




SYSTEMATIC REVIEW

How does Public Financial Management (PFM) influence health system efficiency: A scoping review [version 1; peer review: 2 approved]

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Abstract

Background

Effective Public Financial Management (PFM) approaches are imperative in the quest for efficiency in health service delivery. Reviews conducted in this area have assessed the impact of PFM approaches on health system efficiency but have left out the mechanisms through which PFM influences efficiency. This scoping review aims to synthesize evidence on the mechanisms by which PFM influences health system efficiency.

Methods



We searched databases of PubMed and Google Scholar and websites of the World Health Organization (WHO), World Bank and Overseas Development Institute (ODI) for peer-reviewed and grey literature articles that provided data on the relationship between PFM and health system efficiency. Three reviewers screened the articles for eligibility with the inclusion criteria. Data on PFM and health system efficiency was charted and summarized. We then reported the mechanisms by which PFM influence efficiency.

Results

PFM processes and structures influence health system efficiency by

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influencing; the alignment of resources to health system needs, the cost of inputs, the motivation of health workers, and the input mix.

Conclusion

The entire budget process influences health system efficiency. However, most of the findings are drawn from studies that focused on aspects of the budget process. Studies that look at PFM in totality will help explore other cross-cutting issues within sections of the budget cycle; they will also bring out the relationship between the different phases of the budget cycle.

Plain language summary

Effective management of public finances is crucial for health services, but previous reviews have not fully explained how this happens. This review aims to uncover the ways in which public financial management influences health system performance. By searching medical and financial databases, as well as major organizations' websites, we identified relevant studies and reports that explain this relationship. Our analysis found that PFM processes influence the entire health budget process, from planning to spending, and monitoring, all of which play a significant role in health system performance. However, most studies have focused on specific parts of the budget process. Future research should explore the entire budget cycle to understand how its different stages are interconnected and affect health system performance.

Keywords

Public Financial Management, efficiency, health systems



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Introduction

Public funds offer a sustainable and equitable source of financing for the health system¹. However, the amount of public funding allocated to healthcare can be limited by economic growth and competing priorities from other sectors². Improving efficiency in the use of public funds for health offers an avenue for mobilizing additional resources for the health sector that's within the control of the health system³. Efficiency in healthcare systems refers to the extent to which health system objectives are met with available resources, and there are two types: (1) allocative efficiency which entails maximizing output with the best input combination and (2) technical efficiency which involves getting maximum outputs with available inputs or achieving a given set of outcomes using the least amount of outputs⁴. Inefficiencies within the health sector result in the wastage of 20–40% of health resources⁵.

The management of public funds is based on the Public Financial Management (PFM) processes⁶ which entails the laws, processes, rules, and institutions established by governments to collect, allocate, spend, and account for public funds^{4,7}. PFM is integrated into the public budget process which entails budget formulation, execution, and monitoring and evaluation⁸. During budget formulation the government plans and allocates resources to meet its objectives. Budget execution encompasses the provision of promised revenues and the use of these resources to achieve health system objectives. Budget monitoring entails the evaluation of the implementation and achievement of budgetary goals. PFM key objectives are to promote fiscal discipline, allocative efficiency, and technical efficiency⁶.

PFM has been identified as a determinant of health system efficiency^{9,10}. These papers have further shown the duality of PFM as both an enabler and a deterrent of health system efficiency^{10,11}. To gain a deeper understanding of how PFM influences health system efficiency, we conducted a scoping review^{11,12}. Previous literature reviews have only focused on the relationship between PFM and efficiency, without exploring the mechanisms by which PFM influences efficiency^{13,14}. Exploring the mechanisms may provide policy levers for improved health system efficiency.

Methods

We were guided by Arkesy and O'Malley's methodological framework for scoping reviews¹⁵ and the enhancements by

Levac¹⁶ following the steps 1) Identifying the question 2) Identifying relevant studies 3) Selecting articles and 4) data extraction and synthesis. We used the PRISMA extension¹⁷ for scoping reviews to report the findings of the study¹⁵. We did not register the protocol for this study in advance.

Identifying the research question

We sought to answer the question, "How do Public Financial Management (PFM) processes influence health system efficiency?". The definition of PFM was broad to accommodate aspects of the budget process such as the planning process, priority setting, provider payment mechanisms, procurement processes and auditing, all of which are part of the PFM process. We defined *efficiency* as both technical and allocative. Technical to mean maximizing outputs/outcomes with available resources or minimizing inputs for a given set of outcomes. Allocative to mean the best combination of inputs. The purpose of this scoping review was to identify key concepts about PFM that may influence efficiency and to identify knowledge gaps in the relationship between PFM and health system efficiency¹².

Identifying relevant studies

We searched PubMed and Google Scholar and websites of World Health Organization (WHO), World Bank, Overseas Development Institutes (ODI), and International Budget Partnership (IBP) for relevant articles on PFM and health system efficiency. We only included studies published in English. We used four key search terms, their related synonyms, and combinations to develop a search strategy: "Public" AND "Financial Management" AND "efficiency" AND "health system". We developed a Boolean Algorithm to search PubMed (Figure 1). We also searched references of selected papers for other relevant studies. The final search was done in May 2024.

Selecting articles

We included articles that focused on the entire PFM subject or an aspect of PFM, such as budget formulation, budget execution and budget monitoring (Figure 2). We included peer-reviewed empirical studies and grey literature from WHO, World Bank, and ODI but excluded systematic literature reviews. We included studies that 1) Evaluated an aspect of PFM; either budget formulation, execution, or evaluation, or an aspect under the three stages 2) articles that attempted to relate the PFM aspect to health system efficiency. For the second aspect, we first searched the abstract and included only articles that matched this criterion. We excluded studies that 1) Described but

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#1= "public financ*" OR "finance* management" OR "fiscal manag*" OR budget*
#2= public OR government OR state
#3= efficienc* OR technical efficien* OR allocative efficien*)
#4= "health system*" OR "healthcare system*" OR "health care system*" OR "health sector"
#5= #1 AND #2 AND #4
#6= #1 AND #2 AND #3 AND #4
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Figure 1. PubMed search.

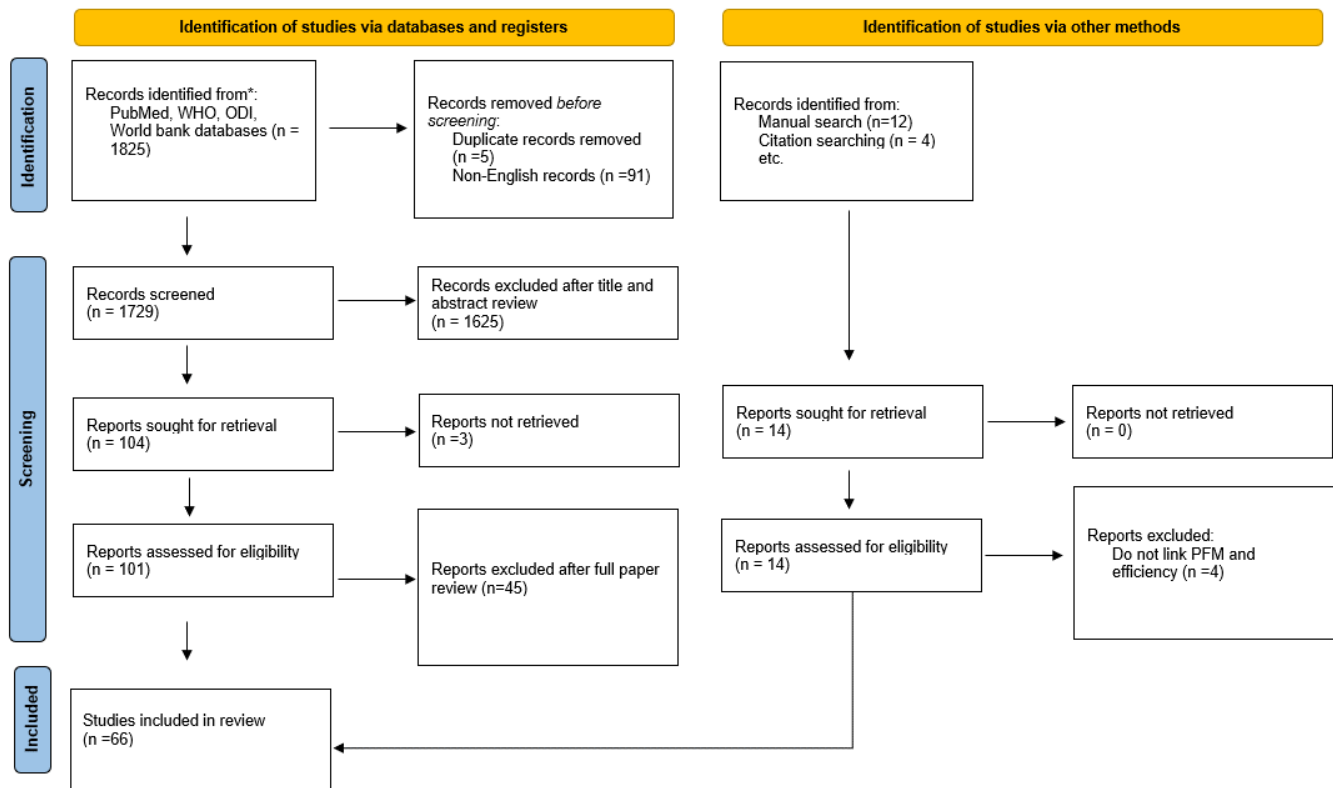


Figure 2. The study selection process flow chart (adapted from PRISMA flow diagrams).

did not evaluate an aspect of PFM 2) Did not link PFM to health system efficiency. After de-duplication, we conducted both title and abstract screening. AM and EB reviewed all the titles and abstracts to determine eligibility for full-text review. AM reviewed all full texts as the primary reviewer. EB acted as a secondary reviewer to determine inclusion. Because most of the literature on PFM and efficiency is grey, we did not conduct quality appraisal of selected articles.

Data extraction and synthesis

We applied the thematic analysis approach to extract and synthesis findings. These followed the steps of familiarization, coding, and charting. During familiarization, we read and reread the articles included in the study. We then applied a data extraction form that we developed from the review question- How PFM influenced health system efficiency. Following familiarization, we coded the data using codes developed inductively and deductively. We then further categorized the codes into four major themes: budget formulation and approval, budget implementation, budget monitoring and evaluation, and actors. Each theme had several sub-themes; for example, under budget formulation, we report five sub-themes: budget ceilings, budget structure, alignment of plans and budgets, costing, pooling of funds and priority setting processes. AM finalized the categorization of sub-themes, and where there was uncertainty about the allocation of specific sub-themes,

this was resolved by discussions between AM, EB and BT. We then charted the data onto an Excel framework that allowed us to summarize the findings by category, compare between papers and identify linkages.

Results

The PubMed, Google Scholar, and organizational websites literature search resulted in 1825 items; we removed five duplicates and 91 non-English publications. 1625 items were excluded based on the title and abstract. We did a full paper review for 101 papers and an additional 14 papers added through experts in the field and manually searching references of selected papers. At the full paper review, we excluded 45 records that did not link PFM and service delivery. A total of 66 papers are included in this review (extended data).

Article overview

Of the 66 papers included in this review, 37 are peer reviewed studies while 29 are from grey literature. On the study setting, two are in high income countries (HIC), 44 in low- and middle-income countries (LMIC) and 14 targeted both HIC and LMIC countries (Figure 3). A total of 10 papers focused on budget formulation only, 14 on budget execution, four budget formulation and execution, six focused on health service delivery and 20 on PFM in general.

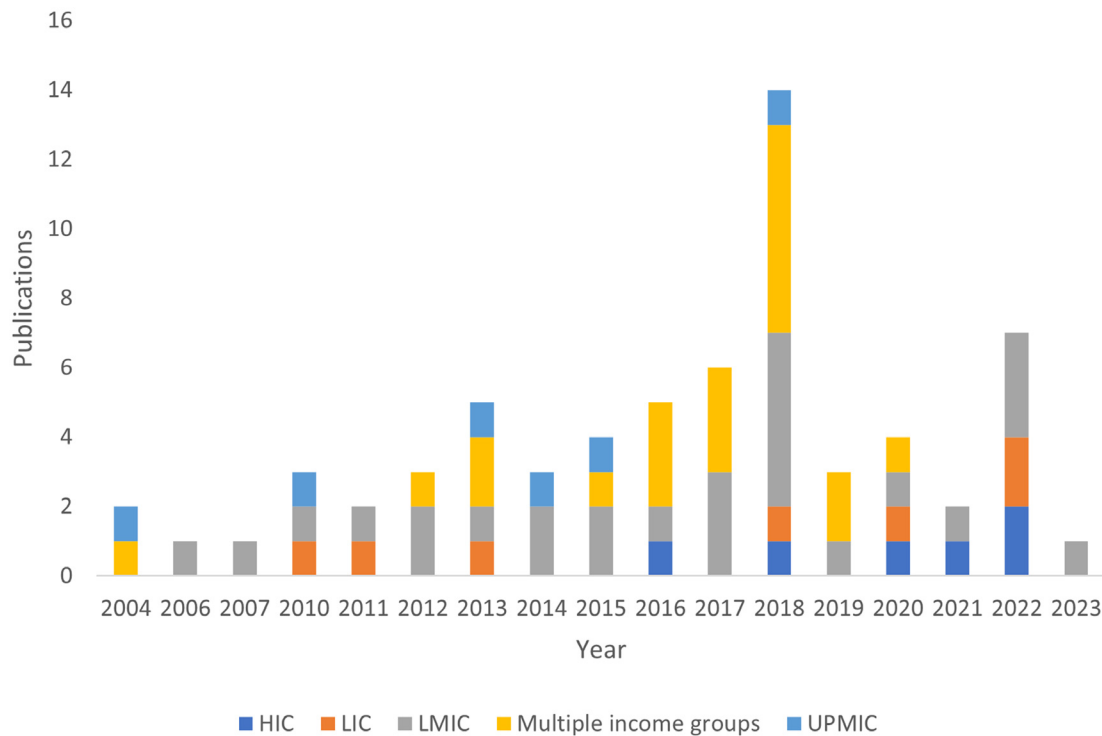


Figure 3. Publications screened by year and country income group.

How PFM influences health system efficiency

The mechanisms through which PFM influences efficiency are explained in the three levels of the budget process: budget formulation, execution, and monitoring.

Budget formulation and approval

Budget formulation and approval entails projecting expected funds, planning for the funds, and seeking legislative authorization for the plans before execution^{8,18,19}. Challenges and opportunities within budget formulation had a ripple effect downstream the PFM process (in budget execution and accountability). The papers reviewed showed that budget formulation structures and processes could potentially influence health system efficiency through the following five aspects; the budget ceiling^{20–24}, the budget structure^{22,25,26}, alignment of plans to budget^{23,27–29}, costing^{22,30–32}, and pooling of the funds^{10,33–35}.

Budget ceilings - the amount of money allocated to the health system – influenced health system efficiency. There was consensus that adequate and indicative budget ceilings that were allocated based on strategic criteria and issued on time improved service delivery outcomes by improving the alignment of plans to budgets^{21–23,36}. For example, in Kenya³⁷ and Uganda³⁸, insufficient budget allocation led to inadequate infrastructure for service delivery and poor service delivery, respectively. Also, in Thailand, historical budget ceilings within the civil servants' scheme encouraged inefficiency because the more the scheme spent, the more they were

allocated³⁹. Finally, ceilings that were not indicative of the actual funds resulted in service delivery interruptions in DRC because budgets were not honoured⁴⁰, and cash budgeting and replanning in Ghana because of the significant differences between ceiling projections and resource availability⁴¹.

The papers reported use of different budget structures with consequences on efficiency. The structures used included line budgets^{10,25,34,42,43} programme based budgets^{10,30,36,44} and outcome budgets⁴⁵, with some countries using both functional and economic classification of budgets³⁰. Budget structures that linked resources to priorities and outcomes^{22,26,46} and allowed flexibility in the use of resources enhanced service delivery²⁵ with positive implications on health system efficiency. For example, several reports on PFM for health have shown that the use of line-item budgets disconnected priorities and resources^{25,46}, resulting in health systems that focused on infrastructural projects rather than purchasing benefits for the population⁴⁰. Another report on how health financing strategies can support scale-up on NCD interventions noted that input-based budgeting encouraged inefficiency and inequity by encouraging the status quo in resource allocation because efficiency and equity were not considered during the budget formulation processes²⁵.

The alignment of health budgets with plans had a likely impact on efficiency. When health systems failed to link available resources to health system plans then they compromised efficiency in two ways. First plans that were not

included in the budget were not funded and therefore not implemented^{23,25,29,43,47,48}, second the misalignment compromised both financial and performance accountability as at the end of the financial year, the health system could not link the resources used to outcomes produced^{22,46}. For example, in Lesotho, a study that tested implementation progress for PBB found that the plans and PBB development happened under different structures. As a result, the plans and budgets could not align. The misalignment made it challenging to monitor performance²². A study by Waithaka *et al.* in Kenya that looked at the planning and budgeting processes within counties found that these processes were not aligned; budgets did not incorporate plans which reflected county priorities the plans were therefore not implemented²⁸. Another report indicated that to enhance efficiency, Ethiopia developed one plan, one budget and one report initiative to ensure that plans, budgets and reports are aligned³⁵.

Pooling of health system resources was associated with clarity and predictability in the budget envelope that enabled effective planning and, possibly enhanced efficiency^{10,34,38,49}.

Besides, pooling allowed for effective resource reallocation, enhanced accountability, and streamlined the incentives for service delivery. For example, in China, the national government used earmarked funding to enhance specific health goals at the local level. However, there was uncertainty about the sustainability of these funds, and second, the study reported reallocation of funds from the health systems' operation budget to other sectors following the introduction of earmarked transfers⁴⁹. A WHO report on PFM bottlenecks and UHC opportunities noted that in Sierra Leone, multiple fragmented funding sources with different manuals and different bank accounts limited transparency and accountability⁵⁰.

Priority setting mechanisms influenced efficiency. Evidence based priority setting was more likely to result in efficiency⁵¹. Countries whose priorities were skewed to curative rather than primary healthcare were more likely to be inefficient. For example, Ethiopia enhance efficiency by investing in high impact primary healthcare interventions⁵². Kenya on the other hand was deemed inefficient as the focus was more on curative rather than preventive care⁵³.

Budget execution

Budget execution entailed the release of funds and the use of the funds to finance the provision of health services^{10,54}; it included several steps; expenditure verification, payment approval and actual payment⁵⁰. For most African countries, the budget execution phase was the weakest part of the budget cycle; there were risks of losses of resources from the health system in every step of the budget execution^{24,32}. Budget execution influence efficiency through several ways: credibility of the budget -the extent to which the government honored the approved budget, timeliness of the cash disbursement process, financial controls, financial management systems, fraud and corruption, ring-fencing of funds and provider payment mechanisms.

Low budget credibility undermined the planning and budgeting phase of the budget. Because budgets were not honoured, health systems had to re-budget based on the funds received⁴¹. Low budget credibility also undermined service delivery as it led to shortage of supplies^{10,55}. For example, in Ghana, a study that reviewed the budget cycle found that the budget cuts during execution led to development of new budgets based on the amount received; this undermined the budget formulation stage⁴¹. Also, in Zambia and Tanzania, a study that linked the budget process to health system performance found that the degree to which the budget was honored was inadequate; this compromised the quality of service delivery by limiting the ability to purchase medical supplies¹⁰.

Cash disbursement delays were linked to health system inefficiency through 1) interrupted service delivery^{34,41,44,47,55,56}

2) health worker demotivation due to salary delays and lack of resources^{34,44} 3) Loss of resources in the process of chasing funds⁴⁴ 4) increased supplier costs to accommodate cash disbursement delays 5) patient and resource shifting that often led to informal payments which created barriers for access³⁷ 6) compromised tendering processes because the systems lacked a credible platform (good credit history) to contract suppliers^{10,58} and ultimately 7) poor budget absorption^{43,44}. For example, in Yemen, a study that assessed value for money in the health system found that cash disbursement delays had forced many facilities to halt operations and made absenteeism of health workers rampant³⁴. In Zimbabwe, a study that examined the purchasing arrangements for health services found that cash flow challenges undermined service delivery through poor planning, dilapidated infrastructure, poor equipment maintenance, and shortage of supplies and equipment⁴⁷. In Ghana, a facility manager had to spend half their allocation to cater for transport and accommodation to chase delayed funds at the capital in Accra⁴⁴.

Financial controls were associated with both efficiency and inefficiency⁵⁹. They could enable service delivery by preventing misappropriation of funds or be a stumbling block by preventing budget execution. Rigid internal controls resulted in cash disbursement delays⁶⁰, limited autonomy for health workers^{10,26,61,62} and reduced budget absorption. For example, in Ghana, a study that examined how the untimely release of funds influenced health service delivery found that half of each financial year was lost in financing procedures, and as a result, plans were not implemented⁴⁴. A WHO report on PFM and UHC noted that in DRC, every stage of controls reduced the funds available to healthcare; of the total budget, only 65% was committed, 55% validated for payment, 50% approved for actual payment, and 40% paid to providers³². In South Africa, strict PFM controls that did not consider the health workers or patient needs resulted in poor patient outcomes⁶².

The Financial Management Information Systems (FMIS) were said to influence provider autonomy, the efficiency of cash disbursement, resource fragmentation and accountability. For example, in Armenia, a study that examined

the transition to programme based budgeting reported that the treasury was responsible for budget execution and all payments were made through the treasury financial management system limiting autonomy for health workers³⁶. In Tanzania, a study that linked the budget cycle to performance criteria in health found that investment in a Financial Management system that was simple and easy to use even at the lowest level gave the facilities more autonomy, thereby increasing efficiency¹⁰.

Fraud and corruption were associated with inefficiency⁵⁰. They led to loss of resources from the health system. For example, in Mozambique, a WHO reported that misappropriation of resources during budget execution reduced spending on sector priorities³². In South Africa, Folscher and Kruger found high instances of wasteful expenditure that resulted in overall poor performance and bad audit reports²⁹. Another report by the WHO on public financing for health in Africa noted that improving the budget envelope's actualization depends partly on reducing leakages that resulted from a deficiency in healthcare financial management⁶¹.

Failure to ring-fence health sector funds was associated with loss of resources to other sectors. This reduced healthcare resources undermining service delivery and health outputs²⁴. For example, in DRC, a WHO report noted that health funds were not ring-fenced and were used for other administrative activities under the president's office, reducing the budget available for health²⁴. In Kenya, a study by Waithaka *et al.*, found that funds that were planned for purchasing motorbikes for the health system were reallocated to another governors projects which he had promised the public²⁸

Strategic provider payment mechanisms enhanced efficiency. Provider payment mechanisms influenced provider behavior thereby influencing efficiency. Mixed provider payment mechanisms led to patient and resource shifting with likely consequences on efficiency^{57,63}. For example, in Kenya, line item budget did not incentivize providers to strive for efficiency, instead the providers charged the patient additional fees as they felt that the funds were not sufficient⁶⁴. Also in Nigeria, mixed provider payment mechanisms led to resource shifting from funding with rigorous accountability mechanisms to those with less rigorous accountability mechanisms⁵⁷.

Budget monitoring and evaluation

Budget monitoring and evaluation influenced health service delivery through three main mechanisms, first the fragmented accountability channels. Disconnected accountability for finances and service delivery undermined the synergy required to achieve health service delivery⁵⁶. Piatti *et al.* found that budget evaluation in Zambia and Tanzania was compliance-driven with inadequate attention to health system goals of efficiency, equity, and quality¹⁰. Also, in Ghana, there were conflicting reporting channels to the district and the Ghana Health Services in Accra, which compromised accountability from department of health⁴¹. Finally, in Nigeria, multiple funding flows led to shifting of resources and patients from

areas with complex accountability to those that required little accountability⁵⁷.

Also, the papers found that social accountability was critical in enhancing health outcomes and likely efficiency. For example, in China, Brixi *et al.* found that sub-national governments had insufficient downward accountability; thus, the health sector performed poorly compared to the agricultural sector, where there were established mechanisms for downward accountability⁴⁹. In Kenya, a facility with limited community support as the community health committee was inactive did not achieve the desired targets⁶⁵, unlike those with community support. Also, In Kenya, the implementation of plans and budgets was unsatisfactory because the hospitals lacked internal accountability mechanisms to follow up and ensure plans and budgets were implemented²⁷. In Thailand, the UCS scheme had a Facebook page and 24-hour call centre to provide clients with information and resolve disputes. As a result, it was owned by the people; this was thought to contribute to its success and efficiency³⁹. Besides, weak accountability had a direct impact over the use of public funds to deliver services^{29,65}.

Both supply-side and demand-side incentives influenced the utilization and cost of services, both of which influenced efficiency^{40,66}. Health worker incentives and sanctions for excellent and poor performance significantly influenced efficiency^{2,60}. For example, in Romania, adverse audit reports led to minimal changes as the sanctions and rewards were not enforced. Instead, hospitals with higher debts received more attention from both government and NGOs and sometimes more financing. As a result, hospitals intentionally got into debt resulting in inefficiency²¹. In South Africa, the Eastern Cape department was subjected to several government interventions for non-performance and poor audit reports for 12 years with little or no change²⁹. In 2010 following sanctions for malfeasance around public finance, the eastern cape department recorded a significant improvement in service delivery and decreased wastage of resources.

Actors

Stakeholder involvement in the budget process had an influence on health system efficiency. Community-level stakeholder involvement in the PFM process increased awareness of services, demand for services and accountability. Communities that were more aware were better placed to demand accountability⁶⁷. For example, in Kenya, a pilot study that tested the integration of social accountability mechanisms in health service delivery found that acceptance and support from the community increased demand for services⁶⁵. The study also found that facilities with better support from the community were more likely to meet their service delivery targets and were, therefore, more efficient⁶⁵.

Frontline worker stakeholder involvement in the budget process enhanced alignment of plans to budget, motivated health workers and increased mobilisation of funds for the health sector. For example, in Kenya, a study that examined hospital autonomy in the context of devolution found that

decreased stakeholder involvement was associated with misalignment of plans and budgets and failure to implement planned activities⁶⁸. In the Philippines, frontline worker management of the budget process increased funding from other sources such as the private sector and user fees⁶⁹.

The success of the PFM arrangements in transforming budgets to health system outcomes depended on the actors in the process⁶⁰. For example, in Ghana, the external audit was the responsibility of the auditor general. Late and poor audit reports from their office meant that the accountability mechanisms for the health system were poor⁶⁰. According to Duran et al, there was widespread distrust among the hospital management team, the hospital board was seen as a bureaucratic addition that did not facilitate the budgeting process²¹. In South Africa, the report by Folscher and Kruger reported an undue influence of unions over hospital managers that perpetuated indiscipline and poor work ethics²⁹. Also in South Africa, according to Duran et al changes in the leadership positions led to significant changes in the performance of the health system, with improved financial management and accountability²⁹.

Discussion

This review sought to synthesize evidence on how PFM influences health system efficiency. While PFM has been identified as a determinant of efficiency, few studies have examined the relationship between PFM and efficiency of health systems. This gap is concerning as efficiency gains have been identified as one of the crucial sources of domestic fiscal space for health, and PFM is a determinant of efficiency. For health systems to actualize PFM related efficiency gains, it is vital to understand how PFM structures and processes influence efficiency. These are likely to provide policy levers for increased fiscal space for health. Besides, most of the studies that relate to PFM and efficiency have been piecemeal, considering singular aspects of PFM such as planning, budgeting, priority setting, provider payment mechanisms, rather than PFM in its totality. While these studies have drawn essential lessons on each aspect, it is vital to understand how all these issues are interrelated and how their interaction influences overall system efficiency.

Nonetheless, from the papers included in the review, we draw several mechanisms through which PFM influences health system efficiency. PFM processes and structures influence health system efficiency by influencing; the alignment of resources to needs, the cost of inputs, the motivation of health workers, and the input mix.

The alignment of plans and budgets ensures that limited health system resources are allocated to where they are most needed and where they will have the greatest impact on health outcomes and therefore efficiency²³. From this review, PFM processes negatively influence this alignment in several ways: use informal priority setting mechanisms^{51,70,71}, use of historical ceilings, failure to avail ceilings, use of line-item budgets,

fragmented budgeting, failure to ring fence health funds and limited stakeholder involvement in planning and budgeting.

The cost of health system goods and services directly impacts efficiency, with more expensive goods and services leading to greater inefficiency⁷². From the literature review, the PFM processes influence the cost of inputs and therefore efficiency in various ways: cash disbursement delays led to a poor credit history and therefore increased cost of supplies, fraud and corruption led to loss of resources from the health sector and therefore increased expenditure against limited outputs, and fragmented accountability encouraged the misappropriation of funds.

The motivation and productivity of health workers also impact on health system. PFM processes and structures influenced health worker motivation and productivity in various ways. Cash disbursement delays led to salary delays that demotivated employee. Excessive controls limited provider autonomy that demotivated employees reducing their productivity, passive provider payment mechanisms failed to encourage productivity.

An adequate input mix is important for health service delivery and therefore health system efficiency⁷². From the review, PFM processes influence the input mix and therefore efficiency in various ways; inadequate ceilings limit the resources available for planning and budgeting, non-indicative ceilings or limited budget credibility leads to an inappropriate input mix that limits health service delivery, rigid financial controls lead to delayed release of funds for certain activities leading to an inappropriate input mix, and finally failure to ring fence health funds exposes them to reallocation that has the same impact as an inadequate/non-indicative ceiling.

Limitations

One limitation of this review is that we only included articles published in English. Second, most of the studies included did not focus on PFM in totality rather an aspect of PFM, this may have affected the depths of our discussions. Third, the review includes grey literature, however with the vast amount of grey literature, the selected articles may not be exhaustive. These may have implications on the findings and the discussions.

Conclusions

Despite the limitations, PFM structures and processes have potential effects on health system efficiency. However, for low and middle countries to actualize efficiency gains, it is important for them to understand how PFM and why the various aspects of PFM influence efficiency.

Ethics and consent

This study received ethics approval from the KEMRI Scientific and Ethics Review Unit (SERU), approval number SERU/CGMR-C/154/3814 first approved on 22/03/2019 and subsequently renewed on 04/05/2020 and 04/05/2021. Consent

was not required as this study summarizes existing publicly available literature.

Data availability

Underlying data

All data underlying the results are available as part of the article and no additional source data are required.

Extended data

Harvard Dataverse: How does Public Financial Management (PFM) influence health system efficiency: A scoping review. <https://doi.org/10.7910/DVN/9SZZGV>¹⁷.

This project contains the following extended data:

- Characteristics of studies included in the review.docx
- DataReadme_Musiega_et_al_review.txt (description of the project and the data)

Reporting guidelines

Harvard Dataverse: PRISMA-ScR checklist for 'How does Public Financial Management (PFM) influence health system efficiency: A scoping review' <https://doi.org/10.7910/DVN/9SZZGV>¹⁷.

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 **Brendan Kwesiga** 
UNICEF, Nairobi, Kenya

The authors could consider the following comments in the revision.

From the the studies selection process flow chart it is not clear how you arrived at 66. Does it mean that there was no addition in terms of studies identified from other methods? The total of 66 is 101 minus 45. Were there no additional studies from the other sources reviewed?

The authors could categorize the studies by the methods they used to show the mechanisms through which PFM influences efficiency.

The quote below which is made with reference to ***Pooling of health system resources was associated with clarity and predictability in the budget envelope that enabled effective planning and, possibly enhanced efficiency*** is confusing and does not talk directly to how pooling would improve efficiency. Does earmarking of health funds explicitly imply that these will not be held or managed as a pool? Authors also need to explain how fungibility of funds (funds being reallocated following earmarks) affected efficiency.

“For example, in China, the national government used earmarked funding to enhance specific health goals at the local level. However, there was uncertainty about the sustainability of these funds, and second, the study reported reallocation of funds from the health systems' operation budget to other sectors following the introduction of earmarked transfers⁴⁹. ”

Under the budget execution section, the authors note that failure to **ring-fence health sector funds was associated with loss of resources to other sectors as** a potential source of inefficiency. This is probably where the earmarking in China could be discussed for you to indicate both the negative and positive of ringfencing/earmarking of funds for the health sector. **“Both supply-side and demand-side incentives influenced the utilization and cost of services, both of which influenced efficiency”**. I do not think this is a budget monitoring issue. It probably belongs under execution.

As part of budget monitoring and evaluation, I was expecting issues on the misalignment between

programmatic and financial monitoring and accountability and also usefulness of budget classification/charter of account

With regards to the findings on budget ceilings, did any studies report on the effect of medium-term budget and expenditure frameworks (or maybe broadly mechanism for ensuring predictability of budgets) as influencing efficiency?

I believe some aspects such as **Fraud and corruption were** associated with inefficiency are not specific to a single component of the budget cycle but could be cross cutting. Since authors group the findings along the budget cycle, they could create on cross cutting category to capture the cross-cutting aspects identified as influencing efficiency. This could also include the influence/effect of mechanisms of external accountability. I do not see any findings related to these (e.g civil society platforms)

Are the rationale for, and objectives of, the Systematic Review clearly stated?

Yes

Are sufficient details of the methods and analysis provided to allow replication by others?

Yes

Is the statistical analysis and its interpretation appropriate?

Not applicable

Are the conclusions drawn adequately supported by the results presented in the review?

Yes

If this is a Living Systematic Review, is the 'living' method appropriate and is the search schedule clearly defined and justified? ('Living Systematic Review' or a variation of this term should be included in the title.)

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: health economics

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 22 October 2024

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Mary Ejang

Lira University, Lira, Northern Region, Uganda

The article is very instrumental in guiding alignment of resources in the health system. The rationale is partly stated because does not include policy formulation and planning in the health sector.

The Public Choice theory is relevant in analyzing the Public Finance Management in Health Sector but was excluded. The theory illuminates the roles of key stakeholders in the private and public spheres in managing public resources.

Are the rationale for, and objectives of, the Systematic Review clearly stated?

Partly

Are sufficient details of the methods and analysis provided to allow replication by others?

Yes

Is the statistical analysis and its interpretation appropriate?

Not applicable

Are the conclusions drawn adequately supported by the results presented in the review?

Yes

If this is a Living Systematic Review, is the 'living' method appropriate and is the search schedule clearly defined and justified? ('Living Systematic Review' or a variation of this term should be included in the title.)

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Finance and Accounting

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.
