

going on strike is similar to the soldier's act of going to war as it increases human suffering for some time at least – an outcome which, on the surface, would appear to contradict the missions of both.

### How and when to use the criteria

Strike action is justified only when all six conditions are fulfilled. None can be left out as each represents a safeguard mechanism related to an important consideration, as already described above. Second, the criteria should be applicable whenever a strike by medical doctors is being contemplated. The use of the criteria ensures that the general presumption against a strike is upheld by forcing the organisers of the strike to consider a series of important questions, such as whether the cause for going on the strike is just; whether the strike is the last resort or have some non-disruptive alternatives been left unconsidered; whether in the current circumstances, the strike is likely to achieve its objective or would just be a futile exercise; whether the declaration of the strike action projects the view of the majority of the peers in the profession; and how to warn the patients beforehand and finally, how to ensure that they are not disproportionately harmed by the strike action.

### Conclusion

This piece has argued for the pragmatic view that strike action by doctors that is prima facie unethical may be morally justifiable only under six conditions. These are that (i) the cause of the strike is just, (ii) the strike action has reasonable prospects of success, (iii) it is a last-resort action, (iv) the decision to go on strike is taken by a legitimate authority representing the doctors, and (v) a formal declaration of the

strike is made to the public. The criteria uphold the prima facie moral presumption against strikes and do not encourage strike actions by doctors, but at the same time, recognise that special circumstances may arise which justify a strike.

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## Promoting public health research in BRICS through a multinational public health prize fund

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### Abstract

This article proposes the establishment of a prize fund to incentivise public health research within the BRICS association, which comprises the five major emerging world economies: Brazil, Russia, India, China and South Africa. This would stimulate cooperative healthcare research within the group and, on the proviso that the benefits of the research are made freely available within the association, would be rewarding for researchers. The results of the research stimulated by the prize would provide beneficial new healthcare technologies, targeting the most vulnerable and needy groups. The proposed fund is consistent with current international patent law and would not only avoid some of the problems associated with the "Health Impact Fund", but also create a new model for healthcare research.

The dawn of the 21st century has seen the emergence of a new global grouping consisting of five of the world's largest and fastest-developing economies: Brazil, Russia, India, China and South Africa (known collectively as BRICS). Together, they account for approximately 40% of the world's population and have a combined gross domestic product of USD 15 trillion. Since 2009, the heads of state of BRICS have been holding annual summits.<sup>1</sup>

Despite the geographical and cultural differences between them, the BRICS countries face certain common and pressing public health challenges. These include the prevalence of communicable diseases, such as HIV and malaria, as well as burgeoning incidence rates of lifestyle-based diseases, such as

cancer, heart disease and diabetes. The effectiveness of public health relief programmes in these countries is often hampered by the absence of universal healthcare, and the expense of purchasing branded medicines (1).

The pressure of dealing with these challenges has a knock-on effect on the extent of the compliance of BRICS with international patent law. The scores of the BRICS countries, with the exception of South Africa, for a recent US Chamber of Commerce measure of overall respect for intellectual property rights (IPR) were among the lowest (2). Disregard for patent law has negative political ramifications and can create investor uncertainty. In recognition of these difficulties, the health ministers of BRICS held their first joint summit in July 2011. At this meeting, they pledged to cooperate to find new ways to address their public health challenges (3).

There is a consensus that the current model for medical research and the distribution of its results is deeply flawed. Medical research is driven predominantly by pharmaceutical companies, but their business model incentivises research into low-risk, high-return products. The often prohibitive price of patented medicines forces countries to produce generic counterfeits, in violation of international treaties and norms. This, in turn, disincentivises pharmaceutical research into drugs that would treat diseases prevalent in the developing world.

Despite these difficulties, the BRICS countries have the potential to become world leaders in the provision of public healthcare and research in this area. Besides their large and growing economies, they are blessed with an abundance of both natural resources and scientific expertise. The Amazonian rainforest has the world's greatest diversity of medicinal plants, the pharmacological potential of which is barely understood. Many of these countries have large, clinically naïve patient populations. China and India between them produce more than one million science graduates every year, if one includes technology, engineering and medicine within the definition of "science" (4). Russia and South Africa have a strong history of innovative and large-scale research projects. The university sector within the grouping is large, but has yet to fulfil its research potential. Although BRICS universities are steadily improving in the QS world rankings, they still lag far behind their European and American counterparts in terms of the number of representatives within the top 400 (5).

In this context, the time is ripe for the establishment of a collaborative prize fund (hereafter referred to as "the Fund") to incentivise research into the development of medicines and technologies that benefit public health in BRICS. This would be paid for by the national governments and administered by a committee, which would have a small number of scientists, epidemiologists and policy-makers as its members. The Fund would run a regular competition, with prizes being awarded to research that has demonstrable benefits in the area of public health.

Teams of researchers across BRICS would apply to enter the competition. Successful applicants would be awarded a grant

to defray their research costs. After a certain period of time, the results of the research would be entered into the competition. The teams responsible for creating the products deemed the most beneficial to public health would receive a substantial cash prize. The number of prizes awarded and the value of each prize would be at the discretion of the awarding body. It may be decided that in a given competition cycle, none of the entrants merits a prize; on the other hand, the awarding body may decide to give awards to a number of different teams, the value of each prize being proportionate to the relative merits of the entries.

All products of the research supported by the Fund would become the equal property of the five participating countries and must be made publicly available within the group. This would allow the benefits to be spread quickly and cheaply amongst the group's 2.8 billion members.

There would be restrictions with respect to those who can enter the competition, and also with respect to the purposes for which the cash prize can be used. The research teams must be led by public institutions within the BRICS countries, and must involve researchers from at least two of the five participating countries. In this way, the Fund would encourage both the development of publicly accessible research capacities within the group, and the strengthening of collaboration between BRICS research institutions.

Furthermore, by requiring international cooperation, the Fund would avoid some of the difficulties involved in judging research carried out by teams with a narrowly intra-national focus.

Companies and international research teams could be allowed to "buy in" in order to participate in the system. This would allow the research teams to benefit from foreign organisational and technical expertise. However, external and private sector participation would be limited in a number of ways. First, international participants would have to waive patent rights for the products of their research. They would, instead, receive a share of the prize money (if they are awarded a prize) commensurate with their level of participation. Second, the research teams would have to be led by public institutions within BRICS. This is to ensure that the scheme has a lasting impact on the scientific research capabilities of these countries.

The cash prize would be divided amongst the participants on the basis of the relative time they spent on the research and the amount of resources they contributed. These aspects would be agreed upon by the teams before going ahead with the research. The prize money must be used for furthering public health research. This requirement would ensure that the Fund helps to create sustainable multinational research institutions within the group.

This proposal bears certain similarities to the Health Impact Fund (HIF), proposed by Aidan Hollis and Thomas Pogge (6). There are numerous versions of the HIF in the literature, but all of them share the contention that the current system of

proprietary patent rights ought to be replaced with a global system of incentives, according to which developers of medical technology are remunerated for their work in direct proportion to the global health impact of their invention (7). This system incentivises researchers to find maximally effective solutions to widespread health problems, without reference to the ability of the patient to pay for treatment.

However, HIF proposals suffer from two serious drawbacks. The first of these relates to the requirement that the healthcare impact of every proposed technology be measured. The canonical form of the HIF recommends the creation of a global body, funded by the nations of the world and tasked with overseeing the distribution of money to those responsible for the creation of health technologies in proportion to the public health benefit of their inventions (6). This body is expected to evaluate, or conduct research into, the consequences of every single health technology in the world that could have been patentable, and to distribute money on the basis of that research. Given the number of health technologies in use at any one time, the confluence of the various factors at work in public healthcare and the time scales involved in health interventions, measuring the health impact of any given technology would be extremely difficult, if not impossible (8).

The second weakness of the HIF stems from the proposal to compensate healthcare technologies in direct proportion to how far they benefit public health. In ordinary models, this means that a medicine which eradicates a disease entirely will, in the long term, be rewarded less than one which treats the symptoms of a disease without eradicating it. This is due to the fact that it is the latter medicine, and not the former, which will have a direct effect on the health of future generations. A further consequence of the HIF proposal is that there is no limit to the amount of money an individual or private enterprise can earn from a healthcare technology. Thus, if a certain company A stumbles upon a cure for, say, malaria, it will earn an astronomical amount of money. On the other hand, if a certain company B labours over a drug which makes an incremental improvement in the treatment of HIV, it will earn significantly less. Although there are differing views on this point, it may be argued that a more just distribution of resources would cap the amount of money given to A and increase the compensation given to B.

These two difficulties stem from the fundamental presumption of the HIF proposal, viz, that individuals should be compensated for the products of their work in direct proportion to the objective (positive) consequences of the work. For this reason, it would be difficult, if not impossible, to formulate a version of the HIF which avoids them entirely. By contrast, a prize Fund such as that suggested herein would avoid both these difficulties.<sup>2</sup> Since it would be run as a competition between a fixed number of research teams, the administrative burden would be manageable. The administrators of the Fund could restrict the number of possible entrants, as well as set the criteria for success in the competition. Furthermore, since the Fund would offer prizes for the most promising research,

there would be no need to tailor the remuneration to make it in direct proportion to the health impact of each submission. Rather, the Fund would appoint an international panel of judges to determine which products merit rewards, and to set rewards at a reasonable level.

Therefore, unlike the HIF, the proposed Fund would not apportion money on the basis of objective criteria, such as the actual impact on quality-adjusted life years (QALYs). Rather, the awarding body would have substantial leeway to develop subjective criteria for awarding prizes, which can include, for example, the expected impact of the product on QALYS, the innovativeness of the product and its potential for flow-on research. So long as the awarding committee is transparent about the criteria used and applies them impartially, there is nothing morally objectionable about the use of less objectively measurable criteria. Indeed, it may be argued that the protean nature of the concept of "public health" makes truly objective measurement impossible and that it is, therefore, better to defer to the informed decision of a panel of experts.

Supposing that the Fund were successful, the question would then arise as to what a global system modelled along these lines would ideally look like. The Fund could be developed in one of two alternative ways. On the one hand, it could be that the best way to globalise the system would be to expand the membership of the Fund to include all the nations of the world. In this case, all countries would contribute to a joint prize fund, which would be used to reward successful entrants on the basis of some predetermined criteria. Let us call this the "single global Fund alternative". Alternatively, it might be that the most effective way to extend the scheme would be through the creation of similar parallel funds, with different national groupings (for example, an EU group and an Americas group). Let us call this the "multiple Funds alternative".

When we consider these alternatives, we must also consider the interrelated question of whether the countries participating in the Fund would assert IP rights over the products of the research, or whether they would make the results of the research freely available to all.<sup>3</sup> If these two questions are taken together, we arrive at four potential scenarios: (i) a single global Fund with asserted patent rights; (ii) a single global Fund without asserted patent rights; (iii) multiple Funds with asserted patent rights; and (iv) multiple Funds without asserted patent rights.

Alternatives (i) and (ii) resemble the HIF proposal, with the exception that, as stated, a single global Fund does not require the abolition of patents on healthcare technology. (Even in alternative (ii), the Fund owns patent rights, but simply undertakes not to enforce them.) Thus, a global Fund would rival the current model of patent-driven research, and would not necessarily replace it. Rather, it would simply promote publicly funded researchers, who would be in competition with their privately funded counterparts.

In scenario (iii), a number of different multinational Funds would run their own individual Funds, with each Fund owning

and asserting IP rights over the products of the research yielded by their competition. These groups could then trade patent rights, or else enforce them and use the profits to replenish their funds. This would be a sort of halfway house between the current system of privately owned patent rights and HIF-style proposals which involve jettisoning healthcare IP entirely. In this system, although profits could be made from healthcare, they would go predominantly, if not entirely, to governments rather than private individuals.<sup>4</sup> As well as ensuring that the profits made from research are distributed more justly than they would if they were distributed only amongst individuals or the shareholders of private companies, another benefit of publicly owned patents is that in principle, the utilisation of these patents is under democratic control.

On alternative (iv), by contrast, there would be multiple Funds but the results of the competitions would not involve the assertion of patent rights. In this case, a series of (relatively) nimble multinational research competitions would run concomitantly, each promoting research that targets problems common to the particular grouping, but each making the fruits of their research freely available to whoever might need it.

It is beyond the scope of this article to adjudicate between these alternatives. It is sufficient simply to note that the proposed Fund is consistent with all four scenarios. One virtue of the proposal is that it would provide a valuable testing ground for some of the ideas which drive more radical proposals, such as the HIF. Another virtue is that the Fund, particularly in forms (ii) and (iv), provides a challenge to the current profit-driven healthcare research model. In this way, the Fund would weaken the patent-driven economy and may mark the beginning of an incremental process towards the complete abandonment of healthcare IP.

Irrespective of how it might evolve, the Fund would act as a powerful driver for research and innovation in universities and research institutions within BRICS. Due to its combination of both collaborative and competitive elements, it would provide a further incentive for researchers to concentrate on the development of solutions for pressing public health problems. In this way, an important step would be taken towards the institution of a form of health research that is oriented towards global benefit rather than profit.<sup>5</sup>

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### Notes

- <sup>1</sup> South Africa did not join the group until December 2010; before then it was referred to as BRIC.
- <sup>2</sup> For a discussion of the history of prize schemes, and their merits relative to an early version of the HIF proposal. Love J, Hubbard T. The big idea: prizes to stimulate R&D for new medicines. *Chicago-Kent Law Review* 2007 Nov 28;82(3):1519–54.
- <sup>3</sup> It has been argued that the concepts of copyright, patents and intellectual property are morally suspect. Wilson J. On the value of the intellectual commons. In: Lever A, editor. *New Frontiers in the Philosophy of Intellectual Property*. Cambridge: CUP; 2012, pp. 126ff.
- <sup>4</sup> The caveat “predominantly” captures the fact that this system is consistent with a role for private healthcare research and distribution. This might either issue in patents (for privately discovered technologies), or else in payment for services rendered (as in private consultancy in the R&D process).
- <sup>5</sup> It therefore meets the targets set out in the WHO global strategy on public health, innovation and intellectual property. World Health Association. Global strategy and plan of action on public health, innovation and intellectual property. Available at: [http://apps.who.int/gb/ebwha/pdf\\_files/A61/A61\\_R21-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/A61/A61_R21-en.pdf) [cited 2013 August 12]

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