**Table 2**: Characteristics of the studies included in the review

| **Citation** | **Geographic focus** | **Objective/ study description** | **Medicine pricing policy studied** | **Implementation of medicine pricing policies** | | | **Key influencers on implementation** | | **Policy effects** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Approaches** | **Actors** | **Use of evidence** | **Facilitators** | **Barriers** | **Effect on prices of medicines** | **Effect on access to essential medicines** |
| Ali and Yahia, 2012 (52) | Sudan | To compare national pricing with retail prices, adherence of prices, comparison of generic medicine pricing, demonstrate violations and put forward recommendations | Pharmacy and Poisons Act (2001) | Regulation of pharmaceutical prices using the current fixed mark-ups of 15% and 20% of the total cost for wholesalers and retailers respectively. | Wholesalers, National Medicines and Poisons Board, manufacturers, and retailers | N/A | N/A | -Shortage of trained personnel and resources to assess cost and freight (C&F) prices  -Lack of scrutiny on medicine pricing information by regulators  -No pricing control, e.g., medicine prices of certain generics higher than their originators. | -23% of C&F prices approved by NMPB were over 10 times the International Reference Price.  -The wholesale and retail prices were 40% and 47% less than that approved by NMPB respectively.  - 11 out of 12 originator medicines was ≥ their retail prices published in the British National Formulary.  - Prices distributed by Central Medical Supplies was 2-fold their C&F price | N/A |
| Ali, 2009. (55) | Sudan | To evaluate the Revolving Drug Fund (RDF) effect on accessibility of essential medicines and its impact on the utilization of public health services | Revolving Drug Fund | N/A | Ministry of Health  Save the Children (UK) | N/A | Initial funding support from donors | N/A | -Cost of RDF prescription was perceived as affordable by users with improved quality compared to previously free medicines.  -Medicines for chronic diseases were considered expensive  -Patients in non-RDF facilities spent more than those in RDF facilities, with 67% able to afford their medicines and 8% discontinued due to cost. | RDF facilities had increased access to essential medicines, with 97% availability during the past 12 months. |
| Ashigbie, et al., 2016. (64) | Ghana | To examine medicines managements policies under Ghana's NHIS, from perspectives of public and private sector providers. | Reimbursement of medicines to health facilities | Reimbursement for cost to private and public health facilities | -Public and private health facilities  -Pharmacies  -Licenced chemical shops  - Christian Health Association of Ghana Facilities | N/A | An essential medicines list facilitates reclaim costs of a wide range of medicines | -Lack of standardization of mark ups (25-50%) and high market prices of medicines  -Reimbursement delays | -Lower prices at CMS does not apply in pricing in retail pharmacy  -The current pricing system, in both public and private sectors, is of limited benefit in controlling escalating medicine prices. | Patients may not have access to medicine because not all facilities participate in the scheme and not all medicines are captured in the NHIS reimbursable list |
| Assefa, et al 2017. (36) | Egypt, DRC, Nigeria, Ethiopia, Cameroon, Rwanda and South Africa | This paper analyses the implications of Gilead’s tiered pricing and voluntary licencing strategy for access to the DAAs | Tiered pricing and voluntary licencing and generics; Public -Private Partnership | N/A | -Pharmaceutical company  -Gilead Sciences | N/A | N/A | Varied prevalence of Hepatitis C Virus affected uniform pricing of DAA across countries | -Cost of 12 weeks generic DAA was $684-$750 compared to the originator price $1200. Generics were 40% cheaper than the originator | N/A |
| Bangalee and Suleman, 2016. (37) | South Africa | To examine cardiovascular originator and generic drug prices using international reference prices | Generics and Single Exit Price (SEP) legislation | Manufacturers could sell their medicines at uniform prices | N/A | N/A | Prices lowered based on market availability | N/A | -The SEP policy has not resulted in competitive prices  - 75% of generic drugs were 40% or more cheaper than the branded ones. | N/A |
| Bangalee, and Suleman, 2019. (38) | South Africa | To compare prices among originator, pseudo-generics and generics. | Generic medicines and SEP | SEP mandates manufacturers to sell at a uniform price | N/A | N/A | N/A | -Lack of prices regulation  -Established relationship for originator companies creating challenges for generic manufacturers | N/A | N/A |
| Cassar and Suleman, 2019. (46) | South Africa | To assess whether international benchmarking of medicines (IBM) with comparator countries would lower medicine prices locally. | External reference pricing (ERP) (61) policy | SEP aimed to regulate, pricing, remove rebates and discounts | -Pricing Committee  -National Department of Health | N/A | N/A | -The use of ERP does not adopt a multidimensional approach.  -Emergence of negotiated confidential discounts. | Ex-manufacturer price reduced by 68%, 85% and 85% of products in 2016, 2017 and 2018 respectively. | N/A |
| Cohen et al 2013 (51) | Tanzania | To assess the first 1.5 years of Affordable Medicines Facility for malaria (AMFm) use in Tanzania. | N/A | N/A | N/A | N/A | Awareness campaigns | People not being aware that Artemisinin Combination Therapies (ACTs) were a better treatment option | N/A | ACT use from round 1 to 3 increased |
| d'Almeida, et al, 2011. (39) | Cameroon | The study presents lessons learnt from provisions of second line treatments for HIV and AIDS. | Free medicines | Free second-line treatments for HIV/AIDs | National Council for the Fight Against HIV/AIDS, National Direction to Fight Diseases, Provincial Centers for Treatment | N/A | Free second line treatment facilitated by external funding | -Lack of integrated information systems on HIV/AIDS patients  -Deficiencies in the supply chain/logistics for 2nd line treatments. | N/A | Problems led to very limited number of patients getting 2nd line treatments. |
| de Jager and Suleman, 2019. (56) | South Africa | To determine the impact of generics and generic reference pricing on candesartan and rosuvastatin. | Generics and reference pricing | N/A | Government, Pricing Committee, Pharmacists, Pharmaceutical Society of South Africa and Retailers | N/A | N/A | A small number of generics manufacturers in South Africa. | Average price reductions range from 13.9 to 31.0% for rosuvastatin and candesartan, respectively. | Utilization of rosuvastatin increased from 24.0% to 63.9% and then 76.4% following the introduction of the generic reference pricing |
| Fink, et al 2014. (57) | Uganda | To determine the effect of AMFm on the use of ACTs | Affordable Medicines Facility for Malaria | N/A | -Global Fund  -UNITAID,  -Gates Foundation | N/A | N/A | -Public sector stock outs, high prices in drug shops and pharmacies.  -Limited geographic coverage | AMFm benchmark was achieved even prior to the arrival of the program and sustained throughout | -ACT increased from 51% to 68%  -More shops stocked ACTs, leading to 52% AMFm |
| Guimier, et al 2005. (58) | Senegal | To highlight differences between the price of drugs in Senegal and the population’s ability to pay for them | Reimbursement policy | Reimbursement of medicines in the public sector | Private and public pharmacies, wholesalers, Manufacturers, laboratories, distributors | N/A | N/A | N/A | -The components of the public price vary only slightly between the four categories of medicines: taxes (1.3%-1.4%), freight, insurance and local transit (5%-6%), distribution margins (40%-48%) and PGHT (46%-54%). | Only 5% of patients had not taken their prescribed drugs for financial reasons |
| Honda and Hanson, 2013.(59) | Madagascar | To assess the outcomes of the equity funds in Madagascar from three perspectives. | Pooled procurement & user fees: equity fund | Community participatory approach | Government and Community representatives | N/A | Knowledge of implementation status | Financial and geographical constraints accessing health centre | Out of pocket payments lower for members than non-members | Equity fund members have increased access to the public health facility |
| Liu and Galárraga 2017. (40) | Angola, Botswana, DRC, Lesotho, Malawi, Zambia Mozambique, Namibia, South Africa, Swaziland, Tanzania and Zimbabwe. | This study aims to (i) analyse global ARV prices from 2004 to 2013 and (ii) examine the relationship of national drug policies to ARV prices. | -Essential medicines list  -National or social health insurance  -Procurement strategy | N/A | N/A | N/A | -Transaction volume  -HIV prevalence | N/A | -Generic status 8/10 ARVs had lower prices than originator  -All six first-line ARV drug unit prices decreased over time, from a 46% price decrease for Lamivudine to 90% price decrease for Efavirenz | N/A |
| Maiga, et al, 2010. (53) | Mali | To analyse the role of government intervention and market forces in price regulation, private sector pricing of essential medicines and pricing process in Mali's private pharmaceutical sector | Government Price regulation policy | Set up a commission, price ceilings, monitoring and evaluation system and define working methodology for access to medicines. | Managers,  pharmaceutical companies,  employers' council, Union workers and pharmacy professionals | N/A | High involvement of private and public sector stakeholders | Disagreement between the public and private sector | Estimated 25% theoretical reduction on the basket of 107 medicine | N/A |
| Maïga, and Williams-Jones 2010. (60) | Mali | To assess the impact of the national pharmaceutical policy on supply system for generic essential medicines. | Generic essential medicines | N/A | -Government  -private and public healthcare sectors | N/A | Education and creating awareness | N/A | The median wholesale price of the 49 drugs was 14.3% and 25.6% cheaper than the maximum price in 2006 and 2009 respectively. | The availability was judged to be the same before and after the policy. |
| Maı̈ga, et al, 2003. (67) | Mali | To study cost recovery and generics policies. | Cost recovery and generics | N/A | N/A | N/A | N/A | N/A | Costs of prescriptions were lower where public health facilities had been revitalised | Access to drugs was improved, affordable generics were widely available, even in private outlets. |
| Moodley, R. and Suleman, F., 2019. (41) | South Africa | To evaluate the impact of SEP on a basket of originator medicines, in terms of costs, and impact on prices. | Single Exit Price policy | N/A | N/A | N/A | N/A | N/A | Upon introduction of the intervention the medicines showed an immediate drop in price with a subsequent rate of increase being much less than before. | N/A |
| Moodley, R. and Suleman, F., 2019. (42) | South Africa | To examine the impact of the regulatory change, the SEP, on a basket of generic medicines from 1999–2014. | Single Exit Price policy on generics prices | N/A | -Manufacturers  -Pricing committee  -Ministry of health | N/A | N/A | N/A | The SEP had a larger effect on generics pricing than originator. Most medicines showed a smaller yearly increase in price compared to before regulations. | N/A |
| Nicolosi, E. and Gray, A., 2009. (43) | South Africa | To assess the potential savings by substituting generics for brand. | Generic medicines policy | N/A | N/A | N/A | N/A | N/A | 67.5% were more than 40% cheaper than branded medicines. All generics were priced lower. | N/A |
| Ongarora, et al 2019. (54) | Kenya | To assess retail pricing, availability, and affordability of medicines in private facilities | Generic medicines Policy | N/A | N/A | N/A | N/A | The lack of regulation of prices | Clients paid higher prices than the median IRPs for 68.6% of generic medicines selected. | N/A |
| Ponsar, et al., 2011. (61) | Mali | To assess the impact of abolishing user fees on utilization of essential health services and mortality. | Subsidized/free medicines for malaria treatment | N/A | -MSF (Doctors Without Borders)  -Health centres  -Ministry of Health | N/A | Free provision medicines | Payment of user fees | Savings in drugs reduced the overall consultations cost | Utilisation of healthcare increased fourfold for under 5s, by the end of the period 3.5 x more pregnant women were being treated for fever. |
| Rothberg, et al 2004. (44) | South Africa | To measure the impact of reference-pricing programme covering items for available generic equivalents | Reference pricing for generic medicines | N/A | -Medscheme's Medicines Management  -Interpharm teams  -Government | N/A | Willingness of some manufacturers to drop prices | Low enrolment into the program | Price movement for eligible products for the 12-month period showed that 19.6% of products dropped prices, 16.8% increased by up to 10%, 19.5% by 11 - 15%, 7.8% by 16 - 50%, 1.7% up to 100% and 1.0% by more than 100%. | N/A |
| Sabot, et al 2009. (62) | Tanzania | To evaluate the extent to which patients use recommended ACTs and its implications for AMFm implementation. | Affordable Medicines Facility- malaria | N/A | Wholesalers and retailers | N/A | -Popularity of designated retail outlets  -Global policy and funding | -Cost is still a barrier for poorer customers.  -Stock-outs and challenges with the supply chain. | Consumers purchasing ACTs for children under 5 paid significantly less than those buying for adults | Increase in the proportion of shops stocking ACTs in the intervention districts, from 0/133 in August 2007 to 109/151 (72.2%) in August 2008 |
| Smith, et al 2011. (63) | Kenya | To measure accessibility, availability, and affordability of ACT | Affordable Medicines Facility-malaria | N/A | Government  Global Fund | N/A | -Proximity to and  flexible business hours of retail facilities | -Most of the drug outlets were unlicenced  -Frequent stock-outs in public facilities | Brands purchased under the AMFm programme cost 40% less than non-AMFm brands. | Increased access for those buying drugs at weekends from private outlets. |
| Steyn, et al 2007. (45) | South Africa | To determine the influence of implementing SEP on the prescribing prevalence and cost of antidiabetic medicine. | Reference-based pricing system (single exit price). | N/A | -Manufacturers  -Wholesalers,  - Retailers  -Government | N/A | 1997 Medicine and Related Substances Amendment Act | N/A | The average cost of antidiabetic medicine on the database decreased from the pre-SEP period and interim period in the post-SEP period. | Prescribing frequency of antidiabetic medicine showed an increase |
| Tougher, et al 2014. (49) | Ghana, Kenya, Madagascar, Niger, Nigeria, Tanzania | To examine the potential for further reductions in the prices of subsidized medicines | Affordable Medicines Facility – malaria (AMFm) | N/A | N/A | N/A | -Already existing ACT subsidy policy.  -Accessibility of private retail facilities. | Lack of standardized mark-ups for retail pharmacy | Prices reduced in most countries | N/A |
| Tran et al 2020. (66) | Kenya | To describes how the evolution of the RFP programme increased access to essential CVD medications for patients  across different levels of the public sector healthcare  system in western Kenya. | Revolving  fund pharmacy model | donations or purchase sold at a  small mark-up price sufficient to replenish drug stock and ensure sustainability | Kenya  MOH  health facilities [community), level 2 (health dispensaries), level  3 (health centres), level 4 (subcounty hospitals), level 5  (county hospitals), to level 6 (tertiary referral hospitals)]  , | N/A | Kenya MOH, local leadership and facility administrators’ effort to integrate CVD and diabetes clinical services as well as essential medications into the lower primary care-level facilities.  Creation of local adoption mechanisms  Early engagement of key stakeholders  developing affordable patient copays, waivers and accountability mechanisms through inventory, financial and accounting systems | Transportation costs to health facilities, opportunity cost of missed work  and distance from health facilities.  significant operating costs associated with running the pharmacies including staff, copay waivers, supervisory audits and transportation of medicines and supervisors  patient volumes at each of these lower-level facilities were not sufficient to sustain a full RFP  clinical officers or nurses were too overwhelmed to dispense and maintain the inventory of RFP medicines | N/A | the availability of essential medicines improved from an average of 30%–40% to >90%.18 In the period of the current analysis (2018), this model was run in 15 facilities within the AMPATH catchment area.  Most tracer medicines were present 94%–100% of the time at health facilities across levels 2–6 ( The availability of insulin (Humulin 70/30) at levels 5 and 6 were 97% and 100%, respectively, and 81%–85% at levels 2–4)  An increase in the availability of generic CVD medications from the historical 30% or less to 90% or higher across all levels of the health system |
| Walwyn and Nkolele, 2018. (47) | South Africa | To evaluate whether private public partnership (PPP) of the Biovac Institute provided value for money for vaccine procurement and distribution over the period 2010-2016. | Public–private partnership (PPP) policy for vaccine procurement and distribution | N/A | National Treasury, Department of Health, Technology Innovation Agency, Industrial Development Corporation, Departments of Science & Technology and Trade & Industry | N/A | -Uninterrupted / reliable supply chain  -Political support for PPP | Slow establishment of a vaccine manufacturing centre  Forex fluctuation (depreciation of the local currency | Biovac Institute has been successful in containing the cost of procurement for the EPI vaccines, and that this competence has been strengthened over the period of this study.  The margin averaged at approximately 13%, corresponding to a total value of US$85.7 million over the period of the evaluation or about US$17million per year. | No interruption in the supply of vaccines to any location in the country |
| Wiedenmayer, 2019. (50) | Tanzania | To develop a successful pilot of a Prime Vendor system with the potential for national scale-up. | Jazia prime vendor system (public-private partnership) | Engaging one private sector pharmaceutical supplier as the Prime Vendor to provide the complementary medicines needed by public health facilities in Tanzania. | -Private sector  -Government  -Medical Stores Department  -Health facilities  -National Coordination Committee | N/A | -Partnership with private sector  -Culture of transparency and accountability  -Regional leadership | Delayed payment by the districts for their PV consignments (up to 90 days) | N/A | Tracer medicines availability in the region (mean availability of all districts) increased from 69% in 2014 to 94% in 2018 |
| Wilson, 2012. (65) | Tanzania | To assess the manufacturing capacity to produce ARVs locally | Generics and domestic production policy (TRIPS and Doha Declaration) | N/A | Tanzania Pharmaceutical Industries  Government | N/A | Existing international polices supporting domestic production of drugs | -Lack of a coherent policy strategy for the development of its pharmaceuticals industry  -Weak patent enforcement  -High costs of importing supplies | N/A | N/A |
| Ye, 2015.(48) | Ghana and Kenya | To assess the availability, price and market share of quality-assured artemisinin-based combination therapy in remote areas compared with non-remote areas at end-line of the AMFm intervention | Affordable Medicines Facility – malaria | N/A | -Government  -Global Fund | N/A | -Available funding to subsidize the drugs on a global level,  -Reliable distribution systems  -Community awareness | Remoteness of private outlets | -In Ghana the prices in remote and non-remote areas did not differ public health facilities  -In Kenya, private for-profit outlets in remote areas were selling QAACT at nearly twice the price as in non-remote areas | Medicines were available in both Kenya and Ghana. |

**Note:** NA (Not Applicable)