Providing affordable essential medicines to African households: The missing policies and institutions for price containment

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Abstract

Medicines are integral of any healthcare system, and limited access to medicines undermines health systems' objectives of equity, efficiency and health development. In African countries, where it is estimated that 50–60\% of the populace lack “access” to essential medicines, health problems associated with limited drug benefits are more damaging. However, there is no single solution to medicine access problem given its multiple dimensions: availability, acceptability, affordability and accessibility. This paper explores affordability dimension of medicine access and concentrates solely on price regulatory policies and institutional structures that national and international policy makers may consider in making prices of essential drugs compatible to the purchasing power of African households. The main theme is the application of the concept of bilateral dependence in creating price-sensitive purchasers to exert countervailing market power on drug price setting in African healthcare systems.

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Introduction

Medicines are integral to any healthcare system and limited access to medicines undermines health systems’ objectives of equity, efficiency and better health. Effective medicines exist for the illnesses making up the greatest section of disease burden in African nations, and it is without question that access to essential medicines reduces disease burden. Access to medicines provides a proxy indicator of health systems’ performance and healthcare systems with limited access to medicines do report lower health levels measured in disability adjusted life expectancy (WHO, 2004a). According to the World Bank (1994) up to 60\% of people in sub-Saharan Africa do not have access to the drugs they need. According to the WHO (2004b), in the poorest parts of Africa and Asia, the figures revolve around 50\%. These aggregate indicators hide “in-country” situations, which may or may not be worse than suggested by these figures.

Whereas pharmaceuticals account for 10–20\% of health expenditures in developed countries, in developing nations the figure ranges between 20\% and 60\%, due to a disproportionate reliance on importation for drug supplies, the relatively lower health labour costs and regulation lax that allows prescription only medicines to be acquired without written prescriptions (WHO, 2004a; World Bank, 2004b).
Pharmaceuticals, compared to other healthcare inputs, contribute more to production of healthcare and drug expenditures tend to exhibit relatively lower elasticities to national income per capita than health expenditures. For example, medicines consumption in developed nations averages 0.95% of GDP and 0.67% in developing countries (Schweitzer, 1997). This means that the poorer a country is, the larger the share of drug expenditures of national health budgets. Also in developed nations over 70% of drugs are public funded or reimbursed, whereas in African nations 50–90% of pharmaceutical purchases are funded by out-of-pocket expenditures, a feature encouraged by reliance on user charges as means of financing (World bank, 1994). Bar salaries, drug expenditures dominate health expenditures in African nations. However, country-level aggregations of drug expenditures might be misleading indicators of opportunity costs. According to Barnett, Creese, and Ayivor (1982), whilst drugs account for one-third of total healthcare expenditures in Ghana, drugs purchases accounted for 75–80% of running costs of primary healthcare centers.

The high pharmaceuticals proportion of healthcare budgets and household incomes in African nations has not translated into wider drug access and better health. The policy problem is thus reconciling drug expenditures (as proportion of health expenditures and GDP) with expanded access. “Access to medicines” has no clear definition, yet it can be considered as collection of different dimensions: accessibility referring to health services coverage; affordability which relates to prices and volumes of consumption; acceptability which refers to quality, safety and efficacy; and availability which relates to drug production, procurement and distribution. The various dimensions, derived from interlocking principal–agency relationships in drug markets, underscore the need for differentiated, yet simultaneously operating medicine access policies (WHO, 2004b).

This paper aims to highlight in-country strategies for drug price containment and regulation: a subset of the affordability dimension. The strategies, whilst centred mostly on public sectors, apply very well to private and not-for-profit sectors in African healthcare systems. The paper draws on pharmaceutical economics theory and international policy practice from both peer-reviewed publications and non-peer reviewed “technical reports”. Since the focus here is on in-country strategies, the paper does not consider policies linked to intellectual property rights under world trade agreements and global initiatives for neglected diseases affecting mostly developing countries.

Price regulation

It is well documented that drug prices create “affordability” barriers and healthcare payers, and as such governments and non-governmental agencies in African nations must consider some form of price regulation to avoid stretching what are already inadequate drug finances. Price regulation policy can be broadly classified into unconstrained free pricing, constrained free pricing and price controls. Price controls are statutorily mandated and designed to fix unit prices of drugs, patented or off-patent generics. The rationale for price controls is failure of market discipline to operate in drug markets. For African countries where drug expenditures are mainly out-of-the-pocket, price controls set at retail level appear to be the best approach. These retail prices may be printed on packages for drugs as it is done in India and Pakistan (Enemark, Alban, & Vazquez, 2004). However, price controls represents conflicts with free market policies (linked to structural adjustments requirements) adopted in African countries. Further, the large health funding systems in developed nations that provide compensatory economic demand to make drug price controls acceptable to suppliers are not present in most African nations.

As a result, widespread applications of price controls in African countries, especially where prices are fixed at very low levels, may incite producers and suppliers to restrict supplies and encourage emergence of black markets and hinder growth of generic markets (Grace, 2003). One way out of these negatives is to structure price controls as voluntary contracts with drug suppliers, which inevitably means price negotiations at the time of product launch and market entry. On the other hand, price negotiations before or at market entry and drug product launch may be characterized by delays in diffusion of drugs (above that associated with regulation of quality, safety and efficacy) and foregone pharmaceutical benefits for consumers. In contrast to price controls, free pricing at market entry accommodates market liberalization policy. Yet, liberalization of domestic markets is not the only reason for the absence of price controls. The higher organizational costs associated with price...
controls and the low capacity for price data collection exercises to monitor, and enforce price regulations, for a wide range of products in different strengths, forms and delivery systems undermines the “feasibility” of price controls (Madrid, Velasquez, & Fefer, 1998). Given significant operating costs associated with price controls, it is no surprise 50% of low-income countries (including African countries) have any price regulatory policies in place (WHO, 2004a). The outcome is unconstrained free pricing in African countries. At global-market prices, high expenditures from unconstrained free pricing cannot be afforded by an African country, which means reduced access to pharmaceutical benefits. The current state of affairs ignores the regulatory option of constrained free pricing.

In search for strategies for constraining elevated drug expenditures from free pricing, one can turn to activities of pharmaceutical benefit managers (PBMs) who operate in an environment of free market pricing in the US where bargaining, price competition and price discrimination is used for market discipline. PBMs act as price-sensitive intermediaries between suppliers, health providers and payers to reduce expenditures. PBMs define, a priori, through pharmacy and therapeutics committee, products to be used by a network of health service providers via formularies of preferred drugs (from close substitutes) and subjecting non-formulary products to prior authorization hurdles. Listing of “preferred” medicines from preferred suppliers on selective formularies and the use of prior authorization hurdles empowers PBMs to negotiate incremental discounts since suppliers of approved products gain increased business volumes and market shares relative to unlisted products. Through a network of physician practices and health provider institutions and contracted retail pharmacies, i.e., consolidated demand, PBMs “channel” prescribing and consumption in favour of preferred price-discounted products. This incremental price discounting is encouraged by competition for consolidated demand between generic and therapeutic substitutes in any drug class. PBMs, in addition, engage in absolute volume discounts negotiations through the economies-of-scale of purchasing large pack sizes and bulk volumes of drugs. Another absolute (volume) discounting system adopted by PBMs is price-volume contracting where drug suppliers pay ex-post discounts and rebates once pre-specified volume sales for preferred drugs are met. PBMs further adopt portfolio discounting (bundling) where higher prices of a set of products are accepted or listed on formularies in exchange for larger discounts on other listed products in any given suppliers’ portfolio. Other business practices include discounts on retail pharmacies’ profit margins as well as “prompt pay” discounts. It is thought bargaining power of PBMs lies more with their price sensitivity to influence market shares of drugs by channeling prescribing and consumption [consolidated demand] to preferred products within any class of therapeutic and generic substitutes. PBMs in the US hence can credibly apply bargaining “threats” to shift or withhold business volumes from higher priced products (Danzon, 1997, 1999).

Grabowski and Mullins (1997) estimates PBMs achieve 14–31% annual cost savings on health plans expenditures relative to unmanaged plans; of which 6–10% of savings are due to generic substitution policies and 5–15% is due to formularies and formulary “compliance” measures. PBMs instituted for the Blue Cross-Blue Shield Association [one of three health plans of the US Federal Employee Health Benefit Program] are estimated to reduce total costs (price-by-volume) by 20–27% relative to projected costs without the PBMs. More than 70% of savings were due to discounts from manufacturers’ prices and retail distribution markups (US General Accounting Office, 1997). Business activities of PBMs (in essence, application of managed competition principles) are nevertheless derived from, and consistent with economic theory.

Pricing in drug markets fits standard economic models: monopoly, monopolistic competition, (differentiated) oligopoly, monopsony and perfect competition; with the economic models not necessarily being mutually exclusive (Schweitzer, 1997). One model (less cited) characterizes markets as having bilateral monopoly structures. Both buyers and sellers behave as imperfect competitors with some control over price and price is an indeterminate outturn of bargaining between a monopolist (oligopolist) and monopsonist (oligopsonist). Monopsony (oligopsony), i.e., buyer concentrations present the countervailing power to offset market power exercised by monopolists (oligopolists). Indeterminacy suggests buyer concentrations are necessary but not sufficient for negotiating discounts. This should not be a problem as long as bargaining is guided by price competition and price discrimination. In imperfect competitive markets, price increases induces purchasers with highly
elastic demands to shift purchases unto a competing product. “Manufacturers have an incentive to cut price if demand is elastic [that is, the price cut generates at least an equiproportionate increase in volume]” (Danzon, 1997). Similarly, in bargaining situations, purchasers’ ability to “credibly threaten” to take business elsewhere and move and shift products or providers’ market share is critical to negotiating power. 

Sorensen (2003) econometric modelling of insurer (purchaser)–hospital (provider) bargaining indicates purchaser size does affect discount magnitudes but economic significance is small. More important is ability and willingness of purchasers to “move market share”. This pattern of discounting is consistent with bilateral negotiation in other markets with small number of buyers and sellers, where bargaining is based on the ability to “channel” demand to preferred suppliers. See further Ellison and Snyder (2001) for econometric estimation of effects of pro-competitive countervailing power on price growth in antibiotic wholesale markets. Bargaining based on moving market share is also consistent with economic theory of price discrimination (Ramsey pricing), which suggests buyers who are least sensitive to prices (relatively inelastic demands) pay more. Purchasers who are able to switch demand among suppliers, according to price, pay less than purchasers who cannot switch demand (Schweitzer, 1997). This author defines such a pro-competitive “bilateral monopoly” market structure as bilateral dependence [a phrase borrowed from Grace (2003)]. A “bilateral monopoly” market structure creates sticky relationships between suppliers and buyers in a way that makes suppliers’ sales volume and business returns dependent on price sensitivity and market power of buyers. The opposite is where oligopoly is predominant and suppliers sell medicines at whatever price the market can bear when left to its own workings. This is the case of unilateral dependence described by Grace (2003), in which price levels are constrained by only the discretions of drug suppliers. The indeterminate nature of “bilateral monopoly”, however, means variations in discounts is likely to be non-linear and reflect how “aggressive” buyers are in bargaining for discounts. The bilateral dependence solution differ from price discrimination propagated by international agencies in which attempts are made to ensure price concessions for low-income countries are “ordered”, structured and linear employing pre-defined criteria such as cost-plus frameworks, disease burden, GDP or UNDP’s human development index (Danzon & Towse, 2003).

The bilateral dependence solution is consistent with evidence that demand conditions rather than costs of R&D investment drive prices. The alternative hypothesis that prices determines demand correlates with the unilateral dependence scenario (Schweitzer, 1997). There are no reasons to suggest African countries are different and cannot exercise bargaining clout with appropriate institutional structures. With fragmented healthcare systems and no price-sensitive intermediaries, it is not “horribly” surprising African countries hardly secured price discounts on patented or generic products. Because the bilateral dependence solution is linked to price discrimination theory, it requires market segmentations to prevent spillovers and unraveling of discriminatory prices. Danzon and Towse (2003) suggest the need for confidential bilateral contracting as the means of market segmentation. An alternative to market segmentations that has received much attention in medicine access advocacy for African households is drug product differentiation (labeling and packaging) and geographical segmentation of markets. These approaches, however, are associated with huge practical implementation and political difficulties.

PBMs in the US contain prices through confidential, proprietary or concealed trade discounts and the rationale lies in the pro-competitive effects of confidential contracts (without product differentiation and geographical segmentation of markets, be it between countries or within countries). In contrast to concealed trade discounts, publishing discounted prices can promote collusion, as drug firms will seek to beat published prices rather than offer the lowest possible prices. Meaning even where “open” tenders are organized, drug suppliers should be asked to submit “sealed” price bids. Further, publishing discounted prices allows their use in external price referencing and arbitrage in parallel importing, which erodes market segmentations and potentially dampens the willingness of drug suppliers to offer steep price discounts. Another problem is social and political malcontent with higher drug prices in high-income countries when steep discounted drug prices are observable elsewhere. Scherer (2004) defines this as the “subsidy myth” and advocates for extensive informative and educational campaigns. Even then, where discounted prices are publicly disclosed, and the “subsidy myth” surmounted, a typical response by
Evidence on the effects of price transparency suggests discounting is more competitive where discounts are not disclosed and market segmentation is maintained (Danzon & Towe, 2003; Ridley, 2005). Augmentation of reference pricing in New Zealand with “cross-therapeutic” deals (portfolio discounting) did not yield expected market outcomes. Major global firms did not follow downward adjustments in prices. According to Woodfield (2001), this may reflect suppliers’ concerns that lower prices in “small” country markets will become benchmarks in large markets. For small country markets (in terms of volume and value of sales), confidential bilateral contracts are critical to overcome the issues highlighted above. A “delicate balance” between transparency, accountability and pro-competitive effects of confidential contracts is unavoidable; given the steep discounts needed [supposedly ≥80%] to make drugs affordable to African households (Scherer, 2004).

As described by Danzon (1998), the general structure of discounting programs can be made public (to satisfy transparency and accountability) whilst keeping contract details especially prices confidential. One alternative is publishing “relative” prices and not actual discounted prices with products on publicly disclosed price lists marked with an asterisk; more asterisks indicating an expensive product (Danzon, 1998). Another approach is to publish discounted prices in lagged times. That is, discounted prices at time period \( t_2 \) are kept confidential whilst discounts in periods \( t_0 \) and \( t_1 \) are made public. Discounted prices will then only be published following negotiation of steeper discounts. Yet, another way is to define discounting contracts as “bonusing”, i.e., discounts are tacitly made public as quantities purchased at undiscounted list prices plus zero-priced quantities as bonuses. It is worth noting the benefits of confidential contracts lie in price discounts being delivered directly to purchasers at the end of the line of transactions. This may not be the case under cost recovery schemes where patients pay part or the entire price of drugs. There is danger confidential discounts may be revealed or inferred from user charges. African policy makers may consider officially expressing user charges as a percentage of publicly listed prices with the deficit, presumably, covered up by government subsidies and taxes. Out of the tools for confidentiality, publishing price discounts in lagged times appears to be most transparent. For accountability, aggregated confidential discounts on all drugs purchased (i.e., overall savings made) should be publicly disclosed. This will assure the public that price-sensitive purchasers are securing pecuniary benefits on their behalf.

Considering half of households lie below poverty thresholds, African nations cannot continue to miss and squander opportunities for securing affordable drugs. Though African countries, compared to more affluent nations, receive lower drug prices, the real costs of drugs relative to their purchasing power are high (using GDP as proxy). With drugs consuming a substantial part of health expenditures, this imposes constraints on the delivery of other health services and public health interventions. Having developed the microeconomic principles underlying the bilateral dependence concept, the next difficulty is identifying institutional arrangements to exert the solution (i.e., application of economic principles will not yield welfare benefits in a vacuum). This author recognises existing public procurement agencies in African countries as appropriate platforms for implementing the bilateral dependence solution; who will act as price-sensitive intermediaries between health financers and health providers. Nevertheless, the bilateral dependence solution can be instituted by any group-purchasing agency in any health financing (revenue mobilisation) system since it is a resource allocation and purchasing tool to make the best use of resources and revenues mobilised.

By specifying procurement rules regulated by underlying economic principles of the bilateral dependence concept, the precise evolution of price-sensitive procurement agencies in African countries will depend on interactions of economic theory with past history, traditions, politics, social values and cultural norms in respective countries. Obviously, outcomes of the bilateral dependence solution may vary across African nations; but then the same things can be said of any reform proposal designed on extrapolations of macro- and microeconomic behaviour.

Cost-containing procurement

With low-national incomes, procurement agencies in African countries cannot be price takers as global medicine prices, most likely, will fall out of
their purchasing power; nor can they be passive in product selection decisions. Velasquez, Correa, and Weissman (2003) define a three-pronged strategy: (a) national and international competitive bidding; (b) price discounting and (c) bulk purchasing as the basis of cost-containing procurement. The proposals advocated by this paper build on the mix of purchasing methods suggested by Velasquez et al. (2003).

Competitive bidding for generic and therapeutic drug substitutes is a classic measure aimed at encouraging more suppliers to enter any country’s markets; thereby expanding suppliers’ base and creating price competition among multi-source products. Therefore, for effective supplier competition, it is crucial all pre-qualified and qualified suppliers are aware of and invited to the bidding process. Notwithstanding, generic bidding can be laborious and time consuming, especially international competitive bidding (ICB). African countries may consider restricting the use of ICB, for example, in situations where there are not enough competing pre-qualified suppliers on the domestic market in any therapeutic class. Generics tendering is no different from generic competition policy. Yet, it is not emphasized in existing literature that bidding for generics must be backed by generic policies operating in “downstream” health facilities.

Downstream policies (see Fig. 1) are needed for increased professional utilization and public acceptance of tendered generics, making generic market entry and penetration less costly and encouraging price wars. Given a very narrow segment of essential drugs lists contain patented products; generic tendering/competition on its own can provide African countries substantial affordability benefits (WHO, 2004a). Price discounting is considered to be the most suited procurement strategy for patented drugs: tendering for multi-source products can be regarded as equivalent of discounting for generics. However, price discounting for patented drugs by near monopoly suppliers will tend to be for a limited time period and static, unless prices are renegotiated frequently (Velasquez et al., 2003). Buyers realize lower discounts when faced with monopoly suppliers; discounts tend to increase as one move from monopoly suppliers to competitive market structures (Ellison & Snyder, 2001).

Nevertheless, price discounting for monopoly products need not be static given scope for (a) portfolio discounting [bundling or cross-therapeutic deals] and (b) price competition between on-patent therapeutic substitutes. Bundling is feasible given there will be alternate distributors of patented products from innovators and innovators themselves having generic products in their portfolios. It is reasonable to expect suppliers will provide steeper discounts on “older” generic drugs rather than accept discounts on innovator drugs facing limited competition and hence expected to gain significant business volumes and market shares. For instance, under New Zealand’s cross-therapeutic arrangements, higher prices of atorvastatin (an HMG-CoA reductase inhibitor) was allowed in return for 60% reduction in price of quinapril (an ACE inhibitor); both drugs made by Parke–Davis (Woodfield, 2001). The financial risks on overall portfolio returns introduced by bundling/cross-therapeutic contracts serve to check monopoly (sole) suppliers from rent seeking.

Both competitive bidding and discounting requires procurement agencies to have ready access to price information. Procurement agencies must make efforts to increase their knowledge of domestic and global pharmaceutical markets to reduce price information asymmetries and ignorance. What appears as a fairly simple issue of accessing

![Fig. 1. Components of generic competition policy.](image-url)
pharmaceutical price data and engaging in market surveillance is a major determinant of ability to extract price concessions. WHO, UNICEF, Management Sciences for Health and International Dispensary Association provide numerous price information sources in addition to methodologies for reference pricing (average and international price comparisons) to address information imbalances. The external reference pricing systems are in this case not used for fixing drug prices but rather to generate price data for discounts negotiations. The price data gathered (with or without drug distribution costs, taxes, duties, etc.) would be used to define target price ceilings on which to initiate competitive bidding and discounting negotiations.

Considerable attention must be given to periods of negotiated discounts contracts, especially bundling, and market entry of generic and therapeutic substitutes to avoid contractual hold-up problems over time period where lower prices can be achieved through competitive tendering or falling global prices. One way out of contractural hold-up problems is to sign annual supply contracts and if longer-term supply contracts are desired, this can be “flexible” as a number of annual contracts. A 6-year supply contract will, in reality, be renegotiated annual contracts over a 6-year period with contract extensions offered as long as preferred suppliers maintain their “best-discounted price status”. Furthermore, restrictive terms by suppliers including full-line forcing, tying-in-sales and exclusive-dealer contracts designed implicitly or explicitly to impede therapeutic and generic competition must be avoided (Velasquez et al., 2003).

It is important for purchasers to avoid fixing floors for bidding price and discounts, which if not achieved, often leads to abandoned procurement bids and discounting negotiations, as it was done in Mexico. Fixing floors for price discounts or bid prices is not necessary given the possibilities for repeated negotiations and dynamic competition in global markets. Further, bidding times need to be properly scheduled; for instance, a 4-month procurement process meant drug shortages were common in health facilities in Mexico for first quarter of each year (Kearney, 2004). Scheduling purchasing process in the preceding year for drug supply in the coming year meant such shortages were avoided.

Bulk purchasing arrangements in which there is drug suppliers’ competition for consolidated market demand strengthens bargaining leverage of purchasers; regardless of whether multi-source products or monopoly supplied drug products are being procured. Simple bulk volume purchasing of drugs (with no attempts to create suppliers competition for consolidated market demand) is akin to discounting based on absolute volumes. Whilst this guarantees suppliers volume purchases and lower costs of production, marketing and distribution, economies-of-scale of absolute discounts imbedded in simple volume purchasing will tend to be exhausted. As noted by Grace (2003), and rightly so, too much attention is given to volume purchasing and points to a comparative study of prices achieved in country-level procurement programs in 10 African countries within the Southern African Development Community (SADC). The study showed a lack of positive correlation between drug purchasing volumes and prices of anti-tuberculosis (TB) drugs.

The study showed that although Botswana and Mozambique have a fraction of South Africa’s potential purchasing volumes, they secured lower prices for anti-TB drugs than South Africa. Within the SADC, South Africa holds more than 50% of the market share for anti-TB drugs (Center for Pharmaceutical Management, 2002). Failure to realize significant price discounts from volume purchasing at country-level drug procurements has led to policy prescriptions of greater collaboration among neighbouring African nations to exploit economies-of-scale from greater bulk buying volumes (Quick, Boohene, Rankin, & Mbwasi, 2005). This propagates the conventional wisdom that volume purchasing is king. The SADC evidence, however, has to be interpreted with caution. Ellison and Snyder (2001) estimation of sources of countervailing power in wholesale antibiotic markets suggests volume discounts (buyer-size effects) are not substantial and discount magnitudes depends more on price sensitivity of buyers than on sheer purchasing volume. Price elasticity is linked to opportunities for “comparison shopping” and competition that is increased in the presence of alternate suppliers and drug substitutes in any therapeutic class (market). Market tool offering ability to substitute, shift and switch between therapeutically “similar” drugs and alternate suppliers is formulary listing and/or exclusions. To minimize switching constraints, comparison shopping of products and prices must precede design of formulary lists. What is more important is aggressive substitution based on sound clinical judgments.
about drug substitutability in use and function [not product differentiation and heterogeneity]. For African nations, the starting point will be WHO’s essential medicines lists that divides drug molecules into classes; with a square box symbol indicating “similar” clinical performance in a pharmacologic [therapeutic] class. The policy is to consider classes as “markets” each containing generic and therapeu tic substitutes.

Critically, “credibility” of price-sensitive purchasers lies on ability to “channel” consolidated demand to comply with formulary listings. Formulary compliance programs are the means for purchasers to meet their market share commitments in return for price concessions. Without a formulary compliance program, the bargaining threat of taking business elsewhere is no more than bluffing. The difference between absolute volume discounts and market share discounts lies with the distribution of overall pharmaceutical demand across products and their suppliers in any therapeutic market. Under market share discounting, distribution of overall demand is skewed towards drugs and/or suppliers who offer best price discounts. This underscores why consolidation of market demand and compliance with “selective” formularies is important for bargaining clout. Exclusion of a supplier’s products from enforced formulary listings under consolidated market demand means significant losses in volume sales, revenues and profits. The main problem lies with administrative difficulties in “competitively” operating the price-market share tradeoff. Where buyers are unable to estimate and consolidate market demand, overcome clinical and operational challenges of using selective formularies and “channeling” prescribing patterns towards formulary drugs from preferred suppliers and cannot guarantee market share commitments, their ability to negotiate steep market share discounts and not just volume discounts will be minimal.

Unlike volume discounts, market share discounts are unaffected by purchaser sizes and unless suppliers deliberately refuse to supply a given country’s market, the “small size” and lower incomes of African nations should not affect their bargaining power as long as procurement arrangements allow consolidated drug demand and listing on formularies to be competitively traded off for price discounts. In addition, concealed trade discounts provides the means for suppliers to price discriminate based on negotiating power and not on ability to pay (Morgan & Hurley, 2004). Concealed market share discounts provides an “escape route” from passive price taking and concerns the low incomes (effective economic demand) of African countries thwarts their countervailing powers. Where concealed discounts negotiations are designed to influence business volumes/market shares, tacit or explicit collusion between suppliers is not sustainable since any supplier can undercut the “collusive” prices and enjoy, at least, in short term, “booms” in volume of demand.

Assuming individual countries of the SADC consolidate market demand, institute formulary compliance and negotiate market share discounts through their country-specific procurement agencies ceteris paribus, and South Africa maintains 50%—plus share of the SADC market for anti-TB drugs, discounts variation suggestive of buyer-size effects is likely to be observed. It is imperative that procurement agencies in African countries create sticky relationships of bilateral dependence with suppliers and exploit the leverage(s) provided by communicating potential product market shares in exchange for price discounts. In situations where price discounting and purchasing negotiations are hampered by bluffing and gaming, Danzon and Towe (2003) suggests resorting to absolute volume discounts from price-volume contracting where ex-post rebates on all units of products bought are made payable by suppliers to procurement agencies once a pre-agreed fixed volume of purchases has been guaranteed. Grace (2003), in addition, highlights the need for purchasing agencies to increase credibility through reliable financial payment and guaranteeing (incremental) market share commitments to drug suppliers and, in general, adopt professional purchasing tactics. Reliable payment systems (financial credibility of purchasers) are necessary conditions for engaging in prompt pay discounting as practiced by PBMs in the US.

Granted, bargaining leverage of procurement agencies can be increased through consolidated market demand, the strategy relies on effective demand quantification (using consumption or morbidity based methods), timely inventory management and less costly inventory holding; to reduce frequency of purchasing low-cost drugs and panic buying. Failure to quantify demand not only undermines negotiating leverage but, on average, results in losses of $13 for every $100 spent on drugs (World Bank, 1994). Having properly estimated demand, consolidating drug purchases is the next key step to reaping the benefits of market-share
discounts, which conflicts with decentralization policy that offered autonomy in purchasing to health facilities. However, consolidated purchasing does not need complete erosion of decentralization policy. Huff-Rousselle and Burnett (1996) evaluations of a group-purchasing organization: the Eastern Caribbean Drug Service, renamed Organization of Eastern Caribbean States/Pharmaceutical Procurement Services (OECS/PPS), showed consolidated purchasing allowed the OECS/PPS to reduce unit costs by over 50% in its first procurement cycle. Purchasing lessons from the experiences of OECD/PSS [and intended to be a blueprint for low-income countries] include: (a) political will for creation of quasi-public sector monopsony through institutional alliances and “pooling” of market demand; (b) creating elastic demand through use of formulas; (c) exploiting further increments in volume [discounts] through standardizing pack sizes, dosage forms and strengths; (d) quantifying demand and providing suppliers volume sales guarantees (e) reliable terms of financial payment (Huff-Rousselle & Burnett, 1996). It is estimated that the key characteristic for the successes of the OECS/PPS is the ability to pay suppliers promptly within 42–60 days from member country’s account. (Center for Pharmaceutical Management, 2002).

Lessons from group procurement arrangements in Latin America, the Middle East, and North Africa are consistent: “single purchaser” agreements, reliable and trustworthy financial payment systems and institution of permanent autonomous procurement secretariats (World Bank, 2004).

It does not take a lot to realize there is not much of a difference between “best” approaches to cost-containing procurement, bilateral dependence solution and price containment by PBMs. This paper calls for price-sensitive purchasers in African nations with the legal mandate over procurement decisions of healthcare facilities. Since, infrastructure for procurement agencies is existent in African countries, the next challenge is to build capacities and expand functions of procurement units to operate as price-sensitive purchasers. These buyers have the benefit of protecting “up front” prices, free of private distributors’ markups and provide the platform on which to institute policies for reducing and/or eliminating taxes, duties and tariffs on essential drugs. Unavoidably, the issues of confidentiality and “sealed” price bidding to maintain price competition and price discrimination apply. This appears not to be acknowledged by WHO Guidelines for price discounts of single source pharmaceuticals and Medicines Prices: a New Approach to Measurement, suggesting negotiated discounted prices to be publicly disclosed (Ridley, 2005; WHO, 2003).

Output of price transparency is dampened discount magnitudes without considering suppliers might abandon “small” country markets, instead of having long-run profits and revenues from “larger” OECD markets eroded. In addition, WHO (2003) guideline fails to acknowledge the value of market share discounting to “small” countries, and advocates “discount agreements should not constitute a tool for market penetration, etc.” However, the guideline rightly specifies that price discounts should not be used to influence national therapeutic choices; if anything, national therapeutic choices expressed on national formulary lists should be used to influence discounts. It is not clear the rationale behind the recommendation for not using discounting as market penetration tool but one possible concern is when market share discounts are extracted on an all-or-nothing, winner-takes-all basis. This gives the appearance of exclusive dealing or tying in sales, generates demand uncertainty for suppliers and this demand uncertainty might lead to market exit of competing products and suppliers. Further, it means therapeutic choices of drugs are severely restricted in return for price discounts.

Market share discounts are quite different from “sole supplier” contracts with the expectation that suppliers are not driven out of country markets but “forced” to compete for incremental business volumes from a consolidated price-sensitive demand. With market share discounting, competing suppliers maintain their “exclusive” or near exclusive or “preferred” status as long they offer the “best” discounts. Writings of contracts for discounting programs must specify conditional clauses that preferred supplier status is dependent on maintaining best discounts or bid prices. A simple way of checking market share discounts is generating anticompetitive outcomes is for price-sensitive purchasers to monitor the flow and receipts of discounting bids from suppliers. Furthermore, these purchasers may consider keeping overall business volumes and market shares offered in return for price discounts between a non-zero minimum and less than 100% maximum: there should be more than one bid winner or at least two drugs in any class of therapeutic and generic substitutes. This offers flexibility in therapeutic choices.
Day-to-day administration and operational managements of price-sensitive purchasers should adhere to sound economic practices of “competitive price bargaining”. And for that matter, contractual holdup problems should be avoided: signing up to long-term contracts (instead of renegotiated short term contracts) and/or linking future discounts to past discounts such that failure to maintain “preferred” status for supplier means paying back previous discounts or accepting any of the anti-competitive practices of exclusive dealership, tying-in sales and full-line forcing. Avoidance of contractual holds up problems “opens up” possibilities for repeated discounting negotiations; economic effects of this will be drug prices falling in “real terms” over time. Though, price controls may be problematic, they can still be applied in bargaining situations.

One policy option is to implement price control regulations without strict enforcement of the price limits. These price ceilings rather become a reference point for discounting programs of healthcare financers and providers, who will negotiate discounts (off the ceiling prices) using the leverages of formularies under consolidated demand to “move market shares”, bundling for single source products, prompt pay and absolute volume discounting. Meaning, one of the bargaining tools that price-sensitive purchasers will exercise in extracting price discounts is price control legislation. Price-sensitive purchasers have to be “aggressive”; employing the multiple bargaining tactics identified in this paper to derive “affordable” prices for African households. These agencies in African nations will work with healthcare payers and providers to make efficient decisions. Health facilities will source their individually estimated quantities from the pooled market demand from preferred suppliers that offer the best-discounted prices. This should maintain system-wide benefits of decentralization policy with health-care facilities independently managing allocated budgets for purchases, demand forecasting and inventory management, etc., but legally mandated to source drugs listed on formularies from preferred suppliers identified by procurement agencies.

Even when and where there is a need for top-up buying (given error margins around estimated economic demand), this will still be sourced from preferred drug suppliers identified by price-sensitive purchasers. The legal restrictions, essentially, crystallize drug purchasing decisions out of the “menu” of decentralized functions. One can argue financial budgets for medicines purchases should also be crystallized out of the menu of decentralized functions to constrict opportunities health facilities have to delay/default on payments for supplies. Price-sensitive procurement agencies managing budgets for drug purchases can then credibly negotiate for “prompt pay” discounts based on trade credit worthiness. Besides the legal restrictions, policy ownership sharing and continuous dialogue with educational campaigns will help physicians, prescribers and managers of healthcare facilities appreciate the value of enforcing formulary compliance and avoiding numerous small volume, discretionary purchases in order to assure prompt pay and market share commitments to suppliers offering steep price discounts. If drug prescribing and consumption patterns deviates from formulary lists and price discounts do not generate at least equiproportionate increases in volume demand, drug suppliers will have no further incentives to offer price discounts. Failure to offer compensatory incremental volume demand will undermine the effectiveness and credibility of procurement agencies.

Discussion

This paper advocates institutional structures of bilateral monopoly in African countries as the means to exerting significant downward pressures on prices. Economic theory and empirical evidence provides enough reason to suggest pro-competitive countervailing buyer power is a viable solution for affordability in African nations. The bilateral dependence solution answers concerns about voluntary differential pricing programs that are designed on charity and public relations exercises to salvage damaged images and solely at discretion of the drug suppliers. The difficulty with the bilateral dependence solution is its apparently indeterminate outcome. The onus is on price-sensitive purchasers to aggressively extract price discounts by “creibly” threatening to withhold market demand from suppliers who do not provide steep confidential/proprietary trade discounts. A useful (but not rigid) target rule is to pursue discounts variation that approaches Ramsey pricing using per capita income of the poorest group(s) in any given African country as the proxy for demand elasticity. These public sector buyers will be of great value considering pricing in the private sector tends to move in tandem with the public sector.
A study by Maiga, Haddad, Fournier, and Gauvin (2003), in Mali, showed the interdependence between public and private sectors such that lower public prices led to lower private prices. Granted, Quick (1982) showed that the efficiency and economy of any procurement program is most sensitive to administrative failures especially drug delivery times and demand quantification. Supply chain optimization will be critical to the effectiveness and efficiency of procurement agencies. Price-sensitive purchasing agencies should be supported by investments in physical human resources (logistics, inventory management, “demand” quantification and forecasting, integrated information systems, training in mastering negotiation and legal skills for writing up valid, sustainable purchasing contracts, etc.). They should have leadership and institutional commitment to aggressively secure affordable prices for African households.

It is easy to think that insufficient funding, considering the heavy reliance on imported drugs, is the prime reason for impaired drug access in African societies. The problem is not funding per se but “inefficiencies” in African drug markets. For example, it is estimated that patients visiting public healthcare facilities in sub-Saharan Africa receive $12 worth of pharmaceutical benefits for every $100 of tax money spent. As a result of resource wastage, more is spent on medicines than is necessary. With little to show for resources spent, the simplest and quickest resolution is to propagate the belief that more money is the answer (World Bank, 1994). This does not mean there is no need for extra funding for drug access in African nations (there is) but it makes little sense to keep pouring money into wasteful channels. It is the more reason why price-sensitive purchasers for efficient resource allocation and purchasing are critical to derive the most out of scarce resources. Country-specific, price-sensitive purchasers present a more sustainable solution to the problems of affordable drugs pricing than creation of external organizations to act as price-sensitive intermediaries. And, can be flexibly applied to all drugs for global diseases.

The wisdom on which external purchasing agencies are created is implicit questionable belief that African nations cannot bargain for low prices (even with the appropriate institutional and market structures). Multinational purchasing initiatives are more likely to be successful when member nations are “similar” with regards to medicinal needs, epidemiology, macroeconomic conditions, regulatory procedures, language and cultural backgrounds. Also individual nations must have stable, less volatile currencies and remain loyal to buying cooperatives and do not compete with the procurement pool by securing price discounts elsewhere (UN Millennium Project, 2005). Multinational procurement cooperatives also need an administrative structure that will be costly to run over a broad range of products. Consequently, multinational buying cooperatives might find their value restricted to a limited group of global diseases (mainly malaria, HIV/AIDS and TB) and a selective group of “similar” African countries. Multinational buying cooperatives are valuable strategies but they should not bypass or turn a blind eye to the “missing” price-sensitive purchasers in African countries. A key constraint to drugs affordability in African countries is non-existence of a purchasing agency representing large numbers of beneficiaries, if not all of a country’s consumers.

One possible problem is corruption given confidential discounting is key to hard bargaining for African households. There is nothing like “the perfect solution” and public policy choices are always between imperfect alternatives. Besides the threats of corruption is not unique to any public policy. Confidential contracts should not be presumed to be a negative “black box” and competitive price discounts regarded as kickbacks in absence of assessments of potential benefits from trading off drug price transparency and price transparency only. According to Caines and Lush (2004), some drug suppliers are publishing “cost of production” prices. If this does not deter suppliers from offering discounts affordable to African nations then confidential contracts are not necessary. Progressively more nations are adopting confidential discounting, placing inflationary pressures on global “list” prices for medicines (Morgan & Hurley, 2004). If African countries fail to operate market share discounting programs (or another mechanism for price containment), the more likely they will find themselves excluded from the benefits of pharmaceutical innovations.

African countries have to be responsible for their own destiny and take charge of their own public affairs; but it is obvious under the current resource settings, the way forward is to help African nations help themselves. Price-sensitive buyers will demand quite drastic institutional reforms and structural changes to drug markets and African leaders need to “sell” the policy proposal to development.
partners to garner political support and investments for the proposed institutional/structural changes. The international community and development partners will have to provide financial, non-financial assistance for investments in capacity and institution building and supply chain optimization. Price-sensitive agencies in African nations should be required to disclose negotiated concealed price discounts to domestic or external international auditors who will apply the necessary checks and balances to ensure they are doing their work effectively. Discounted drug prices will be kept off publicly available invoices whilst separate invoices containing confidential discounts are submitted for auditing. This will be consistent with current “best” foreign aid architecture where recipient nations have ownership of policy proposals with foreign aid allocation and assistance based on “agreed” performance indicators covering governance and verifiable outcomes: in this scenario confidential price discounts on individual products and publicly disclosed aggregated rebates across products or suppliers.

Conclusions

Thesis of this paper is hard bargaining, country-specific; price-sensitive purchasing agencies represent a more sustainable mechanism for making essential medicines affordable to African households. The bilateral dependence solution is an institutional response that allows African nations to take charge of their own public affairs. Development partners and the international community, whose aim is to help African nations help themselves, must provide the necessary support for institution of country-specific purchasing agencies. Investing in these procurement agencies will be in line with efforts for strengthening healthcare systems capacity in African nations.

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