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Lacking the speed and the flexibility to respond – World Bank's Pandemic Emergency Financing Facility

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***Bangin Brim** and **Clare Wenham** contend that the Pandemic Emergency Financing Facility serves private sector interests at the cost of global health security*

The Ebola outbreak in west Africa in 2014-16 exposed many flaws in the global response to infectious disease.[1 2] In particular, it highlighted the gap between countries' commitments for outbreak preparedness, detection, and response, as required under the International Health Regulations, and their actual ability to respond when needed. This is partly due to a lack of financing.[3 4] Responding agencies such as governments and non-governmental organisations were on the back foot when trying to fund control efforts as the Ebola epidemic increased in intensity.[1 2] Prompt financing during the early stages of outbreaks can limit a pathogen's spread,[5] and the World Bank estimated that early financing of $100m (£81m; €92m) could have averted much of the subsequent socioeconomic and human crisis.[6]

In 2016, the bank set upthe Pandemic Emergency Financing Facility (PEF) to quickly release funds to the world's poorest countries and agencies to mitigate the humanitarian and economic consequences of potential pandemics caused by specific viruses.[7] PEF created a market for pandemic risk insurance that draws on funds from the private sector through (catastrophe) bonds and swaps (a temporary agreement between two parties to exchange cash flows and/or liabilities from other financial instruments, often used to reduce financial risk) in return for highly lucrative interest rates. It was heralded as an innovative financial instrument to revolutionise the challenge of raising capital, which had hindered the work of many other donor reliant funds such as the UN's Central Emergency Relief Fund (CERF) and the World Health Organization's Contingency Fund for Emergencies (CFE).

Although CERF and CFE have released funds rapidly and continuously to mitigate outbreaks since 2016, including for Ebola in the Democratic Republic of Congo (DRC), the

criteria for PEF to make an insurance payout have never been met. Furthermore, our analysis shows that only two outbreaks within the past 15 years would have met the criteria to activate PEF's insurance payments. We argue that the fund is failing from a global health security perspective and call for a re-evaluation of the disbursement criteria.

Revolutionary financing model?

PEF joined an already expanding financing landscape in global health security. However, if differs from other funds because it draws money from capital markets rather than relying solely on voluntary contributions.[8] The two main funds, CERF and CFE, have struggled with financing.

CERF was created in 2005 to raise and pool emergency disaster relief funds to provide grants and loans for underfunded emergencies and for rapid responses to emerging emergencies of various origin.[9] Although it disbursed $74.6m (£61m; €68m) for health emergencies in 2018, only 55.5% of its annual donor funding target of $1bn was met.[10]

WHO created the CFE in 2015 to mobilise funds of up to $500 000 within 24 hours to ensure an effective response to disease outbreaks and humanitarian emergencies.[11] Larger sums can be requested, and although theoretically there is no financial ceiling, the lack of contributions limits the available funds for emergencies.[12] As of March 2019, only $70.7m of the targeted $100m had been raised.[11] However, the current Ebola outbreak in the DRC is so serious that it has been allocated over $67m—nearly all of the fund's annual budget and almost half it has ever raised, overstraining its mandate and budget (see supplementary data on bmj.com).

PEF could seemingly reduce countries' donor contributions while providing an example of how capital markets can support global health.[8] But the fact that the criteria for an insurance payout have never been met has led to widespread criticism, particularly during the DRC Ebola outbreak.[13-15] Such criticism stirred the World Bank to pay out $300m through International Development Association grants and credits, suggesting it recognised the need for funding and that the pandemic fund was not flexible enough to provide it.[16] Much of the critique is centred on fundamental flaws of using catastrophe bonds to finance international responses to pandemics and the challenges of private sector involvement in financing disease outbreaks,[17] but we focus on global health security.

How PEF works

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The mechanism for PEF was developed in consultation with the World Health Organization and the re-insurers Munich Re and Swiss Re. It is supported by the governments of Japan and Germany as part of the World Bank's broader role as the largest risk insurance provider for low and middle income countries.[18 19] The aim is to provide support for pandemics arising from specific viruses: influenza A, *Coronaviridae* (eg, severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses), *Filoviridae* (eg, Ebola and Marburg), Crimean Congo haemorrhagic fever, Lassa fever, and Rift Valley fever.

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PEF has two payout mechanisms described as "windows." The insurance window offers up to $425m as risk coverage provided through the investments of the private sector which takes on the pandemic risk in exchange for favourable interests rates on bonds and swaps (6.5-11.1% above the London Interbank Offered Rate (Libor), a globally accepted benchmark rate of interest), while Germany, Japan, and the World Bank pay the coupons (an annual interest payment) to the private investors for assuming this risk.[20 21] The insurance window releases funds when defined criteria are met based on the duration of an outbreak, number of cases, the growth rate, and the geographical spread (box 1).

Box 1: Activation criteria for PEF's insurance window[20]

Influenza A virus (release of $275m)

- At least 5000 confirmed cases worldwide within a rolling 42 day period
- The virus is a new genetic subtype and has not been associated with any case or death in WHO reports published before July 2017 or has a hemagglutinin gene that is antigenically distinct from those in seasonal influenza viruses circulating in the 35 years before July 2017
- There is sustained or effective human-to-human transmission
- The growth rate is above 0 after the first 42 days
- The growth rate mean is ≥ 0.265 for any day after the first 42 days.

Non-flu viruses

(*Filoviridae* (eg, Ebola and Marburg), *Coronaviridae* (eg, MERS and SARS), Rift Valley fever, Lassa fever, Crimean Congo haemorrhagic fever)

- At least 12 weeks have passed from the date of the start of the event
- The outbreak is in at least two countries eligible for International Development Association or International Bank for Reconstruction and Development funds, with each such country having at least 20 confirmed deaths
- The growth rate is above 0
- The total confirmed deaths is ≥250
- The rolling total cases is ≥250
- The rolling confirmed number of cases needs to comprise a minimum percentage of the rolling total case amount

Eligible countries and responding agencies (eg, WHO, UNICEF) have to submit a request for funds to the PEF coordinator, who checks whether the criteria have been met and, if so,

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calculates how much will be provided to each affected country/responding agency (fig 2 in supplementary data):

- Regional outbreaks affecting two to seven countries would activate payments at three stages as the number of total confirmed deaths increases
- Global outbreaks affecting eight or more countries also activate payments at three stages but provide access to higher funding levels at the first two triggers

By contrast, PEF's cash window is a donor based mechanism and governed by a steering body consisting of countries financially contributing to this mechanism—currently Germany and Australia. They govern this mechanism as voting members and decide on payouts together with non-voting members (including WHO, World Bank, and representatives of IDA eligible countries, currently Liberia and Haiti).[7 21] The fund consists of up to $64m, and funds are allocated when the criteria for the insurance window are not met (box 2).[20 22]

Box 2: Purposes for which PEF's cash window may allocate money to eligible countries[20]

- To provide supplemental financing for an outbreak of pathogens covered by PEF that clearly merits larger or earlier funding allocation than provided by the activation criteria or allocation arrangements for the insurance window
- To provide financing for severe single country outbreaks
- To provide coverage for new or unknown pathogens not covered by PEF's insurance window
- To serve as a conduit for efficient and effective surge financing during crisis for development partners to channel resources to affected countries
- For all other allocations in line with PEF objectives and approved by the steering body

The World Bank claims that PEF is an innovative model for bringing private sector financing into pandemic response.[23] But PEF's insurance window has yet to be activated, while the cash window released $11.4m in May 2018 for DRC's Ebola outbreak in the Équateur province and $50m in 2019 for the outbreak in DRC's provinces of North Kivu and Ituri, almost depleting its funds.[21 24]

High thresholds

We sought to understand why PEF has not been able to release funds from the insurance window with the promised "speed and flexibility" and assess how suitable its criteria are for real life outbreak events.[25] We evaluated how many outbreaks for which CERF and CFE funds were allocated before PEF's existence would have met the activation criteria for an insurance claim through PEF (table 3 in supplementary data).

Since CFE was established in late 2015, it has made 66 payouts for disease outbreaks, totalling around $104.6m (76.8% of all CFE's allocations); 24 of the outbreaks were caused by PEF eligible pathogens (table 1 in supplementary data). CERF allocated funds more than

1500 times for health related events, providing $907m (15.3% of all CERF's allocations[26]); 41 ($26.6m) related to PEF eligible pathogens, including preparedness measures (table 2 in supplementary data).

Our analysis shows that for all these outbreaks that CERF and CFE released funds for, only Rift Valley fever in 2006-07 and Ebola in 2014-16 would have met the activation criteria for the PEF insurance window. From the criteria, we estimate this would have released $22.5m and $150m, respectively.

Our analysis suggests that the criteria for PEF's insurance window are too stringent to mitigate risks posed to global health security. What's more, a recent appraisal of the scheme has shown that more money was paid out to investors than to eligible countries facing disease outbreaks. Only $51.4m has been disbursed through the cash window, but $114.5m had been paid out to investors by mid-2019[22]; Australia, Germany, Japan, and IDA have paid $175.6m into the scheme. As such, in its current format, the system seems to favour private sector investors over global health security.

The stringent criteria may make sense from an insurance perspective, balancing the desire to give insurance coverage while needing to deliver financial returns to investors, but the criteria are at odds with the messy reality of epidemic control. In this sense, even PEF's cash window can be seen as a final safety net, preventing activation of the insurance scheme and investor losses.

We believe that the World Bank should reflect on this and decide whether reform is needed or whether its desire to finance pandemics can be better served through other established mechanisms. For example, since CFE and CERF are chronically underfunded, co-financing agreements between these and PEF for disease outbreaks could remove parallel structures and release pandemic financing sooner.

Matching criteria with aims

If the World Bank seeks to continue with the PEF, we suggest it should consider the following changes to the activation criteria. Firstly, the PEF insurance criteria requires an outbreak to have crossed a border and affect at least 20 people in two eligible countries before insurance payments can be made. This creates serious limitations since disease outbreaks may occur in the centre of large countries with limited cross-border traffic and reach epidemic proportions before crossing an international border.

The scale of the humanitarian crisis from Ebola in DRC shows why the cross border requirement should be removed if the goal of PEF is ensuring global health security. Ebola,

which was declared a Public Health Emergency of International Concern in July 2019, has infected almost 3000 people and killed more than 2000.[27] Although PEF's cash window has made $50m available to respond to the epidemic,[24] the insurance window remains inactivated. In November 2018 the only outstanding criterion was the requirement for 20 deaths in at least two eligible countries. The disease crossed the border in June 2019, but the case numbers remained below the 20 person threshold.[27 28]

Secondly, PEF's rationale for focusing on specific viruses remains unclear, apart from the claim that they were the viruses "most likely to cause a pandemic."[19] The list is regressive, especially when considering trends in antimicrobial resistance and the all-risk approach to disease embedded within International Health Regulations and "disease X" in WHO's research and development blueprint.[29] It also ignores the vast number of emerging (zoonotic) pathogens with pandemic potential that have caused (small scale) outbreaks in the past, such as the Nipah virus.[30 31] A more progressive fund would allow flexibility to finance all notable infectious disease outbreaks, if necessary.

Thirdly, the existence of numerical criteria within an insurance model is fundamentally at odds with providing proactive intervention in the early stages of an outbreak to prevent transmission. Effectively the outbreak has to reach pandemic levels to be financed, which goes against the model of early detection and early response dominant in global health security. The insurance window could instead rely on a steering committee, as is the case for the cash window, with constant independent review and appraisal of outbreaks to decide on fund dispersal.

Investors' interests?

We recognise that reforming PEF would come at a cost. Liberalising or jettisoning the criteria for the insurance window would increase the risk to investors and would need to be reflected in even higher interest rates. Aligning PEF with CFE or CERF therefore seems more attractive and it would be more reasonable for the World Bank, Australia, Japan and Germany to redirect public funding for disease outbreak responses through recognised mechanisms instead of paying expensive coupons to private investors.

PEF is not flexible or quick enough to meet its aim of preventing "rare, high-severity disease outbreaks from becoming pandemics."[7 20] We believe that PEF has failed to deliver on its innovative promise with the high bar activation criteria favouring investor interests over global health security. Given the challenges CFE and CERF face in raising sustainable fundraising, PEF's financial capabilities could fill a crucial gap in global health security if

these mechanisms were streamlined. The World Bank has stated that discussions are taking place around the development of PEF 2.0.[32] Soul searching needs to be done to decide whether PEF 2.0 prioritises global health security against investor interests.

Key messages

The World Bank's Pandemic Emergency Financing Facility (PEF) is an insurance-based fund set up to ensure swift funding to countries and agencies responding to potential pandemic outbreaks of disease

- PEF is yet to make a payout through its insurance window, even though other emergency funds have, but it has paid $114.5m to private investors
- Analysing of past disease outbreaks suggests PEF's insurance scheme would have been triggered only twice since 2006
- We believe PEF criteria need to be reformed so that it can contribute to global health security

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