) collaborators on PALM-related research, clinical, or capacity-building projects in the United States, Europe, sub-Saharan Africa, and India. Potential participants were asked to circulate the survey to other interested parties and post to their social media. In addition, an advertisement in a PALM publication and social media posts with a brief explanation and link to the survey were also undertaken.

Participation in the survey was voluntary and all responses were anonymously recorded; no identifiable information was collected to ensure privacy. Moreover, participants could choose to exit the survey at any point or decline to answer any questions. Participants were eligible if they self-attested to be over 18 years of age, employed in a laboratory or pathology facility, and provided consent to participate in the survey. No direct benefits or incentives were provided in exchange for participation. The study was granted exempt status by the Institutional Review Board at the University of Washington.

Data Analysis

Descriptive statistics were utilized to analyze survey responses. Categorical variables were described using percentages and the two continuous variables (age and years of experience in PALM) were described using median and interquartile range as these data were not normally distributed.

Three demographic variables were grouped for analysis purposes. For work setting, “private, for-profit hospital laboratory,” “private, not-for-profit hospital laboratory,” and “mission or religiously-affiliated hospital laboratory” were grouped as “private or religiously-affiliated laboratory.” For occupation, “consultant pathologist,” “registrar/resident,” “medical officer,” and “laboratory medicine specialist” were grouped into “physician/specialist”. In addition, “medical/clinical laboratory scientist,” “histotechnologist/cytotechnologist,” and “laboratory technician” were grouped into “laboratorian” (Table 1). Lastly, participants’ countries of origin were grouped by region (North America, Latin America & Caribbean, East Asia & Pacific, South Asia, Sub-Saharan Africa, Europe & Central Asia, and Middle East & North Africa) and income level (low- and low- and middle-income, upper-middle-income, and high-income) using 2022 World Bank categories.[29]

Responses were included in the informal payments analysis if participants answered at least one of the three screening questions. Participants who responded “yes” to at least one of the three informal payment screening questions detailed above were categorized as “reporting informal payments.” Participants who responded “no” and/or “unsure” to all screening questions answered were categorized as “not reporting informal payments.” The frequency of informal payments was further investigated by asking the participants “reporting informal payments” how often they perceived this behavior to occur using the following options: “never,” “less than once a month,” “more than once a month but less than once a week,” “more than once a week but less than once per day,” and “multiple times per day.” Lastly, participants “reporting informal payments” were asked a series of “select all that apply” questions with the option to provide a free text answer in order to further characterize the nature of informal payments in their laboratory. This last set of questions was aimed at assessing perceived determinants and impacts of informal payments on the work environment, PALM, and the health system in general. These results were reported as absolute frequency.

Descriptive statistics were performed using GraphPad Prism version 9.5.1 for MacOS, GraphPad Software, San Diego, California USA, www.graphpad.com.

RESULTS

Participant characteristics

A total of 268 unique responses to the informal payments screening questions were recorded (Table 2). The median age of respondents was 39 with a median of 9 years of work experience in PALM. A slight majority of respondents were men (n = 154, 57.5% vs. n = 107, 39.9% women and n = 7, 2.6% prefer not to answer) and approximately three quarters worked in the public sector (n = 199, 74.3%) and in an urban setting (n = 207, 77.2%). Nearly two-thirds of respondents were physicians or laboratory specialists (n = 167, 62.3%) and nearly half held a leadership position in the laboratory (n = 128, 47.8%). The majority of participants worked in sub-Saharan Africa (n = 204, 76.1%), followed by North America (n = 41, 15.1%), Europe and Central Asia (n = 13, 4.9%), East Asia and Pacific (n = 4, 1.5%), Latin America and Caribbean (n = 2, 0.7%), Middle East and North Africa (n = 2, 0.7%), and South Asia (n = 1, 0.4%). By income level, this corresponds to 75.0% (n = 201) working in LMICs, 5.2% (n = 14) working in upper-middle-income countries (UMICs), and 19.4% (n = 52) working in high-income countries (HICs) (Table 2).

Response to screening questions

Of the 268 participants who responded to the screening questions, approximately 47% (n = 125) responded affirmatively to at least one of three questions and were therefore categorized as “reporting informal payments.” The remaining 53% (n = 143) of participants answered either “no” and/or “unsure” to all completed screening questions and were categorized as “not reporting informal payments” (Figure 1). Regarding responses to individual screening questions, 35.4% reported personal knowledge of informal payments occurring at their facility, 35.1% believed that informal payments were paid by patients to lab staff, and 18.3% believed that informal payments were paid by lab staff to vendors or suppliers (Figure 2).

There was no significant difference in gender, occupation, geographic characteristics, or leadership roles among those reporting informal payments and those who did not (Table 2). However, participants who reported informal payments were significantly more likely to work in a public laboratory (n = 108, 86.4%, 95% CI [91.3, 79.3]) than a private or religiously-affiliated laboratory (n = 10, 8.0%, 95% CI [14.1, 4.4]). Similarly, those reporting informal payments were more likely to work in an LMIC (n = 115, 92%, 95% CI [95.6, 85.9]) than in a non-LMIC (n = 10, 8%, 95% CI [14.1, 4.4]) (Table 2, Figure 3).

Types and frequency of informal payments

In general, a higher proportion of respondents reported knowledge of laboratory staff accepting informal payments than reported knowledge of staff being asked to make informal payments (41.5% vs. 33.6%). The most commonly reported informal transactions were laboratory staff accepting payments to perform testing and/or release a result (n = 81, 64.8%) (Figure 4) with less than half of respondents reporting that they knew of informal payments being accepted to issue a pathology report, perform phlebotomy, or for supplies that should be included in the cost of the test. Moreover, 47.2% of respondents reported being required to make an informal payment in exchange for reagents or equipment maintenance (Figure 4). Less than 10% of respondents who reported informal payments believed that these transactions were occurring multiple times per day for each of the scenarios presented.

Perceived determinants and consequences of informal payments

Participants were then asked to weigh in on potential reasons for offering and implications of laboratory staff accepting informal payments. The primary reason provided for people to offer informal payments was to access results faster (n = 86, 68.8%) with fewer participants citing reasons such as improving relationships with staff (n = 21, 16.8%) or to access better quality results or services (n = 16, 12.8%) (Figure 5). Notably, five respondents (4%) mentioned that informal payments are a normal or expected transaction at their facility.

When participants were asked about potential outcomes of informal payments, over half of respondents mentioned that this behavior results in a cycle whereby individuals making informal payments encourage more informal payments (n = 71, 56.8%). In addition, participants cited that informal payments increase the cost medical care (n = 49, 39.2%), worsen staff morale (n=41, 32.8%) and can result in loss of employment if caught (n = 41, 32.8%). In contrast, fewer participants (less than 25%, n = 31 per positive impact) felt that informal payments had a positive impact on PALM delivery. Some mentioned that informal payments could allow an individual to make a living wage (n = 21, 16.8%), improve staff morale (n = 10, 8.0%), improve access to PALM services (n = 10, 8.0%), and increase staff retention (n = 6, 4.8%) (Figure 6A). Lastly, 19% (n = 24) of participants believed that informal payments may promote better patient care or services (Figure 6B).

DISCUSSION

The aim of this study was to explore the perceptions of and experiences with informal payments within PALM, as informal payments represent a potential hindrance to PALM capacity building efforts and equitable and affordable access to quality pathology and laboratory services. To assess these experiences, we conducted an online survey of PALM staff working in public and private laboratories globally. We found that 47% of respondents to our survey had knowledge of informal payments taking place at their facility. Notably, respondents who reported knowledge of informal payments were more likely to work in an LMIC (92.0%, 95% CI [95.6, 85.9]) than in a UMIC (3.2%, 95% CI [7.9, 1.3]) or HIC (4.8%, 95% CI [10.1, 2.2]), and they were more likely to work in a public laboratory than a private or religiously-affiliated laboratory (86.4%, 95% CI [91.3, 79.3] vs. 8.0%, 95% CI [14.1, 4.4]). This last observation may be related to low salaries within the public sector, which are known to drive informal payments in health care more broadly.[14–16]

Our results also indicate that informal payments are more frequently being made to laboratory staff in exchange for services than by laboratory staff to vendors and suppliers to access reagents and equipment maintenance. Approximately 35% of respondents knew of lab staff accepting informal payments from patients, whereas 18% knew of lab staff making informal payments to laboratory suppliers/vendors. Despite nearly half of respondents reporting knowledge of informal payments, this practice does not yet appear to be embedded in PALM practice as only 10% of respondents reported transactions happening daily or multiple times per day.

The most frequently cited reason for patients offering informal payments was to improve turnaround time (TAT) for testing. This desire for faster service has also been described as a motivator for informal payments in other areas of the health sector.[22,30] Paying an extra fee may represent a necessary coping mechanism utilized by patients to access timely services in weak and overtaxed health systems. However, this financial penalty is borne entirely by patients, many of whom may already have limited financial resources.[21,23,31,32] Prolonged TAT is a well-recognized limitation of PALM services in LMICs,[33,34] despite the fact that access to pathology and laboratory results in a clinically relevant timeframe is critical component of all functional health care systems. Our results potentially expose an unrecognized barrier to improving TAT in these settings. That is, if there is an informal monetary incentive to provide faster services, efforts to strengthen diagnostic capacity in order to improve TAT may be met with resistance.

While respondents reported both positive and negative effects of informal payments, on balance informal payments were perceived to have a negative impact on the work environment, delivery of PALM services, and on the health system in general. For example, more people believed that informal payments worsen staff morale (33%), rather than improve staff morale (8%), and more people thought they reduce (26%), rather than improve (8%) access to PALM services. Interestingly, the majority of respondents (56.8%) cited that informal payments

encourage more informal payments, suggesting that while many people have knowledge of informal payments occurring, there may be concern among PALM staff that the practice could become entrenched in the workplace.

The most frequently cited positive impact reported by participants in our survey was to supplement salaries (n = 21, 16.8%). As mentioned previously, supplementing low salaries is a common motivator for informal payments in LMICs.[14–16] Tim Ensor refers to these as "cost contributing" informal payments, which are made to close or narrow the gap between the resources available within the health system and those required to deliver services.[35] In this case, patients bear the responsibility of remunerating providers through informal payments.[35] While cost contributing informal payments may be considered more of a survival mechanism in these settings, rather than corruption for personal enrichment,[16] Ensor argues that the practice of extracting payment for services that one is obligated to provide for free is ethically problematic. The number of respondents who perceived informal payments to encourage more informal payments and increase the cost of medical care suggests that participants understand this ethical tension.

There are limitations to our study that prevent the generalizability of these findings. Due to our sampling methods we were unable to get an equal number of respondents from all geographic regions and representing all levels of PALM staff. In particular, participants from sub-Saharan Africa are overrepresented in our study relative to other regions of the world. In addition, our survey was only offered in English, which may have had an impact on the responses of participants for whom English is not their native language. Understanding the unique cultural, financial, political and regional context is essential to devising a comprehensive strategy to reduce informal payments. Therefore, in-depth surveys conducted in specific environments will be required to inform meaningful policy interventions.

Another important limitation is that the categories of informal payments put forth in the survey were not comprehensive. For example, our study did not explicitly call out 'gifts' as a

form of informal payment. Previous studies have demonstrated that gift-giving also poses problems for equity and accessibility to health care services.[8] Moreover, the nature of certain financial relationships between PALM providers and vendors or other laboratory industry representatives could be considered by some as a form of informal payments. Similar to what has been described within the pharmaceutical industry,[36] these include paid meals and travel accommodations, consulting fees, and advisory board positions. Notably, money in these types of relationships flows from industries to service providers, at least in the United States.[36] However, our survey was only designed to capture payments going from PALM providers to reagent and equipment suppliers/vendors. Taken together, our findings may actually underestimate the magnitude and impact of informal payments globally and particularly in HICs. Lastly, these data represent self-reported knowledge and perceptions of informal payments. Although efforts were made to maintain neutral language in the survey questions, our results are subject to biases related to self-reporting behavior that may deviate from the social norm.[37]

Despite these limitations, the findings in this study have potential implications for strengthening pathology and laboratory systems in LMICs. Our results indicate that informal payments are being utilized to some extent to finance PALM services, particularly in public facilities and in LMICs. Given the previous literature demonstrating the regressive nature of this practice,[21,23,31,32] informal payments represent a potential barrier to equitable access to PALM services in these settings. Although there has been significant attention recently paid to the importance of strengthening PALM capacity in resource-limited settings,[1,38,39] few, if any, have accounted for the potential impact of informal financial incentives on access to these services.

Improving the quality of PALM services in LMICs would likely reduce informal payments long-term, but this path to improvement cannot ignore the role that these unofficial economic incentives play in current service delivery. These global survey results are too general to inform specific policy interventions. Strategies to reduce informal payments within the health system, including PALM, must be multifaceted and holistic in order to avoid unintended consequences

that could ultimately exacerbate the problem.[31,40,41] Although more study is needed to fully understand the nature and scope of informal payments in specific locales and/or contexts, our findings are an important first step in characterizing this practice within PALM and its potential impact on delivery of these services in LMICs.

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TABLES AND FIGURES

Table 1. Summary of demographic variable groupings

Category	Grouped Demographic Variable	Variables that appeared in survey
Work setting	Public Laboratory	• Public Laboratory
	Private or religiously-affiliated laboratory	• Private, for-profit hospital laboratory • Private, not-for-profit hospital laboratory • Mission or religiously-affiliated hospital laboratory
Occupation	Physician/Specialist	• Consultant pathologist • Registrar/resident • Medical officer • Laboratory medicine specialist
	Laboratorian	• Medical/clinical laboratory scientist • Histotechnologist/cytotechnologist • Laboratory technician

Table 2. Characteristics of participants who responded to screening questions related to informal payments.

Demographic characteristics	Reporting informal payments (n = 125)	Not reporting informal payments (n = 143)
Age (years)		
Mean	40.2	41.1
Median (IQR)	39 (33.8-47)	40 (33-46.8)
Range	24-65	25-72
Experience in PALM (years)		
Mean	10.6	12.3
Median (IQR)	8 (5-14)	10 (5-17)
Range	0.1-39	1-50
	N (% [95% CI])	*N (% [95% CI])*
Gender		
Male	79 (63.2 [71.1, 54.5])	75 (52.4 [60.5, 44.3])
Female	44 (35.2 [43.9, 27.4])	63 (44.1 [52.2, 36.2])
Prefer not to say	2 (1.6 [5.6, 0.3])	5 (3.5 [7.9, 1.5])
Occupation		
Physician/Laboratory Specialist	77 (61.6 [69.7, 52.8])	90 (62.9 [70.4, 54.8])
Laboratorian	44 (35.2 [43.9, 27.4])	52 (36.4 [44.5, 28.9])
Other	2 (1.6 [5.6, 0.3])	1 (0.7 [3.9, 0.0])
No answer	2 (1.6 [5.6, 0.3])	0 (0.0 [2.6, 0.0])
Laboratory Leadership Position		
Medical Director	17 (13.6 [20.7, 8.7]	32 (22.4 [29.9, 16.3])
Manager or Supervisor	46 (36.8 [45.5, 28.9])	33 (23.1 [30.6, 16.9])
None	62 (49.6 [58.2, 41.0])	76 (53.2 [61.1, 45.0])
No answer	0 (0.0 [3.0, 0.0])	2 (1.4 [5.0, 0.2])
Work Setting		
Public laboratory	***108 (86.4 [91.3, 79.3])***	***91 (63.6 [71.1, 55.5])***
Private or religiously-affiliated laboratory	***10 (8.0 [14.1, 4.4])***	***38 (26.6 [34.4, 20.0])***
Research laboratory	2 (1.6 [5.6, 0.3])	5 (3.5 [7.9, 1.5])
Other	2 (1.6 [5.6, 0.3])	7 (4.9 [9.8, 2.4])
No answer	3 (2.4 [6.8, 0.7])	2 (1.4 [5.0, 0.2])
Geographic Characteristics		
Rural	5 (4.0 [9.0, 1.7])	8 (5.5 [10.7, 2.9])
Peri-urban / Suburban	19 (15.2 [22.5, 10.0])	26 (18.2 [25.3, 12.7])
Urban	100 (80.0 [86.1, 72.1])	107 (74.8 [81.2, 67.1])
No answer	1 (0.8 [4.4, 0.0])	2 (1.4 [5.0, 0.2])
Region		
North America	***4 (3.2 [7.9, 1.3])***	***37 (25.9 [33.6, 19.4])***
Latin America & Caribbean	1 (0.8 [4.4, 0.0])	1 (0.7 [3.9, 0.0])
East Asian & Pacific	0 (0.0 [3.0, 0.0])	4 (2.8 [7.0, 1.1])
South Asia	1 (0.8 [4.4, 0.0])	0 (0.0 [2.6, 0.0])
Sub-Saharan Africa	***117 (93.6 [96.7, 87.9])***	***87 (60.8 [68.5, 52.7])***
Europe & Central Asia	***1 (0.8 [4.4, 0.0])***	***12 (8.4 [14.1, 4.9])***
Middle East & North Africa	1 (0.8 [4.4, 0.0])	1 (0.7 [3.9, 0.0])
No answer	0 (0.0 [3.0, 0.0])	1 (0.7 [3.9, 0.0])
Country Income Level		
Low- and Lower-Middle Income	***115 (92.0 [95.6, 85.9])***	***86 (60.1 [67.8, 52.0])***
Upper-Middle Income	4 (3.2 [7.9, 1.3])	10 (7.0 [12.4, 3.8])
High-Income	***6 (4.8 [10.1, 2.2])***	***46 (32.2 [40.2, 25.1])***
No answer	0 (0.0 [3.0, 0.0])	1 (0.8 [3.9, 0.0])

"Reporting informal payments" includes participants who answered "yes" to ≥1 of 3 screening questions. "Not reporting informal payments" includes participants who answered "no" and/or "unsure" to all completed screening questions. Statistically significant differences are highlighted in bold and italics. Abbreviations: PALM = pathology and laboratory medicine, IQR = interquartile range

Figure 1. Categorization of participants according to responses to screening questions.

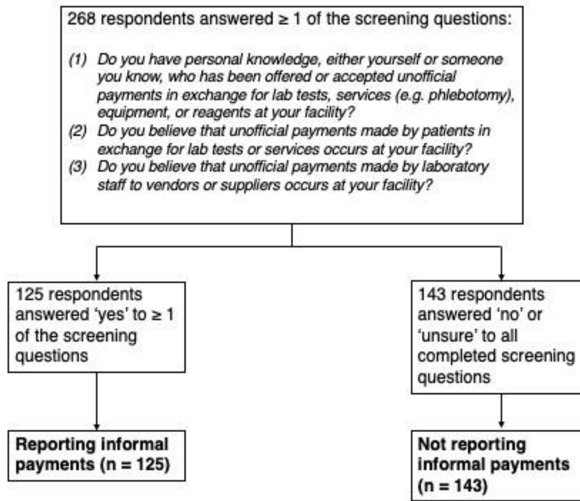
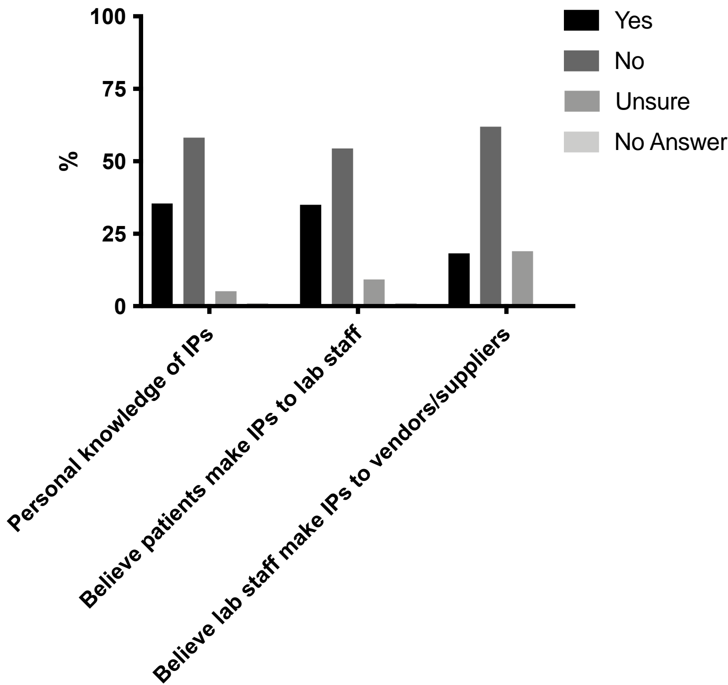
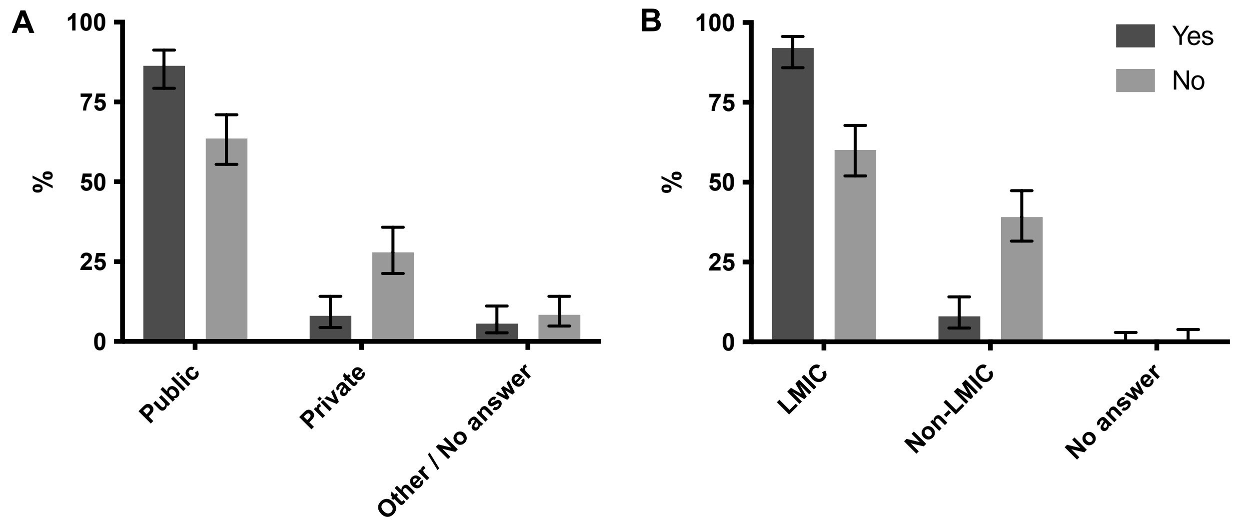


Figure 2. Frequency of participants reporting informal payments.



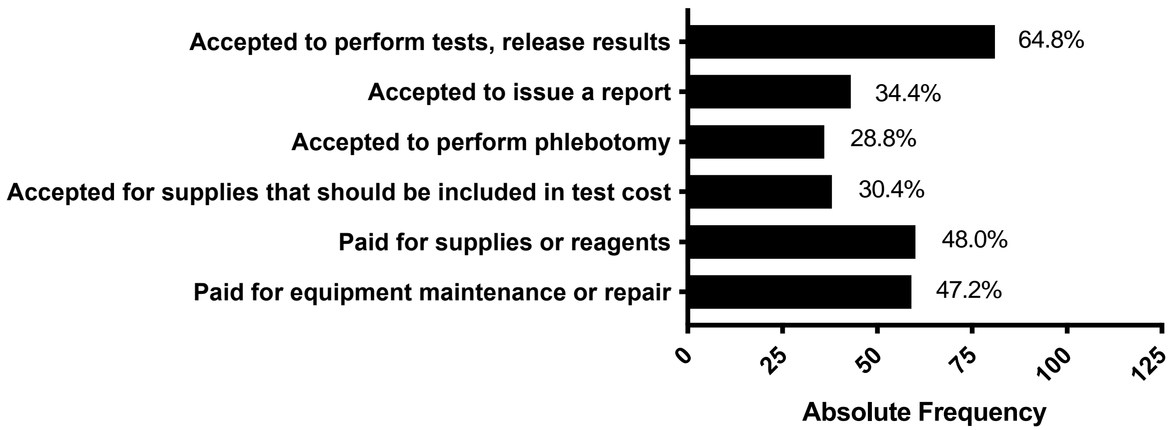
Responses of participants (n = 268) to 3 screening questions related to informal payments (IPs) represented below from left to right: (1) "Do you have personal knowledge, either yourself or someone you know, who has been offered or accepted unofficial payments in exchange for lab tests, services (e.g. phlebotomy), equipment, or reagents at your facility?", (2) "Do you believe that unofficial payments made by patients in exchange for lab tests or services occurs at your facility?", and (3) "Do you believe that unofficial payments made by laboratory staff to vendors or suppliers occurs at your facility?"

Figure 3. Differences among participants who responded to screening questions related to informal payments.



Characteristics of respondents (n = 268) by (A) work setting and (B) income level of country. Error bars indicate 95% confidence intervals.

Figure 4. Frequency of accepting or paying informal payments for PALM-related activities.



Reported frequency of PALM staff accepting or being asked to pay informal payments to perform and/or receive select PALM services among participants who answered “yes” to screening questions (n = 125). Proportion of participants who reported informal payments for each activity of the total reporting informal payments (n = 125) is indicated at the end of each bar.

Figure 5. Perceived reasons for offering informal payments (n = 125)

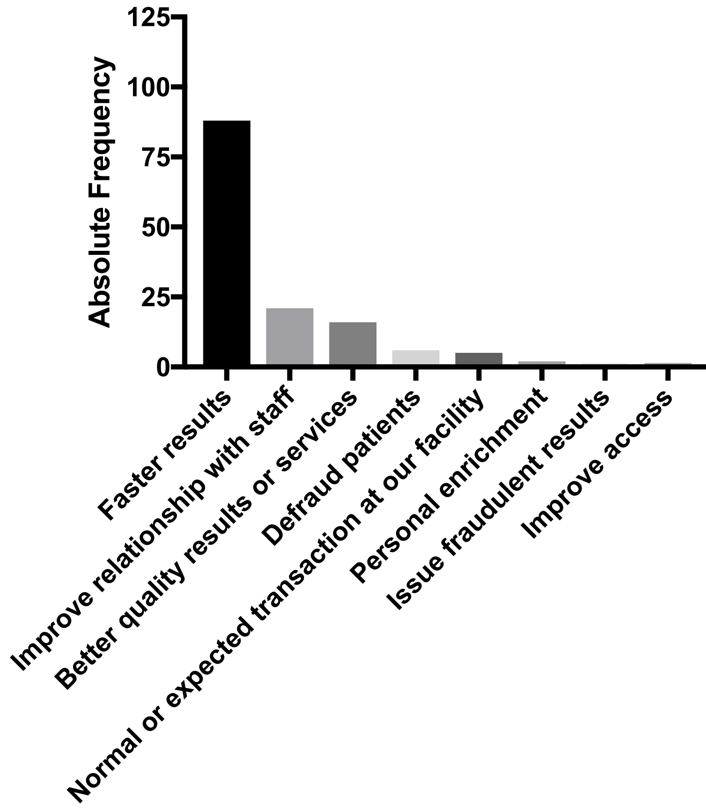
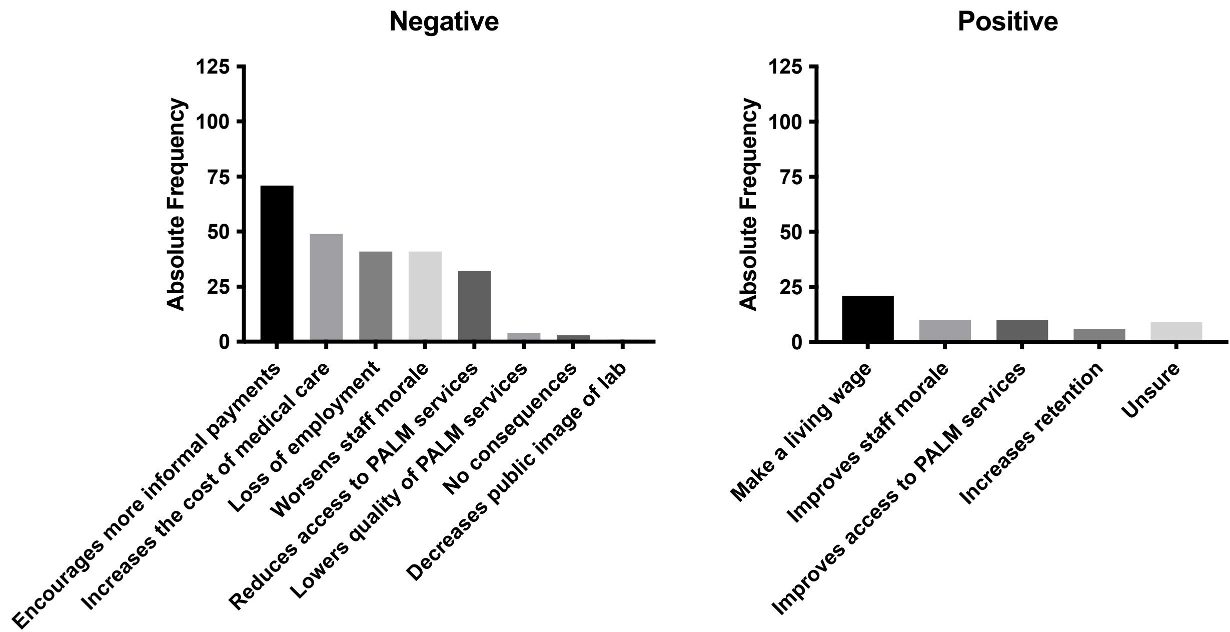
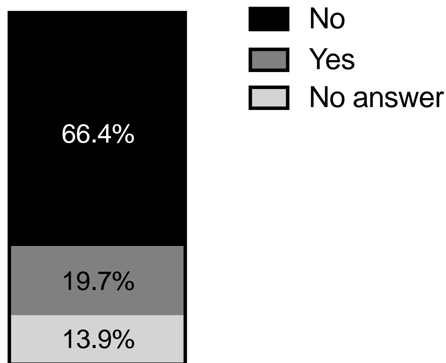


Figure 6. Perceived impacts of informal payments.

A



B



Participants who answered "yes" to the screening questions (n = 125) were then asked a series of questions regarding potential impact A. Frequency of perceived impacts. B. Proportion of participants who answered "Do informal payments promote better patient care or services?" by response.