Public Health England

Protecting and improving the nation's health

Outline Business Case

Summary Sheet

Title: IHR strengthening project		
Project Purpose: To strengthen international efforts to improve global health security, through action to increase compliance with the International Health Regulations at national and regional levels.		
Programme Value: £16m		Country/ Region: Africa, Asia.
Project Code:	Start Date: **November 2016**	End Date: **March 2021**
Overall programme risk rating:	**Green** (could move to Amber if delay in ministerial approval)	
Quest Number:		

Version control box

Version	Lead	Date	Notes
2.0	EO, EB, TE, KH	31 May 17	Final edits, formatting.
2.1	KD	15 June 17	Edits to: privacy marking, VFM, Options Appraisal.
2.4	EB, TE	20 June 17	Changes to front end text and details on tables following DFID and DH comments.
2.5	KD	21 June 17	Adjustments made in response to DH Legal comments
2.6	EO	21 June 17	Changes to tables 2 & 4
2.7	TE, EO	22 June 17	Comments from DH legal, further edits to VFM, strategic risks
2.8	PE	23 June 17	Formatted
2.9	EO	23 June 17	Checked, verified references, addition to ToC figure
3.0	EO TE EB PW KH	23 June 17	Final

Executive Summary

Introduction

1. This business case supports the joint Department of Health (DH) and Public Health England (PHE) project to **strengthen international efforts to improve global health security, through increased compliance with the International Health Regulations (IHR) 2005 in specified countries and regions.** All investments made as part of this project will be funded through Official Development Assistance (ODA).
2. This case requests DH approval for a programme of PHE technical support that will build WHO capacity to support countries achieve IHR compliance. Support will be provided with and through WHO at central and regional levels and at country level, where inputs will complement other donor funding and align behind nationally identified priorities.

Background

3. The primary mechanism for ensuring global health security is the legally binding World Health Organization (WHO) agreement, the IHR 2005. These Regulations require all countries to cooperate in protecting the world from major public health events and give WHO the power to declare public health emergencies of international concern.
4. The IHR strengthening agenda is premised upon supporting countries achieve IHR compliance through creating strong national public health systems to detect, prevent and respond to a wide range of public health threats. Regional (supra-national) public health system strengthening supports national systems. These national and regional systems reduce the risk of public health events escalating from local to global threats, as seen in the 2013-16 West African Ebola epidemic.
5. The UK is committed to supporting the IHR strengthening agenda, as part of its overall commitment to development and in line with the Sustainable Development Goals.[1]
6. An outline business case for this IHR strengthening project, jointly conceived by PHE and DH, in close consultation with the DFID, was approved by the Minister for Public Health and the Treasury in November 2016. £1.1 million was approved for the design and inception phase from November 2016 – May in order to generate a full business case for submission to DH in May 2017. This full business case reflects the remaining £14.9 million for the project.
7. The project design phase has now concluded, addressing the scope, needs assessment, options appraisal and methodology for achieving the project's aims, as described in detail below.

What the project will do

8. PHE technical expertise is already in high demand and valued by WHO, with support provided to IHR evaluations and with disease specific expertise mobilised through PHE's 10 WHO Collaborating Centres and through participation in global health security mechanisms such as the Global Outbreak Response Network (GOARN). PHE also has strong existing relationships with other international actors on global health security, such as US CDC, China CDC and the Public Health Agency of Canada, and is thus uniquely placed amongst UK based institutions to mobilise technical support to strengthening global health security. However, capacity to operate internationally is currently limited as PHE's core funding and operational focus is on England and, unless specifically funded, international activity needs to be justified in terms of the benefits it will bring to the population of England or to PHE staff development.
9. The resources available through this project will enable PHE's scientific and technical capability to be mobilised for increased international engagement, significantly scaling up UK capacity to respond to WHO and country demand for support on IHR. The enhanced capacity developed through the project will be deployed to increase WHO and partner country access

[1] United Nations Sustainable Development Goals http://www.un.org/sustainabledevelopment/sustainable-development-goals/

to technical expertise, developing a dedicated capacity to support strengthened international and country level capability, developing standard operating procedures and protocols for disease outbreak and increasing resilience and response capability through training, supervision and mentoring.

10. PHE will also aim to develop sustainable institutional linkages, through development of long term partnerships and professional relationships at country and regional level which, as they are of mutual interest to the UK and our partners, will endure beyond the period of project funding as the foundation of global health security networks that will enhance global, and country level health security and strengthen UK preparedness and capacity to respond to future threats.
11. PHE has capability to provide a wide range of technical inputs to WHO at HQ and regional (WHO AFRO) level, **providing all-hazards health protection technical expertise** to support and enhance WHO's IHR strengthening efforts globally, particularly with Joint External Evaluation and National Action Planning activities. PHE will also provide targeted support to 5 countries (Ethiopia, Nigeria, Sierra Leone, Pakistan and Myanmar). Through regional support to WHO, PHE technical expertise will extend global health security capacity building across Africa, working with WHO to reach countries that may otherwise be neglected in terms of donor support. This will strengthen regional resilience networks for prevention, detection and response to future outbreaks.
12. The project will focus on strengthening public health systems through providing technical expertise and input to build the system architecture at national and supra-national levels. This approach aligns with PHE's strengths and operating model, as a 'matrixed' national public health institute (NPHI) with high levels of integration across the organisation: local with national, epidemiology with laboratory, frontline work with support functions; threat-specific expertise with an all-hazards approach.
13. The project interventions are summarised in Table2 and Table 3.

Business case outline:

14. The strategic case sets out the rationale for the project's approach and selection of countries, providing the design phase findings and recommendations.
15. Emphasis is placed on the importance of working in partnership across HMG to align with other global health security projects, and with other agencies, governments and donor bodies. The strategic case argues that PHE's technical expertise in public health system development, already acknowledged by WHO, needs to be appropriately recognised and more effectively deployed as part of the UK's contribution to strengthening global health security, arguing that this will maximise development impact whilst also bringing the co-benefit of a strengthened UK capacity and resilience to respond to all-hazards.
16. The potential of UK funding to leverage other donor support and multiply funding for global health security is considered, noting that it is acknowledged that commitments by the World Bank and others will not be sufficient to overcome all challenges in the near term.[2] However, targeted UK technical investment can make a real difference quickly, reducing the exposure of the international community to potential infections disease threats.

Appraisal case

17. The appraisal case considers feasible options for achieving the objectives of the project and compares direct delivery by PHE through WHO with alternative supply mechanisms such as sub-contracting work, allocating funding directly to WHO or supporting the work of other agencies (such as US CDC). Costs and benefits and value for money are considered, concluding that effective deployment of PHE expertise will enhance WHO capability, build the number of capable agencies operating globally, counterbalancing the risks associated with over-reliance on US CDC. The co-benefits for the UK in enhanced PHE engagement globally are also acknowledge, with UK capacity to respond to both international and domestic health threats strengthened.

[2] See report of discussions with World Bank REDISSE programme in Nigeria Scoping Mission Report March 2017 (supporting document).

Commercial case

18. The commercial case sets out the targeted approach for the investment of the funds available to this project in the selected countries and regions, with the priorities and direction determined based on the health need, vulnerability and gaps in IHR compliance and existing funding. In particular, we link to other UK funding and delivered activities already in progress in the intervention countries to ensure a One-HMG approach.
19. The vast majority of funds will be used to release PHE's technical experts to project tasks and outputs, strengthening professional and institutional linkages between the UK and a global network supporting health security. This will help ensure that the bilateral and multilateral relationships built through the project are sustained beyond the project funding with the UK government, through PHE as an executive agency of the Department of Health effectively networked in to the global health security architecture.

Financial case

20. This project is funded via ODA monies, with clearly defined criteria to be met for reporting and accounting for expenditure. Specifically, all spending must further the sustainable development and welfare of developing countries and deliver value for money. We outline the budget, spend profile, monitoring and the operation of financial disbursements.

Management case

21. The management case outlines the resource and skills required to deliver the programme, including how the planned suite of investments will be performance managed and how delivering to quality, time and budget will be assured.

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Acronyms

AAR	After Action Review	ISA	Institutional Stakeholder Analysis
Africa CDC	Africa Centre for Disease Control	JEE	Joint External Evaluation
AMR	Antimicrobial resistance	LMIC	Low and middle income countries
BMGF	Bill and Melinda Gates Foundation	MOU	Memorandum of understanding
CDEL	Capital Departmental Expenditure Limit	NA	Not applicable
CVC	Core Voluntary Contribution	NCDC	Nigeria Centre for Disease Control
DAI	Development Alternatives, Inc	NIS	National Infection Service
DEFRA	Department for Environment Food and Rural Affairs	NPHI / NPHA	National Public Health Institution / Agency
DFID	Department for International Development	ODA	Official Development Assistance (UK aid budget)
DH	Department of Health	OECD	Organisation for Economic Co-operation and Development
DRR	Disaster Risk Reduction	OIE	World Organisation for Animal Health
EBS	Event Based Surveillance	PHE	Public Health England
EDRM-H	Emergency and Disaster Risk Management for Health	PPM	Programme and Project Management
EOC	Emergency Operations Centre	QA	Quality Assurance
EPRR	Emergency Preparedness, Resilience and Response	RCDC	Regional Centre for Disease Surveillance and Control (West Africa)
EVD	Ebola Virus Disease	RDEL	Resource Departmental Expenditure Limit
FAO	Food and Agriculture Organisation	SARS	Severe Acute Respiratory Syndrome
FCO	Foreign and Commonwealth Office	SEARO	South-East Asia Regional Office
FETP	Field Epidemiology Training Programme	SOP	Standard Operating Procedure
GDP	Gross Domestic Product	SRO	Senior Responsible Officer (within DH)
GHS	Global Health Security	SWOT	Strengths, Weaknesses, Opportunities, Threats
GOARN	Global Outbreak Alert and Response Network	TAG	Technical Advisory Group
HMG	Her Majesty's Government	TDDAP	Tackling Deadly Diseases in Africa Programme
HMT	Her Majesty's Treasury	TORs	Terms of Reference
IANPHI	International Association of National Public Health Institutes	UN	United Nations
IATI	International Aid Transparency Initiative	USCDC	United States Centers for Disease Control and Prevention
ICAI	Independent Commission for Aid Impact	USP	unique selling point
IDA	International Development Act	VFM	Value for money
IDSR	Integrated Disease Surveillance and Response	WHO	World Health Organisation
IHR	International Health Regulations	WHO AFRO	World Health Organisation Regional Office for Africa
		WB	World Bank

Strategic Case

This section sets out the case for the PHE led, DH and UK government intervention, the overarching context and the issue to be addressed.

KEY MESSAGES

- Improved global health is in the interest of the UK – it reduces the risk of infectious disease epidemics to the UK, boosts economic and trade activity and brings increased prosperity at home and abroad
- Compliance with WHO IHR (2005) provides a mechanism for ensuring that poorer countries are able to prevent, detect and respond to public health events, and effectively communicate emerging threats, thus protecting themselves and the wider global community
- Gaps in global capacity, coordination and IHR compliance remain, specifically for an all hazards approach
- The UK considers the IHR to be 'the primary international instrument' to help protect countries against the international public health risks and public health emergencies.
- This project enables the UK to work with international partners to tackle public health threats at source through strengthening IHR
- PHE is a world leader in developing innovative solutions to public health challenges and takes an all hazards approach to the prevention, detection and control of public health risks.
- PHE, as a technical agency of the UK government will forge international linkages and networks that will endure beyond the project funding, which will continue to serve UK and global interests to maintain a resilient global health security system under the leadership of WHO.

Background and problem statement

Introduction

1. The continued failure to develop resilient health infrastructure and public health systems in much of the world leaves us all vulnerable to future outbreaks and other public health emergencies. The increasingly global nature of the world makes rapid disease transmission a significant threat. Strengthening global health is in the interest of the UK and other developed countries – it reduces the risk of infectious disease epidemics reaching our shores and it boosts economic and trade activity, bringing increased prosperity at home and abroad[3].
2. The impact of infectious disease outbreaks and other public health emergencies can be devastating to the social and economic situation of countries. Major pandemics erode hard-won gains against poverty, in human development and economic growth. The overall impact of the Ebola crisis on Guinea, Liberia, and Sierra Leone has been estimated at $2.8 billion[4].
3. The 2003 SARS outbreak led to the development and implementation of the WHO IHR (2005). Although many disease detection and control improvements have been implemented in the years since, important gaps in global capacity and coordination remain, specifically global capacity for an all hazards approach. The need to strengthen and monitor national systems is critical to achieving full compliance with IHR (2005)[5].
4. Global health threats impact across different sectors and therefore this programme will draw skills and expertise from across government; providing a One-HMG approach. Effective cross-

[3] Performance Agreement United Kingdom of Great Britain and Northern Ireland and the World Health Organisation. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/587155/Performance-Agreement-UK-WHO-27Jan2017.pdf

[4] World Bank 2014-2015 West Africa Ebola Crisis: Impact Update http://www.worldbank.org/en/topic/macroeconomics/publication/2014-2015-west-africa-ebola-crisis-impact-update (accessed 23 May 2017)

[5] Ijaz K[1], Kasowski E, Arthur RR, Angulo FJ, Dowell SF International Health Regulations--what gets measured gets done Emerg Infect Dis. 2012 Jul;18(7):1054-7https://www.ncbi.nlm.nih.gov/pubmed?cmd=Retrieve&db=PubMed&list_uids=22709593&dopt=Abstract

government working in the UK will help ensure a ‘‘One Health’’ approach to human and animal disease threats and an all hazards approach to management of disasters.

UK Aid Strategy 2015

5. The UK 2015 Aid Strategy outlines four strategic objectives, one of which is to strengthen resilience and response to crises[6]. This includes:
    a. additional investment in science and technology to address global public health risks, such as infectious diseases of epidemic potential, strengthening the public health systems of vulnerable countries and regions and to support multinational agencies, specifically the WHO, to ensure they can maximise these new innovations.
    b. Improving compliance with the WHO IHR (2005) as a mechanism for ensuring that poorer countries are able to prevent, detect and respond to public health events, and effectively communicate emerging threats, thus protecting themselves and the wider global community.

Global Health Security

6. Significant outbreaks of disease and other public health emergencies are amongst the highest impact risks faced by any society, threatening lives and disrupting public services and the economy. For example, the 2003 SARS outbreak cost an estimated $30 billion globally. This is true **whether incidents occur naturally, such as pandemic influenza or emerging infectious diseases, through an accidental release, or as the result of a deliberate biological attack.** Disease outbreaks in animals or plants can be equally significant in terms of economic, environmental and social impact.
7. Such threats are not constrained by international borders, and the UK, a global outward-facing nation is exposed to these risks both at home and overseas. **This project enables the UK to work with international partners to tackle such threats at source and so helps secure health internationally whilst also reducing risk for the UK and its people**[7] .
8. The UK’s ability to provide high level technical capacity and leadership in supporting health system strengthening and responding to global health threats has been demonstrated through recent events such as Ebola and Zika. The UK cross-government response to the West Africa Ebola outbreak was acknowledged as highly effective, and lessons from the outbreak response will be used to inform future responses to health and humanitarian emergencies[8]. The collaboration between UK health agencies will further strengthen cross-government working, help consolidate global health skills and competencies that already exist across UK health agencies and ultimately contribute to both global and UK national health security and prosperity.
9. The UK’s commitment to global health security was reflected in the 2015 Spending Review which saw the creation of the Ross Fund, a portfolio of global health security related projects, led by either DFID or DH. The Fund is in total worth £1bn, of which £461m was allocated to DH to deliver:
    a. The Fleming Fund - £265m to enhance the ability of developing countries to track drug resistance through enhancing surveillance capability and developing laboratory capacity
    b. Vaccines and Bio-preparedness - £126m to develop vaccines to tackle diseases of epidemic potential, and build broader capability and bio-preparedness
    c. AMR Innovation Fund - £50m to fund innovative research into tackling drug resistance
    d. Rapid Support Team - £20m to fund public health capacity that can be deployed to respond to outbreaks at 48 hours’ notice.
10. The IHR funding offers the opportunity to create synergy and add value across this portfolio of projects. The work of the Rapid Support Team, operated jointly by PHE and the London School of Hygiene and Tropical Medicine provides a link between the immediate response to a crisis and the

[6] UK aid: tackling global challenges in the national interest. November 2015
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/478834/ODA_strategy_final_web_0905.pdf
[7] PHE Global Health Strategy, 2014-19,
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/354156/Global_Health_Strategy_final_version_for_publication_12_09_14.pdf.
[8] Science and Technology Committee report UK lessons from Ebola
https://www.publications.parliament.uk/pa/cm201516/cmselect/cmsctech/469/46902.htm

longer term actions needed to strengthen systems to minimise future risk. AMR is a key component of the International Health Regulations and both AMR and IHR require a functional laboratory network and diagnostic capability as well as strengthened public health capacity. The technical capacity needed for vaccines, their development and bio-preparedness will draw on some of the same sets of skills as needed to strengthen IHR capacity. This IHR funding thus complements and enhances this large portfolio of DH-led ODA funded work and ensuring synergy will be a priority. Additionally, £16m was allocated to DH/PHE to fund this project on international health systems strengthening in LMICs, from ODA funds.

11. This project also has benefits for the UK, including:
    a. building the UK's resilience to global threats through strengthened international networks which provide advance notice of threats and can elicit an early response;
    b. increased experience and technical capacity of UK experts enhancing our ability to deploy internationally and act at home to future outbreaks;
    c. savings will be realised through avoided or better managed outbreaks (for example the UK Government spent £427m on responding to Ebola;
    d. minimising the risk of infection spreading to the UK, and
    e. enhancing UK reputation in global public health.

World Health Organization (WHO)

12. The WHO is the lead agency in the international health system and is responsible for providing leadership on global health issues. Its role as an agent for change is well recognised by the UK government, however there is a perception that WHO's performance has fallen short of the international community's expectations in recent major health events such as the 2013 – 2016 West Africa Ebola outbreak.[9]
13. The UK is committed to strengthening the WHO, and has reiterated this commitment at this year's G7, G20 and World Health Assembly meetings. Ensuring that WHO has the organisational and technical capabilities to continue to play a leadership role in global health is critical for global health security. UK support for WHO prioritises health system strengthening, antimicrobial resistance, priority diseases and IHR strengthening.[10]
14. Much of WHO's technical capacity comes from expertise within its member states, with experts convened through advisory groups or mobilised in support of WHO-led missions. PHE staff already play an important technical role in support of WHO, particularly on infectious diseases, and PHE has significant involvement in ongoing WHO strengthening activities, such as providing designated national or regional laboratory capacity for pathogens including Influenza, SARS, and Polio, and working as collaborating centres for various infectious diseases, chemical incident response, and global health security.
15. Deploying PHE staff in support of WHO can come at a cost to the UK, however, with limited capacity within PHE to back-fill for absences which reduces ability to respond to appropriate requests without risks to service delivery at home. More effective UK support to WHO will be possible if the costs of engaging can be covered. This would enhance PHE's ability to make world leading expertise available as needed, whilst allowing that expertise to be recognised internationally and further developed through greater experience. The value of a strengthened PHE collaboration with WHO is therefore two-fold; meeting WHO and its member states' needs, while enhancing the UK's international reputation and global experience.

The World Health Organization International Health Regulations (2005)

16. **The UK considers the IHR to be 'the primary international instrument' to help protect countries against the international public health risks and public health emergencies. This project will help strengthen IHR capabilities in LMICs and support regional bodies to implement IHR requirements.**

[9] Report of the Ebola Interim Assessment Panel 7 July 2015. WHO http://www.who.int/about/finances-accountability/evaluation/Ebola-Interim-Assessment-Panel.pdf?ua=1 (accessed 23 May 2017)
[10] Performance Agreement United Kingdom of Great Britain and Northern Ireland and the World Health Organisation DFID January 2017 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/587155/Performance-Agreement-UK-WHO-27Jan2017.pdf

17. The IHR is a legally-binding agreement which contributes to global public health security by providing a framework for the coordination and management of events that may constitute a public health emergency of international concern[11]. The IHR takes an all-hazards approach including chemical and radiological hazards alongside communicable diseases of known and emerging origin.
18. The stated purpose and scope of the IHR are "to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade"[12,13].
19. The new WHO monitoring and evaluation framework for IHR compliance uses a combination of instruments as an iterative process including Joint External Evaluations (JEE) to inform funded National Action Plans agreed with stakeholders[14]. This provides an objective platform to identify country needs and evidence base to measure progress and success.
20. PHE are committed to continue to work with WHO to support this and are using this framework to inform this initiative.
21. Further information on the IHR is contained in supporting document 1.

PHE and IHR capacity building

22. PHE is one of the largest National Public Health Institutes (NPHI) worldwide and is a member of the International Association of National Public Health Institutes (IANPHI).[15] It has a diverse workforce connected through professional and academic partnerships to health systems across the world. **PHE is a world leader in developing innovative solutions to public health challenges and takes an all hazards approach to the prevention, detection and control of public health risks**. With 5,600 staff members, PHE is a "matrixed" NPHI with high levels of integration across the organisation: local with national, epidemiology with laboratory, frontline work with support functions. It is therefore uniquely positioned to strengthen health systems to improve IHR compliance through the contribution of technical expertise, at regional and national level. Countries particularly value technical input from practitioners who are actively engaged in service deliver in their own country as well as providing support internationally and who speak from daily experience rather than an academic perspective or that of a 'full time international consultant'.
23. PHE can provide a wide range of high level public health skills and technical expertise[16] to strengthen WHO's technical capabilities and through them help support more vulnerable under-resourced countries. With eleven WHO collaborating centres, and national centres with expertise in infectious diseases, chemicals and environmental hazards and radiation, emergency preparedness and laboratory services, PHE has the technical capacity to contribute to all IHR action areas through an all hazards approach.
24. PHE already has IHR strengthening projects ongoing in Sierra Leone and Pakistan. The Sierra Leone project Resilient Zero, was funded by a DFID bilateral programme in response to the Ebola outbreak. The Pakistan project, also DFID-funded is a direct bilateral programmes focusing on strengthening disease surveillance at federal level, in Punjab and KP provinces of Pakistan. DFID funding for these existing programmes will end in 2017 – 2018, with the potential for extension. Continued IHR strengthening activity will build on, learn from and complement these existing work programmes. Further information on these PHE IHR strengthening projects is in supporting document 2.

[11] About IHR. World Health Organization. 2016 [cited 11 August 2016]. Available from: http://www.who.int/ihr/about/en/
[12] WHO, International Health Regulations (2005) Second edition, http://www.who.int/ihr/publications/9789241596664/en/
[13] Report of the Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response, WHO, http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_21-en.pdf?ua=1
[14] IHR (2005) Monitoring and Evaluation framework WHO http://www.who.int/ihr/publications/WHO-HSE-GCR-2016-18/en/
[15] IANPHI – International Association of National Public Health Institutes links and strengthens government agencies responsible for public health, leveraging the experience and expertise of its member institutes to build robust public health systems. http://www.ianphi.org/index.html
[16] PHE International public health development and emergency response: capability statement. July 2015 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/449413/global_capability_statement_20150728.pdf

The importance of UK support

25. This project is a key part of the cross-Whitehall strategic objectives for Global Health Security and will complement and support other strands of the UK's support, including those aimed at reducing the global risk of AMR. The project will operate under the guiding principles of that work, which are:
    - To address threats at source in a sustainable way, i.e. support low-income countries to develop stronger health systems (including meeting IHR obligations) and to help the WHO and other international organisations be more effective in supporting implementation of the IHR
    - Ensure prioritisation and strategic risk based decision-making, use or build capability where needed, but not doing everything, everywhere and setting out our clear expectations of others
    - Make use of the full suite of cross-HMG levers to deliver Global Health Security objectives – from financing and programme delivery to international influencing and diplomacy
    - Focus explicitly on benefits (health and wider socioeconomic outcomes and prosperity) of health security for poor people in low-income countries as well as on protecting the UK
    - Promote country ownership and accountability, embed international support into national plans and systems, ensure efforts are context-appropriate and support future sustainability
    - Take a 'One Health' (animal, human and environment) approach.
    - Focus on value for money (VFM) and evidence of what works: work with international partners to ensure that UK and others' efforts to support countries to strengthen health security are efficient, effective and sustainable; innovate where needed and ensure funding is secured by the country government commitments and partnerships with other donors.

Cross HMG strategic priorities and global commitments

26. This project fits well within UK commitments to support global health security as summarised in Figure 1 below.

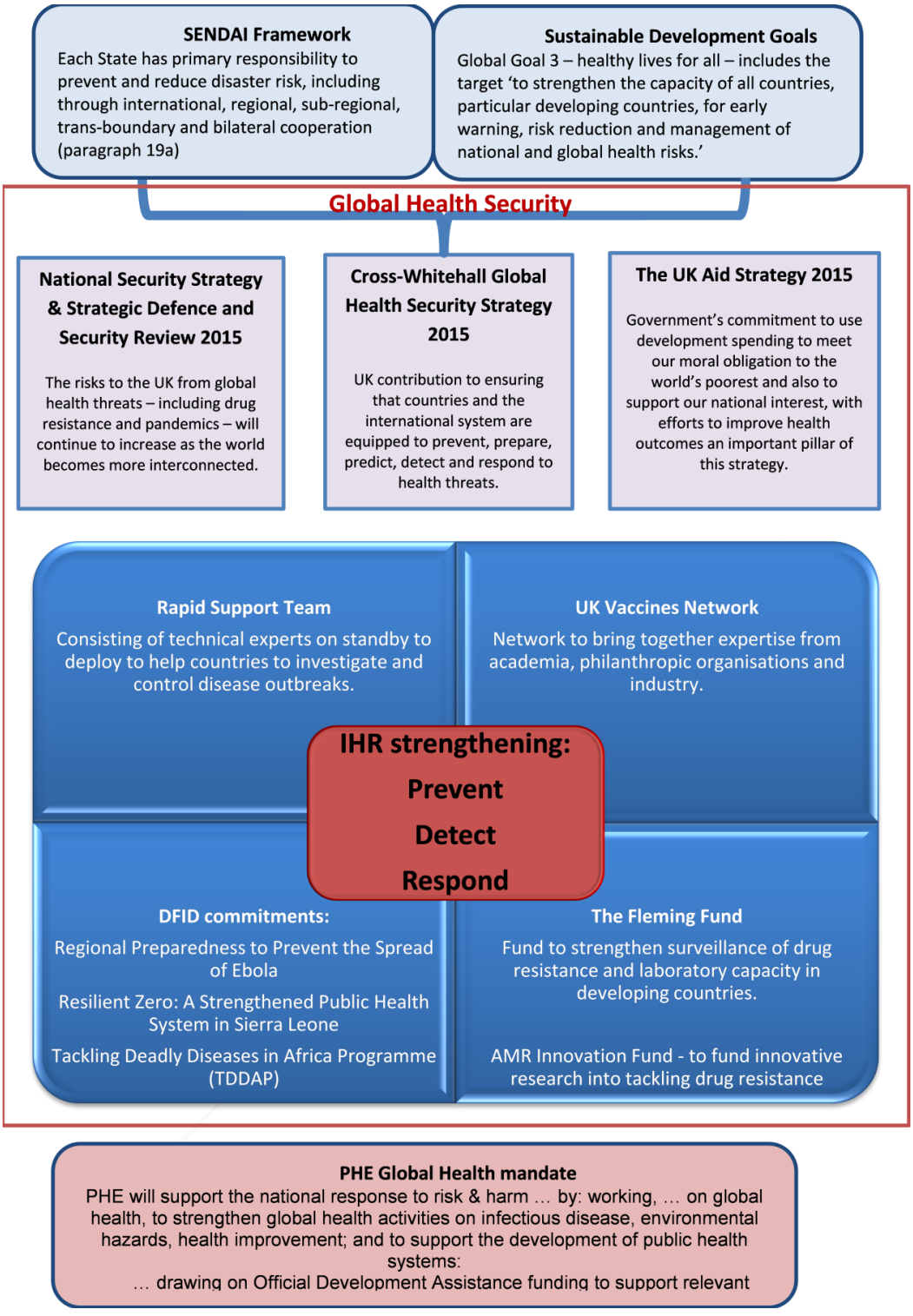


Figure 1: UK Government Global Health security commitments

Where we are now: Progress of project to date

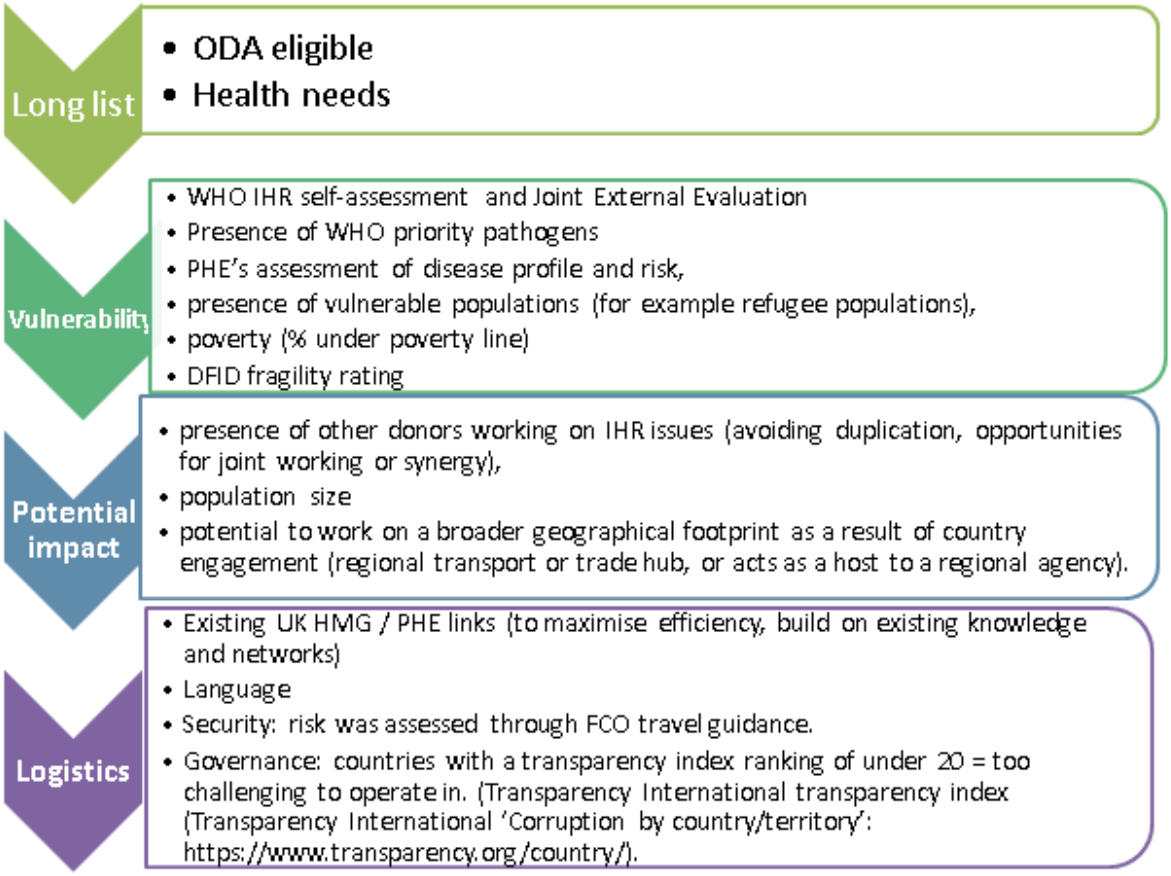
Figure 2: Project timeline

The strategic framework and design phase business case

Country selection

27. This built on the initial project bid including potential delivery options, a set of selection criteria to identify up to four target countries, and the scope for the country assessments including scoping missions
28. The country shortlist was developed using the methodology below in Figure 3, agreed by the Global Health teams across PHE and DH. This approach, is broadly in line with the WHO's methodology for identifying IHR priority countries. Detailed discussion of the selection criteria are contained in supporting document 3.

Figure 3: Country selection process



Designing the project's delivery approach

29. The different options for IHR strengthening were:

Option	Definition
Option 1: Strong country focus with predominantly bilateral inputs	This option requires the identification of four countries where PHE has the potential to develop a strong bilateral programme of support, ideally establishing a country office and providing a portfolio of technical support to build the capacity of the lead national disease surveillance and control agency. The approach would include scoping of current capacity and needs and of other donors support, with a view to identifying gaps where the UK would have a comparative advantage in providing bilateral technical support. The approach would include close working with WHO in-country, but there would be no complementary regional or global action in support of neighbouring countries.
Option 2: Country focus, with complementary investment in regional health security institutional capacity building	This option would similarly identify four countries for potential engagement on the basis of need and gaps, but would also assess national global health security capacity within the context of regional capacity and the potential threat of disease transmission from neighbouring countries. A balance of investment between direct support to national institutions and investment to build the capacity of regional and inter-country coordination mechanisms would be needed. In order to build capacity and strengthen functioning of regional public health institutions, some funding or technical support would need to be channelled through other organisations.
Option 3 Predominantly investing with and through WHO and regional institutions, with no direct bilateral country funding	This option would focus on building the capacity of WHO and regional institutions, which have the mandate to support IHR compliance. The UK could nominally attribute its investment against four identified countries, but there would be limited direct investment by the UK, with funding being channelled predominantly through other organisations (such as WHO).
Option 4 Doing nothing (counterfactual)	The option of doing nothing additional in support of IHR and continuing existing approaches is dismissed given the high level political commitment that the UK has made through G7 statements, and the high human and financial risks identified in failing to act to strengthen global health security.

See supporting **document 3** for details

This strategic framework and design phase business case was presented to the DH Global Health Security programme board, the Minister for Public Health and the Chief Medical Officer in November 2016. This proposal of a funded project design phase to further develop **option 2 (country focus, with complementary investment in regional health security institutional capacity building)** [17] was approved with a number of conditions.[18]

Delivering the design phase

30. The design phase considerations set out by the DH Global Health Security programme board were distilled into the following design phase guiding principles:
    - ensures support to the countries with greatest need
    - supports the leadership and technical capacity of WHO
    - contributes where UK and PHE add unique value and

[17] A full breakdown of the spend profile is provided in the Finance section of this Business Case. To note that due to OECD accounting rules for ODA (over which HMG has no control), ODA funding has to be disbursed in the calendar year it is allocated, as opposed to the financial year (April to April), as is the case with all other Government expenditure.
[18] Internal correspondence. Email correspondence following Global Health Security Programme Board meeting November 2016.

- add value to existing or proposed UK activity, while avoiding duplication.

31. Underpinning these principles were **the need for an all-hazards and 'One Health' approach, long-term sustainability both in terms of funding and technical support.** The appraisal case section identifies how these have been addressed.
32. Building on the principles set out above, the focus of the design phase has been to consider the balance between bilateral and regional support in order to explore the model set out in option 2.
33. This process included scoping missions and WHO engagement, and an independent Institutional Stakeholder Analysis (ISA).

Scoping missions and WHO engagement

35. The design phase explored bilateral engagement with the six shortlisted countries to determine how PHE could provide regional and sub-regional strategic support on IHR, with identified countries acting as entry points to gain wider cross-regional impact. Scoping missions were conducted to better understand existing IHR capacity, the country's potential as a hub to provide regional resilience activities, and the most effective and efficient use of PHE resources. All scoping missions included engagement with DFID, WHO country offices and other key partners e.g. WHO regional offices, US CDC and Africa CDC.
36. A standardised approach was taken to ensuring the conditions for the design phase approval (see supporting document 4: Scoping missions ToR) were addressed. A report was produced for each mission, comprising findings, a SWOT analysis, priority needs for IHR compliance and options for PHE support in country (see supporting documents 5: Scoping mission report summary).
37. Simultaneously, discussions with WHO identified ways to support WHO's IHR activities at national, regional and global levels, and clarify requests and expectations. There have been continuing interactions with WHO AFRO and DFID (who are also working closely with WHO through the TDDAP programme). The scoping missions and WHO discussions were followed by an options appraisal process in March 2017, consisting of an internal PHE-wide workshop, followed by a cross-government workshop, (see supporting document 6 Options Appraisal workshop report). The recommendations from the options appraisals workshops were presented to the DH Global Health Security Programme board in April 2017 and approval given to progress to full business case development.

Institutional Stakeholder analysis

38. The design phase included a political economy and institutional analysis of each country and regional and global disease surveillance and control mechanisms for the relevant geographic areas.
39. The purpose of the ISA was to answer the following questions:
    - Who are the key actors engaged on IHR strengthening work in the African regions; and what are the relationships between them? How do the goals, priorities, roles and responsibilities of these actors differ?
    - What are the institutional barriers and facilitators to IHR implementation currently? E.g. has IHR been a priority? If not, why not? Which institutions are prioritising IHR strengthening?
    - What are the impediments to the existing stakeholders realising IHR benefits at a regional level?
    - Which organisations should PHE prioritise partnering with to leverage IHR implementation on a regional level?
40. The key messages from the ISA were that this project should:
    I. Develop a balanced portfolio of work to strengthen both national IHR compliance and the regional/sub-regional architecture, with a clear focus on national engagement;
    II. Stimulate meaningful and sustainable change through improving institutional and systemic functionality though a long-term national presence;
    III. Ensure adherence to principles of aid effectiveness, alignment to national governments' plans and strategies and to build on leadership by national counterparts;
    IV. Evolve PHE's humanitarian response to a sustainable development and institutional strengthening paradigm;

V. Engage through PHE core competencies to both complement other initiatives and fill discrete gaps thereby ensuring VFM; and,
VI. Effectively relate with other key actors and initiatives, including where PHE brings particular value as part of the "One HMG" approach in this space.

The full ISA report is available as supporting document 7.

These approaches to the design phase ensured that the guiding principles recommended by the DH GHS programme board were applied as summarised in Table 1 below.

Table 1: Project design principles

Guiding principles	How was this applied in the design phase
Ensure support to the countries with greatest need	Independent needs assessment (JEE reports), stakeholder consultations during scoping missions, engagement with DFID health teams
Support the leadership and technical capacity of WHO	Partnership with WHO Geneva, WHO AFRO and WHO Country Offices
Contribute where UK and PHE add unique value	Stakeholder engagement and consultation. ISA, scoping missions
Add value to existing or proposed UK activity, while avoiding duplication	Engagement with DFID TDDAP, DFID country offices, Alignment with other cross HMG activity including Fleming Fund and the UK Public Health Rapid support Team

Recommendations

41. The recommended option was to proceed to fully costed business case development based on a combination of combined regional and bilateral engagement as follows:

1. New IHR focused bilateral engagement with regional focus for Nigeria and Ethiopia
2. Fully costed engagement to supplement existing IHR-related HMG activity in Pakistan and Sierra Leone
3. Fully costed short term support through the JEE and National Action Planning process for Myanmar and then review and longer term engagement
4. Fully costed IHR focused technical assistance to WHO
5. Alignment with other HMG GHS activities
6. No further engagement with Kenya under IHR programme or low level support to developing Kenya NPHI through remote engagement or contingent on outcome of planned institutional analysis or specific request from WHO AFRO

42. These recommendations were premised on the following key findings:

- **Nigeria:** Significant IHR capacity needs identified, strong political will, burgeoning national public health institution, regional links (through Africa Union RCDC[19] and ECOWAS[20]) opportunities to leverage additional funding and ensure project sustainability through World Bank REDISSE[21] fund
- **Ethiopia:** Significant IHR capacity needs identified through recent JEE; strong political engagement in IHR, good potential as regional hub through Africa CDC (can address all-hazards public health issues; developing NPHI
- **Sierra Leone:** Continuing IHR capacity needs and additional work required to achieve sustainable improved laboratory capacity; opportunities to strengthen NPHI, working in partnership with others such as IANPHI; existing PHE presence in

[19] RCDC Regional Centre for Disease Control
[20] ECOWAS Economic Community of West African States http://www.ecowas.int/institutions/
[21] REDISSE Regional Disease Surveillance Systems Enhancement http://projects.worldbank.org/P154807?lang=en

country; important potential collaborations with international partners e.g. China CDC, to ensure sustainability and maximise impact. This would also further other HMG strategic aims by building stronger China-UK health related partnerships[22]

- **Pakistan:** Continuing significant IHR capacity needs (e.g. Polio); current strong political will , and the option to build on existing PHE IHR strengthening programme through contribution of targeted training and expertise; ensuring project sustainability
- **Myanmar:** Significant IHR capacity needs identified through recent JEE; great political will, potential to join forces with other HMG partners e.g. DFID with shared resources and possible funding options and with US CDC to develop the NPHI.

[22] Minutes of 3rdChina UK Global Health Dialogue 15 September 2015, London

Appraisal Case

This section explores how we will address the need identified in the Strategic Case in a way that optimises value for money. It appraises options for achieving the project objectives and addressing the guiding principles recommended by the DH GHS programme board.

KEY MESSAGES

- PHE proposes
  - working bilaterally to build strong national systems underpinning regional public health resilience, and concurrently providing all-hazards expertise to regional and global institutions, specifically WHO.
  - targeted support to countries where IHR needs have been identified, and where technical expertise can be extended through these countries to additional vulnerable and in-need countries where direct bilateral engagement is less feasible.
  - developing long-term institutional partnerships, focusing on WHO, and, in the Africa region, through WHO AFRO with Africa CDC and working closely with other international partners such as US CDC, World Bank and China CDC.
- Ensuring sustainable long-term professional linkages, institutional relationships with the NPHIs, mentoring support to public health leaders in the regions of engagement and on-going institutional support for technical functions.
- **PHE does not intend to 'do for' or 'pay for', but to 'work with' and support countries to develop their own expertise. In addition, the project aims to support a wider range of vulnerable countries through the development of tools and resources that can be rolled out through WHO.**
- Enhanced UK and priority country technical expertise will endure beyond the project funding, as will the networks of technical linkages developed – this represents a long term continuing return which extends beyond the initial benefit of the short term technical support, and therefore makes for greater efficiency through greater sustainability

Overview

1. Through consideration of all the components of the design phase (scoping missions, assessments, options appraisals and independent institutional stakeholder analysis), this business case makes the case for PHE adopting a combined approach to IHR strengthening:
   - working bilaterally to strengthen IHR capabilities in key countries with the potential to provide resilience to the region, and concurrently providing expertise to regional and global institutions, specifically WHO, to ensure that technical expertise is extended through these institutions to additional vulnerable and in-need countries where direct UK (PHE) bilateral engagement would not be feasible or practical.
   - developing long-term institutional partnerships at both national and regional levels to achieve its IHR strengthening goals, focusing on WHO, and, in the Africa region, collaborating through WHO AFRO with the emerging Africa CDC.
2. This partnership approach will ensure that changes implemented through the IHR project are sustained through long-term professional linkages, capacity building in country, institutional relationships with the NPHIs, mentoring support to public health leaders in the regions of engagement and on-going institutional support for technical functions. In addition, PHE aspires to engage with other international agencies and donors to leverage additional funding to ensure sustainability and cohesion and work with countries to help them take over financial responsibility. For example, continued engagement in Sierra Leone provides a mechanism for close collaboration

between PHE and China CDC. China CDC is in the early stages of developing its global health portfolio and is keen to collaborate with the UK further.

3. The focus of these partnerships is on transfer of public health technical expertise. PHE does not intend to 'do for' or 'pay for', but to' work with' and support partners to develop their own expertise. In addition, the project aims to support a wider range of vulnerable countries through the development of tools and resources that can be rolled out through WHO.

Project goal

4. Based on evidence generated during the design phase, the desired impact of this project is to strengthen public health systems and technical capabilities in ODA-eligible LMICs, global agencies, and in the regional institutions/mechanisms responsible for supporting IHR implementation. Through this, the project will strengthen IHR compliance, and thus contribute to improved global health security and reduce the global impact of public health emergencies.
5. Engagement will be through providing technical support to WHO and Africa CDC as key regional institutions. In addition, the project will work with five key countries – Ethiopia, Nigeria, Sierra Leone, Pakistan and Myanmar - with these countries acting as entry points to gain wider cross-regional impact; to promote an all-hazards and 'One Health' approach regionally, and to co-develop and implement strategies for long-term sustainability, adequate funding and technical support.

IHR capability needs assessment

6. The design phase processes identified areas of need for which PHE, in partnership with other UK institutions has the potential to add value. These areas of need, summarised in Table 2, informed the theory of change and the proposed project inputs.
7. The proposed inputs are defined into the overlapping domains:
    - Service delivery – public health system support
    - Health workforce and leadership
    - Technologies and products – technical support for priority IHR domains
8. The proposed areas of intervention summarised in Table 3, represent the potential areas of input for the project. The details and specifics will be refined through detailed engagement with stakeholders and institutions.

Table 2: IHR capability needs assessment and proposed outline interventions

Country	IHR need	Potential PHE IHR project interventions	Proposed mechanism	Sustainability
Ethiopia	JEE Mar 2016. Priorities for improvement: • IHR leadership & coordination • AMR prevention • Zoonotic disease response • Linking to security authorities • Chemical and radiological events • Surveillance Need to develop capabilities for key role as regional hub (base of Africa CDC) and ensure effective partnership with WHO	National engagement: • Mentoring all-hazards cross-sectoral working practices • Advice on legislative/operational framework for 'One Health'& PH Emergency management • Supporting AMR system strengthening through Ethiopian multi-regulatory body Regional interventions through Ethiopia (via WHO AFRO & AU CDC): • Strengthen post-FETP training & leadership development • Support development of all-hazard plans and regional chemical hazards resource • Support development of joint deployment SOPs between AU CDC & WHO AFRO	Combination of in-country full time senior experts (e.g. consultant), (at least one based on HMG platform and others working remotely/through short-term deployments), embedded within IPHEM (NPHI) and WHO AFRO to support the development of strategy and train public health professionals. These roles will be supported by full time remote senior scientist grade support through short-term deployments, plus a network of PHE expertise, to conduct world-class in-country training and expertise and design resources. In addition, a number of locally recruited staff will be embedded within IPHEM and WHO AFRO (conditional on assurances of sustained funding post 2021). PHE will also access veterinary epidemiology expertise in country, working with DEFRA and DFID's ZELS programme.	Training and knowledge transfer is the core component of PHE's plan. PHE will fund recruitment of additional local resources to build capacity according to needs assessments. Influence within IPHEM and WHO to ensure change and provide continuity. In-country and tailor-made UK based training will be available to local public health professionals. PHE's training programmes are well-established and have been evaluated. Communities of Practice will be established following training for mentoring and public health networks.[23] A core role of the consultant lead in country is to identify potential partnerships and opportunities for funded collaboration to extend the life of the project, and facilitate country ownership.

[23] Siron S; Dagenais C; Ridde V. What research tells us about knowledge transfer strategies to improve public health in low-income countries: a scoping review, International Journal of Public Health. 60(7):849-63, 2015 Nov

Country	IHR need	Potential PHE IHR project interventions	Proposed mechanism	Sustainability
		• Creating surge disease response capacity through developing Ethiopia as a regional training facility for rapid response and developing training materials that could be used across Africa, delivered by Africa CDC and WHO AFRO (potentially with a product that links in to the new WHO training site https://openwho.org/		The creation of surge capacity for rapid response across Africa will link to the UK RST thus creating greater sustainability and an additional source of mentoring/support.
Nigeria	Need to undertake JEE as baseline for WB REDISSE funds Scoping mission identified the following key weaknesses: • Surveillance – strategy, linking lab diagnostics to routine surveillance • Emergency preparedness – no EOC, no all hazards plan, no risk identification • PH labs not linked into functional network • No operational 'One health' platform, • NPHI and West Africa RCDC lack skilled staff for core functions	Engaged in JEE Support development and implementation of post JEE action plan focusing on: • Surveillance - develop a surveillance strategy and a laboratory surveillance system • Emergency preparedness, develop an all hazards EPR plan, a rapid response service and a training and exercising programme • Developing a public health laboratory network • Strengthening the 'One Health' platform, including developing mechanisms for shared animal-human health risk assessment. Support development of NPHI and the West Africa RCDC function	A combination of in-country full time senior experts (e.g. consultants), with at least one based on HMG platform and others working remotely/through short-term deployments, embedded within NCDC and Africa CDC's RCDC to support the development of strategy and train public health professionals. These roles will be supported by full time remote senior scientist or consultant grade support through short-term deployments to conduct world-class in-country training and exercise design resources. There will also be a number of locally recruited staff, who will be embedded within NCDC and RCDC (conditional on assurances of sustained funding post 2021).	Training and knowledge transfer is the core component of PHE's plan. PHE will fund recruitment of additional local resources to build capacity according to needs assessments. Influence within NCDC and the Regional Africa CDC. In-country and tailor made UK based training will be available to local public health professionals. PHE's training programmes are well-established and evaluated. Communities of Practice will be established following training for mentoring and public health networks. A core role of the consultant lead in country is to find potential partnerships and opportunities for funded collaboration to extend the life of the project, in order to provide additional sustainability beyond the currently

Country	IHR need	Potential PHE IHR project interventions	Proposed mechanism	Sustainability
			PHE will also access veterinary epidemiology expertise in country, working with DEFRA and DFID's ZELS programme.	funded project. World Bank REDISSE funding has already been identified as a core source of long-lasting sustainability for IHR development in Nigeria and West Africa. In addition, PHE is building relationships with other international donor agencies such as JICA who are also investing in strengthening IHR capabilities in Nigeria. Locally recruited staff will be employed through REDISSE funding following the end of PHE's project to ensure continuity.
Sierra Leone	• Ensure sustainability of lab systems strengthening developed through Resilient Zero • Continue high level engagement with GOSL and partners to maintain HMG engagement in post Ebola programmes • Support development of NPHI	• Continue workforce development for lab staff • Develop & implement laboratory QA system • Extend lab system strengthening through engagement with other donor partners	Microbiology expertise delivered by in-country consultant microbiologist and lab technician to be based on One HMG platform. Continued access to wider global public health expertise through IHR project pool of technical expertise.	Provide sustainability following the RZ programme. In addition, PHE is already in discussion with a number of partners e.g. Canada Public Health Agency; US CDC; China CDC; CHAMPS to find further opportunities to ensure lasting sustainability after PHE's departure. In addition, through evolving professional partnerships, PHE can promote sustainability in Sierra Leone through linking their developing NPHI with the more established NPHI in Nigeria and Ethiopia, thus providing a forum for sharing best practice and enhancing resilience in the more resource-challenged country, and a model for other partnerships between lower and moderately resourced countries in the region. An effective

Country	IHR need	Potential PHE IHR project interventions	Proposed mechanism	Sustainability
				model could then be extended to East and Central Africa thereby strengthening countries not immediately engaged in this project.
Myanmar	JEE undertaken May 2017, recommendations identified and informing post JEE action planning Weak IHR capabilities in all areas but priorities identified in scoping missions and JEE: • All hazards, 'One health' and AMR • Surveillance systems and reporting • EPR • Workforce development	• Support JEE and National Action Planning process as baseline for future activities. • Bilateral engagement proposed as minimal regional influence • Align with cross HMG engagement: DFID, HEE, Fleming Fund • Support development of NPHI with US CDC • Technical input: surveillance, EPRR – all hazards preparedness & response plans, (AMR – in partnership with Fleming fund)	Short-term targeted deployments of technical expertise to meet key needs/gaps as identified in JEE and NAP. Working with US CDC to support establishment of Myanmar NPHI	Linking with UK HEE led UK Myanmar Steering Group to ensure well-supported and, aligned activities. Working with DFID and wider UK HMG to identify future opportunities for PHE to link to IHR related funded activities in Myanmar e.g. through contributing expertise to Fleming Fund. The possibility of working with DFID's health advisor in country has been discussed. This would ensure a public health focus and oversight of IHR activities. This step will further promote sustainability beyond the project's duration. Country commitment to developing an NPHI with US CDC, China CDC and PHE support
Pakistan	• Funding work in Pakistan through the IHR project will be complimentary to other sources. • Demonstrates PHE commitment to support project currently funded by DFID • Support capacity development of WHO	• Technical support for strengthening surveillance and public health laboratory networks • Workforce and organisational development • Longer term PHE technical support beyond 2018.	Contributing specific lab and surveillance expertise through short term deployments and remote working to deliver IHR strengthening components of Pakistan project. Access to tailored workforce development expertise and resources. Promoting partnership between the SL NPHI and FETP and other more	Funding opportunities already being sought for project continuity by the Pakistan project team.

Country	IHR need	Potential PHE IHR project interventions	Proposed mechanism	Sustainability
	Pakistan office (co-funded by WHO).		established systems in other project countries	
Global and regional agencies: WHO / Africa CDC	Needs identified through engagement with WHO • Continued support to WHO to implement post- Ebola lessons learned • Priority support to WHO AFRO and new WHO Health Emergencies Programme as key routes to improving WHO response to emergencies • Support development of effective collaboration between WHO and new Africa CDC • Support the Monitoring and Evaluation framework for IHR	• Supporting WHO's IHR strengthening processes • Monitoring and Evaluation Framework: Joint External Evaluations and Country Planning processes • Integration of health security and health system strengthening work through health workforce capacity building plan, and targeted training of local health workers. Working with WHO AFRO to develop a regional plan • Establish twinning / exchange partnerships for improvement between national public health institutes (NPHIs) across AFRO region. • Supporting role out and training for EOCs through	Provide WHO with access to a pool of technical expertise for the duration of the project. This will include monitoring and evaluation expertise; senior surveillance and laboratory strengthening expertise; senior chemicals and environmental hazards expertise and access to resources such as ToxBase and NPIS; plus EPRR expertise for developing EOCnet. This expertise will predominantly be UK-based, deploying for WHO as and when needed. PHE will also dedicate specific resources to WHO AFRO – including an Ethiopia or other hub-country-based surge capacity training facility and Africa wide resources, delivered through WHO AFRO and in partnership with Africa CDC; locally recruited resources, and in-country	Working with WHO provides significant sustainability to PHE's IHR strengthening project. WHO is a stable and influential global organisation. By developing WHO's capacity and supporting the development of global IHR resources, PHE supports WHO to extend its reach and expertise to a number of neglected and vulnerable countries. Following the end of the IHR project, PHE will continue to support WHO through long-lasting links such as hosting WHO Collaborating Centres, contributing to JEEs and providing resources and expertise as needed. Resources developed by PHE will be available via WHO online repositories.

Country	IHR need	Potential PHE IHR project interventions	Proposed mechanism	Sustainability
		the WHO EOC-NET initiative • Capacity development at regional and country levels on surveillance and emergency preparedness and response linked to initiatives such as the global health fellows programme, and other appropriate public health technical and leadership programmes	PHE EPRR and chemical hazards, to build capacity across the region.	

Theory of Change for the preferred option

8. The IHR strengthening agenda, including this project, is premised upon strong national public health systems that enable public health threats to be detected, prevented and responded to. Regional (supra-national) public health system strengthening supports national systems, both in their development and in addressing gaps in delivery. These reduce the risk of public health events escalating from local to global threats, such as seen in the 2013-16 West African Ebola epidemic.
9. Strong public health systems provide multiplicative benefits beyond early outbreak detection and response. A public health system provides the architecture for evidence-based strategy and policy, through which evidence-based public health interventions are delivered24. As countries and regions identify their public health threats and needs through strong systems, resources from states, partners and donors can be mobilised to tackle specific needs using effective approaches. Crucially, this recognises that it is not necessary (or even feasible within available resource envelopes) to directly input to strengthen every aspect of a system at once in order to make it robust and effective; instead **incremental strengthening of key strategic areas enable system-wide benefits**.
10. The PHE IHR project will not directly deliver enhanced services for national and supranational public health systems, but instead support partners and agencies with expertise to make informed strategic system developments, to co-develop work programmes, to jointly develop and run simulation exercises to identify system weaknesses and to train public health professionals in skill shortage areas, enabling them to do the same in turn, and building sustainability into the programme. Partnerships for public health system strengthening include those with other UK government departments, including the DFID Tackling Deadly Diseases in Africa Programme (where complementary areas include AFRO-facilitated training to strengthen national systems and emergency response exercises/simulations) and the DH Fleming Fund to tackle antimicrobial resistance (including complementarity in laboratory network system development).
11. This project is focused on systems for **health protection,** the domain of public health practice that the UK Faculty of Public Health describes as addressing communicable diseases, chemicals and radiation, emergency preparedness and environmental health threats[25].
12. Advanced technological inputs to a public health system will not succeed in improving health if the system does not have sufficient connectivity, leadership and resources to absorb and utilise such inputs. The approach of the PHE IHR project recognises this and focuses on strengthening public health systems through both technical inputs and input to build the system architecture[26] necessary for effective delivery. This aligns with PHE's strengths and operating model, as a "matrixed" national public health institute (NPHI) with high levels of integration across the organisation: local with national, epidemiology with laboratory, frontline work with support functions; threat-specific expertise with the all-hazards approach.
13. This theory of change uses the WHO health system strengthening framework[27] in describing programme assumptions, and uses an extension of the US CDC guidelines for public health surveillance[28,29] as the model for the IHR strengthening project ToC. This adaptation recognises the importance of the support functions necessary to develop improved core public health system attributes. **These three interlocking support functions[30] – health system support, workforce**

[24] Bloland P, Simone P, Burkholder B, Slutsker L, De Cock KM. The Role of Public Health Institutions in Global Health System Strengthening Efforts: The US CDC's Perspective. *PLOS Med*. 2012; 9(4):e1001199.
[25] What is public health? UK Faculty of Public Health http://www.fph.org.uk/what_is_public_health
[26] In addition to technical capabilities, system architecture required for effective IHR compliance include leadership, coordination and control, multi-sectoral engagement, one health / all hazards approach to detection, prevention and response to public health events.
[27] World Health Organization. *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action*. Geneva: World Health Organization; 2007.
[28] German RR, Lee LM, Horan JM, Milstein R, Pertowski C, Waller M. Updated guidelines for evaluating public health surveillance systems. *MMWR Recomm Rep*. 2001; 50(1-35).
[29] Phalkey RK, Yamamoto S, Awate P, Marx M. Challenges with the implementation of an Integrated Disease Surveillance and Response (IDSR) system: systematic review of the lessons learned. *Health Policy Plan*. 2015; 30(1):131-143.
[30] Franco LM, Setzer J, Banke K. *Improving Performance of IDSR at District and Facility Levels: Experiences in Tanzania and Ghana in Making IDSR Operational*. Abt Associates Inc. Chevy Chase, Maryland; 2006.

support and technical/technological support, form the basis for categorising inputs to the PHE IHR strengthening project, and understanding their mechanism to impact.

14. Following recognition that the disease-oriented approach to IHR was unsuitable for the growing and varied public health risk from disease resurgence associated with increasing travel and trade, and emerging infectious disease hazards[31], the 2005 IHR revision moved to an all-hazards approach, including chemical and radiological health protection. PHE is committed to this all-hazards approach.
15. Through strengthened leadership, multi-sectoral coordination and taking an all-hazards approach, public health systems can extend to address non-communicable diseases and injuries. Whilst of increasing burden these lie outside the scope of IHR system strengthening but systems to address these may be a collateral benefit of IHR system strengthening. The detailed evidence base underpinning this theory of change is outlined in supporting document 8, Theory of Change.

[31] World Health Organization, 2009. Frequently asked questions about the International Health Regulations (2005). WHO: Geneva. http://www.who.int/ihr/about/FAQ2009.pdf

Theory of change

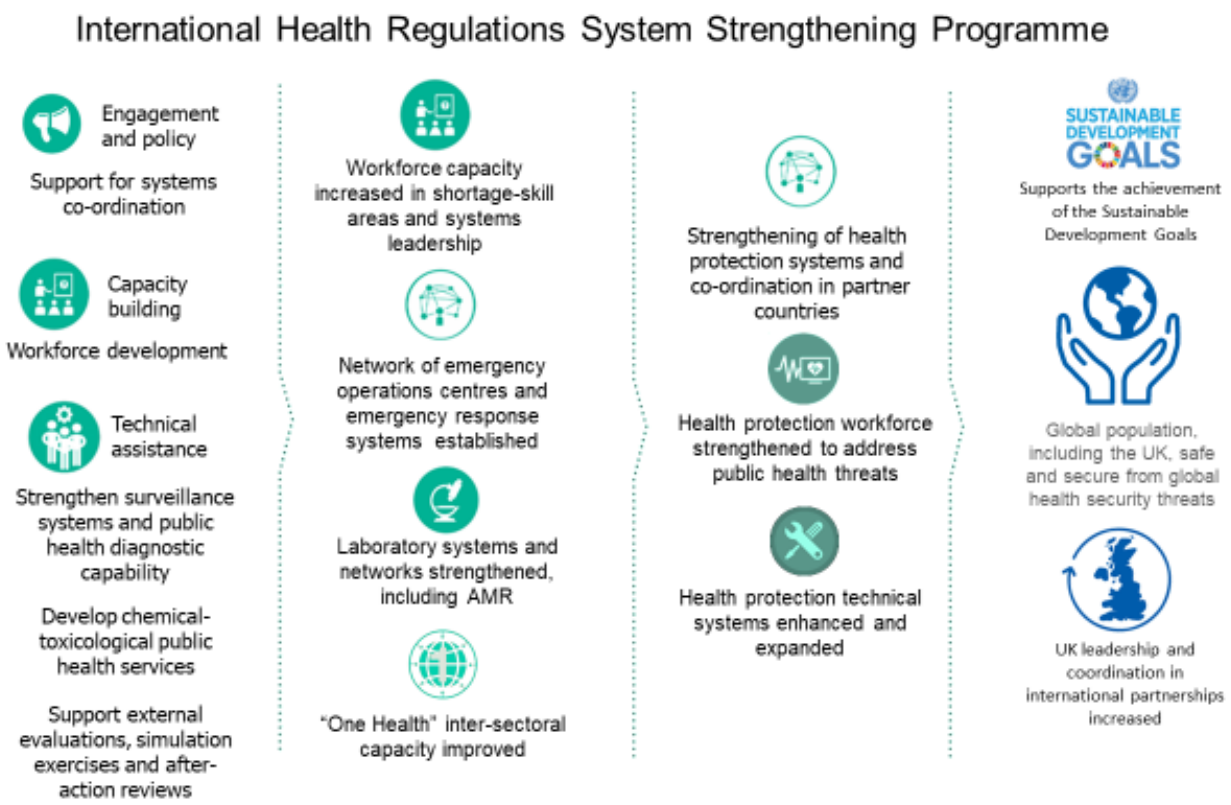


Table 3: Potential project input domains

Proposed input domains	Linked IHR JEE domains[32]	Potential inputs / activities – what are we proposing to do	Rationale – why are we doing this	Approach – how will we do this
Strengthen surveillance systems to improve the control of infectious diseases	**Detect:** • laboratory system, • surveillance, • reporting, • workforce development	• Develop strategies and plans to strengthen surveillance including, enhancing application of IDSR, strengthening and developing indicator[33] and event based surveillance, promoting integration of systems, enhancing skills for data analysis and interpretation and supporting the development of outputs to inform public health actions • Develop systems and information governance frameworks and support the evaluation of surveillance systems, including laboratory requirements • At regional level, support the development of a standardised approach to event based surveillance and cross-boundary approaches to information sharing. • Support and train country and regional epidemiology and surveillance staff	• Core IHR capability – foundation for all effective IHR compliance • Identified as a gap in target country through JEE process and scoping mission • Identified as a priority through scoping missions by stakeholders	• In partnership with country NPHI • Supporting, facilitating and working with other partners • Developing tools and approaching that can be extended for use in other countries via WHO / Africa CDC • All hazards approach
Develop and strengthen public health diagnostic capability and laboratory surveillance	**Prevent** • biosafety & biosecurity • AMR **Detect** • laboratory systems	• Review capacity and systems, identify gaps and produce practical recommendations • Support the development of laboratory surveillance • Support the development and implementation of laboratory SOPs and quality assurance systems • Support and train country and regional public health laboratory staff (training the trainer) • Support the development of laboratory networks	• Core IHR capability • Identified as a gap in target country through JEE process • Identified as a priority through scoping missions by stakeholders • Essential for effective implementation of AMR response initiatives such as Fleming fund, thus intervention here will have a multiplicative impact for other UK government initiatives	• Leverage expertise in disease notification, infection surveillance, and public health network and microbiology from the National Infection Service • Develop with NPHI an appropriate gap analysis covering scope and breadth of existing laboratory capacity and services, and mechanisms for referral of specimens • Share best practice in laboratory management, governance, and

[32] Joint external evaluation tool: International Health Regulations (2005). WHO 2016 http://apps.who.int/iris/bitstream/10665/204368/1/9789241510172_eng.pdf

[33] Indicator-based public health surveillance is a more traditional way of reporting diseases to public health officials. Indicator-based surveillance involves reports of specific diseases from health care providers to public health officials. Such information may be described as structured information because the information obtained is standardized CDC Global Health Protection and Security. https://www.cdc.gov/globalhealth/healthprotection/gddopscenter/how.html (Accessed 26 May 2017)

Proposed input domains	Linked IHR JEE domains[32]	Potential inputs / activities – what are we proposing to do	Rationale – why are we doing this	Approach – how will we do this
				• quality assurance e.g. through sharing experience of gaining ISO 15189 accreditation • Share experience of harmonising hospital and public health laboratory networks , sentinel surveillance structures, and links to public health response
Strengthening of an EPRR system in country.	**Respond** • preparedness, • emergency response operations • risk communication • Linking PH and security authorities	• Support local NPHIs to conduct all hazards threat risk assessment • Design and develop EOCs with the associated operating protocols • Developing a suite of plans and SOPs (generic and threat specific), • Develop a programme of training and exercising • Develop the capability to identify lessons from exercises and real incidents. • Develop a governance system to provide assurance that the EPRR system is providing the required capability and is sustained (develop a set of standards against which the EPRR capability could be reviewed	• Essential IHR capability • WHO Framework for a PH EOC identifies need for an “all hazards approach” to development of incident management systems. • Sendai framework highlights the need for coordinating mechanisms to ensure effective emergency preparedness and response • Testing, exercising are essential for effective emergency management systems • Robust systems will enhance the impact of other UK govt programmes e.g. RST	• EPR plans will be developed to fit existing frameworks and regulation • Develop training tools, curriculum design and the production of training packages • Work with partners, to identify collaborative opportunities through stakeholder engagement and relationship • Develop networks and linkages with WHO AFRO and Africa CDC in support of regional and sub-regional capacity engagement, within the continuum of health system strengthening to EPRR.
Develop chemical-toxicology public health capability	**Other IHR-related hazards** • chemical events	• Support the development of public health emergency response plan for chemicals and environmental hazards ensuring the all hazards approach • Support the development of services and arrangements that may provide specialist advice (e.g. poisons centres, detection and monitoring capabilities) • Assist with the design and development of SOP/MoU to support cooperation and multi-agency collaboration • Develop a chemical training for emergency responders/ public health practitioners (this is covered in costing above under cross PHE training expertise • Surveillance of chemical events	• Core IHR capability • Frequently identified as a gap in most countries JEE priorities • Identified as intervention required to strengthen IHR core capacities (all hazards approach) • Identified as a priority through scoping missions by stakeholders • PH events involving chemicals may arise as a result of accidents, deliberate incidents (Sarin in Japan) or natural occurrences. Such events cross national boundaries directly (e.g. the Hungary toxic sludge affecting the Danube river, 2010) or through imported consumer products (e.g. lead in toys, and mercury in face cream; Czech methanol outbreak 2012).	• In partnership with country NPHI, WHO AFRO and African CDC and other relevant organisations • Supporting, facilitating and working with other partners • Developing tools and approaching that can be extended for use in other countries via WHO / Africa CDC • Share existing resources e.g. Toxbase • Provide training, mentoring & quality assurance systems

Proposed input domains	Linked IHR JEE domains[32]	Potential inputs / activities – what are we proposing to do	Rationale – why are we doing this	Approach – how will we do this
Workforce development	**Prevent** • IHR coordination, communication & advocacy, **Detect** • workforce development	• Develop toolkit for PH workforce audit and gap analysis: • Review of competences, training needs assessment and develop relevant and appropriate training material; deliver training? • Development of public health leadership programmes • Development of Mentoring Programme	• Strengthened national and regional public health institutions and workforces are better able to undertake prevention and response to public health events • Workforce is typically identified as the "weakest link" in the health system of many countries.[34] • The WHO World Health Report (WHR) 2006[35] described the global south's shortage of public health specialists as "dire". • Inadequate training of staff has been identified as a key problem in implementation of IDSR,[36] and an important priority for IHR and public health system strengthening.[37,38]	• Coordinate partnership between UK-wide partners (HEE, FPH) and NPHIs, AFENET and APHS (Association of Public health schools) and Chatham House Global Health Institute[39]
Support the development of 'One health platforms to identify, prevent and respond to priority zoonotic diseases	**Prevent** • Zoonotic diseases **Detect** • workforce development	Identify stakeholders and improve coordination Support the development of inter-sectoral 'One Health' Conduct for Develop, improve / enhance surveillance for key zoonotic diseases • Improve the technical skills of the animal public health workforce • Develop / promote shared human-animal disease risk assessment, surveillance and response • Enhance skills of local workforce through training, workshops, exercises	• Almost all new or re-emerging human diseases of international concern have been zoonotic in origin • Establishing multi-sectoral collaboration mechanisms for human and animal diseases is a core requirement for IHR • Joint human – animal specialist training and development of integrated systems are essential for sustainable one-health platforms and will ensure adequate resourcing of animal health systems	Working with UK partners – APHA, DEFRA, RVC and with international partners (USAID Preparedness and Response[40])

[34] Jimba M, Cometto G, Yamamoto T, Shiao L, Huicho L, Sheikh M. Health workforce: the critical pathway to universal health coverage. In: First Global Symposium on Health Systems Research. Montreux, Switzerland: World Health Organization; 2010.
[35] World Health Organization. The World Health Report 2006: Working Together for Health. Geneva: World Health Organization
[36] Phalkey *et al* 2015, op. cit.
[37] Kasalo F, Yoti Z, Bakyaita N, Gaturuku P, et al. IDSR as a Platform for Implementing IHR in African Countries. *Biosecur Bioterror.* 2013 Sep; 11(3): 163–169
[38] Nsubuga, P., Nwanyanwu, O., Nkengasong, J. N., Mukanga, D., & Trostle, M. (2010). Strengthening public health surveillance and response using the health systems strengthening agenda in developing countries. *BMC Public Health*, 10(1), S5.
[39] In addition to their current Global Health leaders fellowships for West Africa https://www.chathamhouse.org/file/west-africa-global-health-leaders-fellowship, Chatham House Centre on Global Health Security will be collaborating with National PH Institutions in Africa, Universities, and PHE to facilitate a comprehensive capacity building programme for public health workforce including leadership and governance. The aim is to improve the capacity and capability of the region to attain the SDGs including universal health coverage (UHC) and global health security. Initial focus of the programme would be on workforce training related to the effective implementation of IHR in selected/pilot countries. This project will collaborate by offering training packages and technical expertise
[40] http://preparednessandresponse.org/

Proposed input domains	Linked IHR JEE domains[32]	Potential inputs / activities – what are we proposing to do	Rationale – why are we doing this	Approach – how will we do this
		• Developing training, workshops, exercise packages that can be shared across the regions • Contribute to development of one-health emergency preparedness and response plans • Evaluate existing surveillance systems and develop improvement action plans • Develop information-sharing systems between human and animal health laboratories • Develop tools for joint human-animal risk assessment for key zoonotic diseases		
Strengthen WHO capabilities:	• All IHR domains	• Integration of health security and health system strengthening work • Capacity development at regional and country levels on surveillance and response • Continued support to the IHR monitoring and evaluation framework through providing technical input to Joint External Evaluations and Country Planning processes, After Action Review (AAR) and Simulation Exercises • Strengthening the culture of Monitoring and Evaluation in countries	• Strengthening WHO is a UK government priority • Working through WHO enables PHE technical expertise to be extended to those LMICs where the infrastructure, logistics or language barriers prevent direct engagement •	• In partnership with DH, DFID and other UK government engagement with WHO • Prioritising WHO AFRO • Supporting the development of the WHO Health Emergencies Programme with specific technical input and through developing transferable tools

Detailed inputs, activities and performance indicators are outlined in the logframe in appendix 1

Overall approach to implementation

16. PHE seeks to develop long-term institutional partnerships with both national public health institutions and WHO AFRO. This partnership approach will ensure that changes supported through the programme are sustained through long-term professional linkages, mentoring support to leaders of the country NPHIs, and on-going institutional support for technical functions. Given the strong historic linkages between the UK and target countries and regions, and the continuing high level of travel and shared populations, greater health security in these countries and regions is in the UKs interest.
17. In order to develop this partnership working, PHE's approach is to not to **'work for'** but rather **'work alongside'** the NPHIs in these four countries. The objective is to foster ownership by the countries' NPHIs of strengthened IHR capabilities through co-production and capacity-building, thus enabling sustainable and transformative change. Throughout the project, resources developed for the intervention countries will also be adapted and made available to other LMICs within the African region. For example, we intend to develop and test a suite of emergency preparedness and response materials for Ethiopia. Working through WHO AFRO and Africa CDC, we intend to make these materials adaptable and transferrable for other neighbouring countries to improve IHR compliance. The wider region will also benefit from an increased supply of African public health professionals with improved technical capacity available to respond to WHO GOARN requests in the region. This will increase resilience across the Africa region.
18. The project will follow the principles outlined in the Paris Declaration on Aid Effectiveness[41]
    - **Ownership:** *Developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption.*
    - ***Al*ignment:** *Donor countries align behind these objectives and use local systems*.
    - **Harmonisation:** *Donor countries coordinate, simplify procedures and share information to avoid duplication.*
    - **Results:** *Developing countries and donors shift focus to development results and results get measured.*
    - **Mutual accountability:** *Donors and partners are accountable for development results.*
19. The project interventions will apply multilateral and multi-sectoral approaches in line with the following:
    - the principles outlined in the United Nations Sustainable Development Goals 2030 (SDGs)[42]. These include: target 17.16, which recognises multi-stakeholder partnerships as important vehicles for mobilizing and sharing knowledge, expertise, technology and financial resources, to support the achievement of the SDGs; and target 17.17, which calls for the encouragement and promotion of effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of previous initiatives.
    - 'One Health' approach[43] that bridges the interface between the human, animal and environmental health sectors to better address the risks around emerging infections and antimicrobial resistance.
    - an integrated, multi-sectoral, all-hazards response when responding to outbreaks and other health emergencies. Strengthening the relationship of the health sector to broader disaster response systems at national and sub-national levels. WHO has clearly defined this through its Emergency and Disaster Risk Management for Health (EDRM-H) framework[44] which

[41] Paris Declaration on Aid Effectiveness http://www.oecd.org/dac/effectiveness/34428351.pdf
[42] Partnerships for the SDGs: A legacy review towards realizing the 2030 Agenda [Internet]. Sustainabledevelopment.un.org. 2016 [cited 11 August 2016]. Available from: https://sustainabledevelopment.un.org/sdinaction/publication/partnerships-a-legacy-review
[43] What is One Health'? - One Health Global Network [Internet]. One Health Global Network. 2016 [cited 11 August 2016]. Available from: http://www.onehealthglobal.net/what-is-one-health/
[44] Strengthening national health emergency and disaster management capacities and resilience of health systems. The Sixty-fourth World Health Assembly 24 May 2011. [Internet]. 2016 [cited 11 August 2016]. Available from: http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_R10-en.pdf

harmonises country commitments to improved outbreak and emergency response under IHR and the United Nations Sendai Framework on Disaster Risk Reduction (DRR)[45].

20. Further consideration is given as to whether the approach for delivering these interventions should be:
    I. focus exclusively on short-term technical input – bilateral, regional and global - focusing on delivering defined outputs to address key gaps in capabilities
    II. focus on a combination of short term technical input as above, but including long-term country presence to strengthen NPHI capabilities through leadership development, advocacy and identifying additional resources for long term strengthening
    III. exclusive engagement through regional and global institutions, through a combination of long term placements and short tech technical inputs.
    IV. the fourth option (counterfactual), of doing nothing, leaving support to other G7 and G20 members or other donors, can be excluded on the basis of the risks of inaction identified in the strategic case and because of the high level political commitments the UK has already made to be part of the G7 and G20 effort to support IHR capacity development.

[45] [Internet]. 2016 [cited 11 August 2016]. Available from: UN General Assembly. 2015. The Sendai Framework for Disaster Risk Reduction 2015-2030. http://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf

Table 4: Delivery options appraisal

Options	Strength	Weakness	VFM / costs
Option 1: PHE to directly deliver technical input into the project, drawing on resources from across the agency	• Ability to deploy most appropriate high level range of technical expertise together with public health leadership skills and experience • utilising PHEs global experience and activity e.g. in Sierra Leone, and recognition as world leaders in areas such as emergency preparedness and response • Synergies, collaboration and sharing intelligence, expertise and learning with other HMG projects such as TDDAP, Fleming Fund and UKPHRST • Further build PHE and UK capacity for future global health engagement • Enhance HMG and organisational reputation • Leverage additional resources through networks of NPHIs • WHO looks to PHE to provide technical expertise to support their IHR activities; this will consolidate this approach and reinforce HMGs commitment to support WHO • Ability to deploy most appropriate high level expertise. • Develop PHE and UK capacity for future global health engagement • Enhance organisational reputation • Leverage additional resources through networks of NPHIs	• Potential competing priorities • Requires significant time • Some expertise not available within PHE may still need to be commissioned	• Cost-effective access to and involvement of the broad spectrum of PHE specialist expertise, rather than requiring step cost of additional specialist headcount. • Access to some of PHE's experts will come at no cost to the project as PHE recognises the value and benefits of improving global health security to the UK through reducing the risk of future outbreaks. • Global public health engagement, includes investing in our own capacity and experience that, ultimately, will contribute to the health security and safety of the UK population while enhancing the UK's credibility internationally, strengthening global influence. • PHE's staff costs are fixed, established using the HMT model and guaranteed for the life of the project; overhead costs are typically 25% lower than would be the case for using 3rd party experts such as US CDC. • Backfill for experts releases them to project without detracting from PHE core activities and facilitates skills development in PHE workforce, expanding the range and numbers of specialists able to be brought to bear on the IHR project, supporting organisational knowledge retention and sustainability. • Additional opportunity for PHE to continue to offer technical support to other HMG global health project such as Fleming fund and TDDAP • Access to FETP and other specialist Public Health trainee resources at minimal cost (expenses only)

Options	Strength	Weakness	VFM / costs
			• As an executive agency of the DH, PHE is able to access the One HMG Platform and the broader procurement services associated with the Crown Commercial Services practices and policies. Procurement costs are thus reduced to a minimum for necessary third party involvement, while ensuring full best value and competitive practice to the highest HMG standards • Access to some of PHE's experts will come at no cost to the project as PHE recognises the value and benefits that return to the UK from global public health engagement, which ultimately contributes to the health security and safety of the UK population while enhancing the UK's credibility internationally, strengthening global influence.
Option 2: Create a dedicated in-country project team to deliver as a discrete project	• Clear understanding of project requirements in team • Constant point of contact for project partners • Stakeholder engagement and working in country • Easier to manage • Avoids the possibility of pressure on PHE UK responsibilities	• This will not give access to the full range of PHE knowledge & expertise • It would also limit the number of people engaged and therefore gaining experience of global health work – which builds UK capacity for future engagement. • Benefits of potential links to other projects would not be realised. • Reduced flexibility and adaptability. There will be less opportunity to adapt the programme to reflect learning from ongoing operational research and evaluation	• May have lower travel costs if more project team members are embedded in partner countries; this may be offset by higher HMG FCO platform costs with greater longer term stay • Significant penalty costs may be accrued from any in programme adaptations to priorities and technical interventions • Learning from the funded projects in Sierra Leone and Pakistan has highlighted the costs of this approach
Option 3: Fund WHO, US CDC (or other 3rd party supplier) to deliver the project	• Signal of UK commitment to the WHO	• PHE is not a funding agency; this approach is already being implemented by DFID via TDDAP and other programmes.	• VFM would depend of mix of international, national and consultant staff able to be recruited by WHO for programme delivery. Costs would be high if engaging

Options	Strength	Weakness	VFM / costs
	• Known technical competency and legitimacy of WHO/US CDC • Easier to manage • No pressure on PHE UK responsibilities • Flexibility - expertise recruited as needed, matching expertise and staffing to each project	• This model would not build up long-term UK capabilities for engaging in PH system strengthening • Challenge of ensuring capacity and commitment to IHR project and UKHMG priorities. • WHOs limited technical capacity • Less likely to build relationships with NPHIs or monitor long term results • Potential loss of control and focus from UK's aims for IHR strengthening in favour of the corporate/organisational aims and political influences of the 3rd party supplier • Would not meet the UK IHR objective of using UK technical expertise to build WHO capacity. • Project delivery might incur high costs or be significantly curtailed if suitable national officers could not be recruited.	organisations such as US CDC (where overhead cost typically exceeds 70% of all staff costs) or WHO (to embed or fund a consultant is c.£250k per annum and PHE/DH might have limited control over output/work priorities once staff are within WHO)
Option 4: Do nothing (Counterfactual)	• Lowest cost – ODA expenditure could be diverted elsewhere	• Does not improve global health security • Limited UK strategic engagement • Missed opportunities for learning and improving skills of UK workforce • Outbreak risk	• Investment in global health security can deliver substantial cost savings to UK HMG which are not realised in the "do nothing" option.

Preferred option: The preferred option is option 1 - PHE to directly deliver technical input into the project, drawing on resources from across the agency

Value for Money for the proposed interventions and delivery approach

21. The project will follow the UK Official Development Assistance: value for money guidance; "value for money means doing the best feasible programme, not just a good programme".
22. The project will seek to maximise VFM by minimising duplication and overlap with work funded by others, either by the national government in the priority countries or through other donor support.
23. Elements of the project will need to be contracted out to other agencies for delivery, in which case VFM will be tested through a competitive tendering process.
24. VFM will be measured against the 3Es – economy, efficiency and effectiveness framework. Indicators will be as outlined in the logframe (see appendix 1) and will be updated as the project activities are finalised.

Table 5: Value for Money

Economy (getting the right price for the project inputs	• Identifying synergies, working in collaboration and sharing intelligence, expertise and learning with other HMG projects such as TDDAP, Fleming Fund and UKPHRST. • Evidence based approach to identify best practice and effective interventions • PHE has an extensive range of subject specialists, global expertise and leadership; access to this organizational capability will enable a robust and flexible approach to addressing the IHR all hazards requirements. If countries priorities change during this process PHE will normally still be able to provide the appropriate expertise and so avoid the cost of external contractors. • When PHE staff are deployed internationally they are unavailable for domestic duties, which must be covered. PHE has applied HMT–approved costing models to ensure backfill for the deployment of PHE personnel away from normal duties. • Access to the full range of PHE specialist functions, without requiring recruitment and appointment of specific experts who might not be fully utilised across the life of the project. • International air travel and accommodation costs will be incurred against standard civil service protocols, purchasing economy flights only except in extremis and booking all travel arrangements with as much forward notice as possible to secure the cheapest prices. • Access to FETP and other specialist Public Health trainees provides a pool of expert resources at very low cost – trainees require discrete projects to achieve the academic and clinical standards required and the IHR activities will offer this to the benefit of both the trainee and the project – their involvement will contribute significantly to the IHR deliverables while only incremental costs of travel and subsistence will be attributable to the project for their involvement. This will also develop a larger cadre of global health experts and future public health leaders • Working in partnership with other key stakeholders to reduce duplication and enable a sustainable fully funded approach through linking with the WHO Monitoring and Evaluation framework for IHR strengthening

Efficiency (the cost of turning inputs into outputs	• Partnerships developed through the project are strategic and will sustain beyond the project funding, as they are in the UK's national interest. Enhanced UK technical expertise will endure beyond the project funding, as will the networks of technical linkages developed – this represents a long term continuing return which extends beyond the initial benefit of the short term technical support, and therefore makes for greater efficiency through greater sustainability. • The recently published report on financing pandemic preparedness recommends that 'development partners should fulfil and build on existing collective and bilateral commitments to help finance preparedness in countries needing support'[46] • Efficiency is assured by PHE using the breadth of its technical expertise, including the specialist public health trainees (see above and the staff already engaged in aligned, associated international PH projects, to deliver the outputs of this project. Moreover, close liaison with DFID and DH on specific deliverables across the Global Health Security Programme and ODA activities will ensure that there is no duplicated effort, with synergies maximised and resources shared to mutual benefit across projects. This will be achieved through the Technical Advisory Group established to support the Project Board. • The resources developed will be transferable to other countries and available to WHO
Effectiveness (how outputs are turned into outcomes and impact)	• Measured against logframe and WHO Monitoring and Evaluation IHR Framework outcomes (see logframe in appendix 1 and supporting document on theory of change for details). • Working with and supporting WHOs activities as a UK HMG commitment • Ensuring activities are context sensitive and consider the local political, economic and operational environment and work with local stakeholders to identify sustainable activities • There is an inbuilt monitoring and evaluation process and flexibility within the programme to change to meet local, public health and political needs. • This along with the Theory of Change as an integral part of the project and will inform the impact assessment • Ensuring a sustainable approach though working with other stakeholders and host countries to ensure funding is secured locally.

25. This project attaches value to developing and expanding a cadre of public health professionals internationally with the experience, skills and competencies to support global public health surveillance and control. Building the skills and competencies of both local public health professionals in the target countries and regional institutions, and among PHE/UK staff, will bring global benefits. All options will be assessed during the work planning process to estimate the numbers of public health personnel who will contribute to the programme and the number of staff who might be trained in target countries.

[46] From Panic and Neglect to Investing in Health Security: Financing Pandemic Preparedness at a National Level. International working group on financing preparedness, conference edition, May 2017, http://documents.worldbank.org/curated/en/979591495652724770/pdf/115271-REVISED-IWG-Report-Conference-Edition-5-25-2017-1-1-optimized-low.pdf

Balancing costs and benefits

26. All options offer potential high impact in terms of strengthened country IHR capabilities. Whilst the risks are lower with the options based on short –term deployments, the opportunity to draw on UK technical skills, knowledge and experience in support of global health security would be more limited as would be the ability to continue to develop that UK expertise further.
27. The options with a long term country presence supplemented by short term technical deployments provide the greatest opportunity for the UK to act and demonstrate its leadership and capacity internationally. The relationships we form as a NPHI with partners in other NPHIs will be sustained as they are of mutual interest and benefit. These virtual connections based on good working relationships can be sustained once the initial project funding ends.

Climate and Environmental Impact Assessment

28. This project is about enhancing one-health and all-hazards technical capabilities in the target countries and regional institutions and also about the development of technical partnerships. Strong partner countries and subsequent partnerships between NPHIs with the requisite technical capabilities, present the most sustainable options for IHR compliance and thus mitigating the impact of outbreaks and other significant public health events. Once these partnerships and relationships are developed, they can be maintained with limited international travel, through the use of technology to maintain virtual networks and remote mentoring.
29. The project will monitor its carbon footprint and seek to minimise the carbon impact of international travel, reducing numbers of flights and looking to develop long term mechanisms which use remote working, wherever possible, to develop and sustain close mentoring, support and developmental working relationships, rather than face to face contact. In terms of risk reduction, a successful programme is likely to reduce environmental risks from health threats. No other significant environmental impacts are anticipated through the project
30. Where possible, this PHE will endeavour to prioritise delivery options with a minimal environmental minimise the environmental impact of our activity whilst ensuring value for money and effectiveness.

Gender

31. Recent epidemics of Ebola and Zika have highlighted the differential gender impact of infectious disease outbreaks. Women were disproportionately affected by Ebola because of traditional roles such as caring for the sick and ritual cleansing of the dead – leading to greater exposure to a nosocomial infection such as Ebola. Zika's consequences are primarily manifest through infection in pregnancy. An effective international response to infection threats is therefore likely to have a greater benefit for women and girls given their greater exposure and vulnerability to some infections.
32. The programme will measure differential gender impact through the collection of age and sex disaggregated data and also through inclusion of potential differential gender impact in the development of national and regional level interventions. Efforts will be made in developing training materials and running training courses to ensure gender is reflected both in course content and in the selection of those being trained to ensure it appropriately reflects the gender mix of the health system that will deliver detection, promotion, prevention and care services.

Strategic risks

This section summarises the identified risks to the effective delivery of the project

	Risk	Mitigation
Finance	Project team and the governments of the partner countries are unable to secure additional funding,	Identify and secure additional funding from alternative sources: some potential funding partners have already been identified. Align with WHO IHR framework which includes a fully funded National Action Plan (from stakeholders and in country) Partnership working to ensure activities are sustainable and exit strategies agreed in country
	Underspend / overspend	Ability to flex between countries and the shift from SL and Pakistan to new countries over a two year period. Robust governance: monitoring, breakpoints, exist strategies
	HMG ODA priorities and commitments alter reducing the perceived value of this project	Close coordination and working practice across DH, DFID and PHE to determine the viability and value of the Project. Synergies and coordination through GHS Board.
Politics	The countries are mostly emerging democracies and although they are currently assessed as reasonably stable, the risk remains that changes in political leadership could lead to a loss of commitment to international support.	It is largely out with the project to influence political stability but as partners in UK HMG engagement, these risks will be identified and contingency plans developed. Cross-boundary adaptability of resource (allows flexibility)
	Domestic election process could mean a change in emphasis of the UK government on priorities for ODA.	All key political parties had indicated commitment to maintaining the ODA commitment, this is currently considered low risk
Security	The regions of engagement were particularly chosen due to their vulnerability. Some aspects of this vulnerability are due to security risks due to insurgencies or residual post-war conflict.	Working as part of a one-HMG platform and therefore supported and advised by FCO risk assessments. Working with WHO will enable a shift of focus other countries should security risks limit continued engagement. Cross-boundary adaptability of resource (allows flexibility)
Partnerships	Potential for duplication of effort across other stakeholder organisations If PHE too strongly supports Africa CDC there may be a risk of WHO AFRO's role being diminished or duplicated.	PHE is aware of this risk and feels that an NPHI to NPHI relationship may help to mitigate the risk of duplication. PHE is committed to building and maintaining a strong relationship with WHO AFRO and will work through AFRO to link with Africa CDC. PHE is working closely with WHO HQ to ascertain where IHR need is greatest – consequently, any risks of duplication with ACDC will be made clear to PHE through these relationships. PHE has experience of working with international agencies with overlapping geographical and political areas of influence and potentially conflicting goals – as a leading partner in ECDC, PHE has experience of fostering a mutually beneficial and complimentary partnership between ECDC and WHO EURO and will apply the lessons learned from that experience to optimise the benefit to public health in Africa. PHEs strong partnership and working relationship with key stakeholders including US CDC and China CDC will also facilitate additional engagement and limit the potential for

	Risk	Mitigation
		duplication or competition between committed partners and will add sustainability and resilience.
Programme overlap	Many other international partners including World Bank, US CDC, BMGF and UKHMG actively involved in this space, creating a potential risk of duplication, overlap or contradictory approaches. There is a risk of PHE becoming redundant if WHO and other regional institutions are also gaining resources and capacity over the same timeframe. There is also a risk of substitution and 'ever-present' PHE, who countries/institutions become increasingly dependent on.	Project partnership with WHO and through regular engagement with other agencies to ensure consistency and agree shared approaches where appropriate. Using the WHO M&E framework and development of a funded National Action Plan, agreed across all stakeholders UK HMG aligned theory of change and logframe PHE will 'work with' rather than 'do for' its country partners. Becoming redundant due to improved capability during the duration of this project is a measure of success but also a valid concern. However, the risk to the project is low. Recent JEEs and other M&E tools for IHR have demonstrated the vast need for support to develop IHR capability in LMICs. Reviews of public health workforce capacity also show that the specialist technical skills remain limited and indicate that it will take far longer than the duration of this project for the gap between need and capacity to be bridged[47]. That said, we believe that by 'working with' countries rather than 'doing for' we will not only contribute to bridging that resource gap, and thus meeting their current needs, but will also be able to dynamically review the need for our ongoing contribution and that of other partners on an annual basis, through work plan setting. This will offer flexibility to divert our intervention to other countries if indicated and applying the lessons learned in the intervention countries to new areas. Finally, our annual work programmes will have very clear exit strategies which will form part of the bilateral MOUs.
Non sustainable	Achievements from the project may not be sustained.	PHE will create sustainability through long term partnerships between NPHIs, PH professionals and WHO, and will forge lasting connectivity with other UK HMG projects. Sustainability will be heightened through leveraging other international funding sources. Sustainability will also be ensured through use of the WHO M&E framework focussing on initial partnership funding through the delivery of the National Action Plan which moves to country owned / funded commitment.

[47] Health workforce requirements for universal health coverage and the Sustainable Development Goals. Human Resources for Health Observer - Issue No. 17. WHO 2016 http://apps.who.int/iris/bitstream/10665/250330/1/9789241511407-eng.pdf?ua=1

Commercial Case

This section outlines how value for money will be achieved and sets out the procurement approach

Key message

- Project funds will primarily be allocated to PHE technical experts to deliver support and expert inputs in where needed and where value is added.
- Funds will be used to generate backfill capacity so that UK public health duties are not adversely impacted as a result.
- Commissioning specialist services, e.g. locally recruited staff, HMG platform membership, may be required during the project, and procurement methods are identified as low/medium risk, with mitigation strategies outlined.

Background for the selected commercial route

1. The vast majority of funding under this Project will be allocated to PHE technical experts to deliver support and consultancy interventions in the nations and regions where benefits can be realised to best effect. The funds will be used to generate capacity for backfill in order not to impact adversely on PHE's UK public tasks. Where it is necessary to engage non-PHE expertise, competitions or calls for proposals will be run and monitored by PHE in order to engage the most appropriate expert organisations or external technical experts to operate in the territories of interest (as set out in the Appraisal Case). We expect to commission services from the following provider sources
    a. Expert Consultants – high quality, respected public health technical experts from the territory in question who have well-established connections to influence political decision makers; the project is likely to engage such individuals on a case-by-case basis for periods not exceeding the life of the project in order to maintain a trusted local presence
    b. Consulting Firms – DFID has a number of expert preferred suppliers available to undertake assessment and analytical work exploring the political economies of the countries and regional institutions targeted in this business case. The design phase of the project proved the value in engaging such organisations through the existing supplier framework arrangement, resulting in highly informative analytical information to support decision making and investment appraisal of the most effective interventions to be targeted by the project. The project envisages commissioning more detailed specialist input from this source of approved suppliers.
    c. Third-party recruiting agencies will likely be required particularly in Nigeria and Ethiopia to recruit reliable local logistical support staff able to maintain the PHE presence and 'corporate knowledge' as PHE technical experts are rotated through the deployed location tasks. While employing such organisations is not without risk a competitive process will be followed, supported by PHE Procurement and informed by the One HMG platform mechanism to ensure effective appointments are made and that the salaries paid to locally employed staff are appropriate to the relevant economy and do not attract unwarranted administrative management fees.
    d. One HMG Platform – We have explored the costs associated with supporting PHE employees through UK consular services in the countries of interest in order best to provide for the personal security for deployed staff and to maximise efficiency of supporting such staff logistically without the cost of establishing discrete 'country offices' for the project. Where rental and lease costs are inevitable, these will be negotiated through the One HMG platform. PHE has experience of managing such

requirements from the existing projects currently running in Pakistan and Sierra Leone.

Procurement approach

2. For the One HMG platform costs, all of the external organisations that may play a part in spending the project's budget are public sector institutions.[48] The costs associated with their activities are known to PHE and can be estimated in advance, and confirmed in each annual project budget review. Further, we benefit from and support the platform's economies of scale.
3. Procuring additional project support, logistical and recruitment services via the One HMG platform will ensure that only reputable suppliers are shortlisted; the Project Management team will ensure that the scope of the services /job descriptions and person specifications are targeted specifically on the deliverables in the specific country.
4. For the consulting services required by the Project, DFID's Expert Advisory Call Down framework Service (EACDS) 'Strengthening resilience and response to crises' will be the channel through which approved suppliers are engaged. This requires payment of a management fee to the consortium provider which has already been negotiated at a beneficial rate for DFID. No further procurement costs are associated with engaging consultant firms through this route, avoiding the full expense of running discrete bespoke procurement exercises for each requirement.

Table 6 - Risks associated with procurement approach

Risk	Mitigation	Risk Level (post mitigation)
One HMG Platform in any particular country reaches maximum capacity and cannot support PHE requirement	Regular and on-going discussion with the One HMG staff in country will identify if this risk is likely to materialise; current expectation is that PHE's modest platform requirements will not stretch capacity and become threatened.	Low-Medium
Suppliers expected to bid for Project funding choose not to bid	The EACDS Consortium has a number of expert organisations specialising in analytical consultancy pertinent to the needs of the Project, consequently this risk is considered to be of low probability.	Low
Individuals likely to apply for in-country employment are technically and professionally competent, but are unable to influence delivery of Project outcomes or are ineffective in mobilising internal commitments/funding for the project goals.	The professional network of PH practitioners interested in this field of work is expected to generate high quality candidates for the senior technical expert roles. Selection and appointment criteria will be conducted by a panel specifically seeking to appoint incumbents who are well connected in the territories/institutions of interest, with a proven track record of success in delivering international health outcomes	Low-Medium

Governance

5. Appropriate governance protocols were developed during the design phase and are already in place to oversee effective delivery of this project. The key elements of project governance are:
    a. The Global Health Security Programme Board – Chaired by the Programme's overall SRO, DH's Director of Health Protection and Emergency Response, and containing a range of key partners from across the Department, the Programme Board holds the Project Lead to account for delivery of the project. The board meets every 6 weeks.

[48] DFID, UK consular offices for One HMG platform.

b. An established Project Board with representatives from across PHE's expert delivery teams, DH and the support of a Technical Advisory Group with representation from DFID and other stakeholder organisations as required to inform project activities. In particular, the Board has already demonstrated effective information sharing to ensure there is minimal duplication of effort, and promoting synergy and cooperation across other health-related ODA initiatives such as TDDAP and Fleming Fund. The project board currently meets every 6 weeks in line with the Global Health Security Programme Board, but intends to increase meeting frequency to monthly.
c. An effective and dedicated Project Management team including access to finance and commercial staff that are allocated to support the specific reporting and management requirements of ODA funding. The team will ensure timely processing of internal and external governance approval cases, maximising prompt and effective decision making and allocation of funds to specific work packages and project tasks. The project management team meets weekly.

Financial Case

This section sets out the sources of funding and includes a high level budget. It outlines how funds will be disbursed, monitored and accounted for.

Key message

- This project is subject to significant high-level financial oversight under IDA; OECD; IATI and ICAI standards.
- Within DH and PHE, financial oversight comes from the Global Health Security Programme Board and the IHR Project Board.
- An MoU between DH and PHE will define the project deliverables and ensure compliance with all financial oversight and governance mechanisms.
- PHE has been allocated £16m of ODA funds for project delivery between 2016-17-2021.
- **£1.1m** of this was allocated for the design phase (until end Oct 2017), leaving **£14.9m** for the implementation phase.
- The spend profile of the project reflects conclusion of the initial design phase, then start-up and build-up of investments as work streams commence and scale up. This is currently forecast to require commitment of **£14.9m**

1. As part of the 2015 Spending Review, the Department of Health (DH) and PHE made a joint bid for £16m to fund work on strengthening international health systems and developing stronger health systems in lower and middle income countries.HM Treasury confirmed that new ODA funding was made available to DH for five years from 2016-17.

High level oversight

2. The IHR project is funded from ODA budgets. The MoU between DH and PHE governing this project will ensure compliance with the standards of the high level financial oversight under IDA, OECD, IATI and ICAI.
3. PHE will also adhere to International Aid Transparency Initiative (IATI) standards for transparency.
4. In 2010, the government established the Independent Commission for Aid Impact (ICAI) which has a remit to review all UK government aid both in DFID and elsewhere. The government will also sharpen oversight and monitoring of ODA spending. This will apply to all government ODA spending, including through the cross-government funds.
5. The Secretary of State for International Development is required by the International Development (Official Development Assistance Target) Act 2015 to make arrangements for the independent evaluation of the extent to which all ODA provided by the UK represents value for money and to include a statement on these arrangements in DFID's Annual Report and Accounts. In addition, HM Treasury and DFID co-chair a working group, reporting to ministers, to oversee HMG ODA expenditure.
6. Further oversight is provided by the DH Global Health Security Programme Board. The project has its own Board, with representation from DH, PHE, DFID, each being accountable within their department's standing management and governance arrangements. The Project Board is collectively accountable via the group's Chair to the Global Health Security Programme Board.

Overall budget and spend profile

7. The full project budget available to PHE is £16 million over the life of the project (commencing November 2016).

8. A budget of £1.1m was allocated for the design phase of the project, which concludes at the end of October 2017.
9. The spend profile for IHR to deliver the outputs highlighted in the appraisal case is profiled in order to ensure that in the first year of designing and initiating the project the spend target is achievable, before ramping up to a higher annual spend for years 2-5 of the project.
10. The Project budget has been informed by recent experiences and real expenditure data in related projects, particularly in Sierra Leone and Pakistan, giving confidence that the spend profile is achievable, with sufficient flexibility to respond to developments and opportunities during the project. It is expected that some work packages will conclude naturally during the project. The budget has been phased with key decision points and potential political changes in mind, so that activities can be curtailed or enhanced in order to reinforce success and accommodate any altered fortunes in specific territories.
11. The spend profile of the project reflects conclusion of the initial design phase, then start-up and build-up of investments as work streams commence and scale up. This is currently forecast to require a further commitment of £14.9m[49] over the remaining life of the project, as follows:

	Design Phase			Implementation phase			
Financial year	**2016-17 Oct-Dec £m**	**2016-17 Jan-Mar £m**	**2017-18 Apr-Oct £m**	**2017-18 Nov-Mar £m**	**2018-19 Apr-Mar £m**	**2019-20 Apr-Mar £m**	**2020-21 Apr-Mar £m**
£ million RDEL	**0.1 (expended)**	**0.2 (expended)**	**0.4 (forecast)**	**1.5**	**3.5**	**5.0**	**5.0**
£ million CDEL	**0**	**0**	**0**	**0**	**0**	**0**	**0**

12. A budget of £1.1m was allocated for the design phase of the project. All planned design phase activities have been completed. However, to avoid raising expectations in advance of a final selection of countries of focus and confirmation of full project funding, we modified the size and scope of design phase missions. As a result, we have been able to preserve funding for additional detailed design and implementation planning immediately following a decision on future funding. We will discuss with DH the possibility of carrying design phase funds into the implementation phase, as this will commence within the same calendar year.
13. The transition from design phase to implementation phase over FY2017-18 has been estimated at 'worst case': the profile is entirely achievable if ministerial approval to proceed is granted promptly after the 2017 summer recess. Delays in approval will inevitably curtail the ability to commission services and recruit the technical expert staff.
14. The project total spend profile will be reviewed as part of the implementation phase and on an ongoing basis; current plans will mature during the first year of implementation.
15. Further detail is provided in supporting document 10.

Financial monitoring

16. ODA is measured on a calendar year basis. To ensure the Government meets the legally-binding 0.7 per cent GNI target (International Development (ODA Target) Act 2015) in each year of the spending review period, DH has been tasked with spending at least 85 per cent of the ring-fenced budget before 31 December of each year. DH must inform HM Treasury and DFID of any underspends against calendar year forecasts at the earliest opportunity and at least by the end of September.
17. DH's 2015 Spending Review Settlement Letter is clear that the ODA funds may be repurposed and must be returned to HM Treasury if they are not spent by the end of the calendar year. To ensure the government's ODA commitment is met, any unspent ODA in the DH budget may be redistributed across government. Any ODA underspend may be formally returned to the Exchequer at Supplementary Estimates each year.

[49] With the additional £1.1m, this amounts to the allocated £16m.

18. PHE's Project Management team has established a monitoring and reporting mechanism to support the ODA management obligations on DH, supported by specific PHE finance and commercial staff holding ODA expertise and a routine commitment to support this and other ODA-funded projects. PHE will provide regular financial reports to the DH core team, indicating what disbursements have been made, any re-profiling of spend and the planned spend for the following period. This will become a formal reporting mechanism by which to ensure PHE is on track towards the annual financial targets and ODA reporting requirements, including the requirement to budget expenditure within calendar year periods.

Financial disbursements

To PHE

19. Financial disbursements to PHE will be made through the Grant in Aid allocation process each year, as outlined in the PHE Remit letter[50]. This will be adjusted on a quarterly basis to match the latest forecast expenditure within a financial year. PHE will work with the DH core team and finance staff to create the appropriate financial transaction and recording mechanisms to facilitate this transfer.
20. If PHE has partnered with sub-contractors to deliver the portfolio of work, payment to these sub-contractors will be made by PHE rather than DH, as DH will pay one prime organisation only.
21. PHE will manage the risk of exchange rate fluctuation within their proposed budget recognizing DH will not be able to increase the amount of budget available annually due to issues in exchange rates. As far as possible, PHE will contract only for sterling transactions. Where this is not possible and if foreign exchange fluctuations become intolerable, PHE will raise an issue through the Project Board and where necessary seek Programme Board endorsement to curtail or even cease some activities altogether as and when they become too great a financial burden to the broader goals of the project. In this way, work package and operational targets will be continually monitored for affordability

To downstream sub-contractors

22. Financial disbursements to downstream sub-contractors will be made, if applicable, by PHE to the relevant international or country bank accounts. Disbursements will be made based on payment schedules contractually agreed between PHE and sub-contractor. Agreements will include appropriate focus on performance management and payment by outputs or performance. Sub-contractors in LMIC settings may not be able to scale up project activities without up-front funding to procure equipment or hire staff for example. In these cases PHE will be required to make an up-front payment to the sub-contractor, usually with the assistance of in-country staff via the One HMG Platform. If PHE is unable to pre-finance in this way, PHE will request that DH seeks HM Treasury approval to set up a pre-financing mechanism that can be accessed by PHE's supplier.
23. PHE recognizes that payment in advance is not the norm or advisable and does not anticipate the need to make such payments[51]. However, if in exceptional circumstances, PHE is required to make a payment in advance of need PHE will agree the payment with HMT. PHE will not release annual funds in one disbursement, but rather agree a payment schedule around smaller disbursements or milestones to mitigate the risks that the funds do

[50] This project has been identified as one of PHE's key deliverables in its global health function. Corporate report PHE remit letter: 2017 to 2018 - Letter from Nicola Blackwood MP confirming the role the government expects PHE to play in the health and care system in 2017 to 2018 Department of Health and Public Health England 12 April 2017. https://www.gov.uk/government/publications/phe-remit-letter-2017-to-2018 (accessed 22 June 2017)

[51] HMT Managing Public Money (Annex 4.8.5) notes that payment in advance of need should be exceptional and only considered if there is a good value for money case to be made. If advance payments are made these need to be tightly controlled within the accompanying documentation. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/454191/Managing_Public_Money_AA_v2_-jan15.pdf (accessed 22 June 2017)

not provide the services agreed, corruption within the country, or that funds are not used as intended. PHE will make arrangements to access the DFID procurement protocols for engaging the services of overseas subcontractors wherever possible and practicable.

Management Case

This section sets out the governance and management arrangements and how the project will respond to changes in context. It outlines key milestones and decision points through the life of the project

Key message

- The IHR project will be managed and governed by a number of different groupings both within PHE and DH, to provide direction, technical expertise and oversight.
- Annual work programmes will be developed and monitored for the different project work packages. Annual reviews will ensure new intelligence/opportunities can be incorporated into the project.
- Impact will be assessed through M&E, including routing progress monitoring against a logframe and quarterly reporting/annual reports, and an external evaluation.
- Decision-points are built into all project workstreams to allow for the project to be revised, reviewed or terminated if key objectives are not being achieved or significant changes occur.

Overview

1. This project forms part of the DH Global Health Security Programme. This work is regularly reviewed and governed by a Programme Board chaired by the DH Senior Responsible Officer for the Programme.
2. The reporting cycle for the DH Programme Board is 6 weekly and updates are given on progress and risk. In addition, delivery team meetings are held every 3 weeks and project leads are asked to provide updates on key risks, deliverables, communications, engagement opportunities as well as anything that the project lead would like to be escalated to Programme Board. The Global Health Security Programme board will ultimately sign of the design phase of the project before it moves into implementation.
3. The IHR project will be designed and delivered in line with the PPM methodologies applied to the Global Health Security Programme. The governance arrangements are defined by the Global Health Security Programme Manager and will be in line with existing programme governance. These arrangements include reporting, planning, risk management, monitoring and approvals processes.

Management arrangements for implementing the intervention

4. The project will be directed by the Director of Global Public Health and led day to day by the PHE Project Management Team (comprising one Public Health Consultant, one G7 Project Manager, and one Project Administrator and supported by the PHE ODA Finance specialists).
5. The PHE IHR Project Board will report to the DH GHS Programme Board every 6 weeks. Reporting will be against the logframe, (see appendix 1), with mid-year and end of year evaluations of progress looking at both project outputs and purpose.
6. The project will be funded through transfer of funding from DH to PHE, with quarterly financial reporting from PHE to DH and with a six monthly output reporting.

Facilitating partnerships

7. Partnerships are essential for the effective development and implementation of this project. Key stakeholders have been identified through the design phase of the project and these stakeholders will be actors in the project implementation.

8. Health advisers in DFID country offices and other donors and public health agencies with interests, engagement and participation in IHR related activities will also form part of these partnerships.

Annual work programmes

9. We will develop annual work programmes for the project to ensure effective and efficient use of resources and to monitor projects towards proposed outputs and outcomes.
10. The work programmes will be informed by local intelligence, recommendations from key stakeholders and evolving priorities and will be linked to the project monitoring and evaluation framework.
11. The work programmes will outline the technical input and expected outputs to ensure efficient and effective deployment of resources and to ensure horizon scanning and forward planning.
12. The work themes are summarised into packages consistent with the funding outlines below:

WP1 - Management Coordination - led and coordinated by a central team in the Global Public Health Department with appropriate administrative support provided to deploying departments across PHE
WP2 - Pakistan - supporting design and delivery of an Integrated Disease Surveillance system over the period September 2017 to September 2019, with potential enhancements after that period (this funding will complement existing project support to Pakistan which is funded directly by DFID)
WP3 - Sierra Leone - concluding technical support following the end of the 'Resilient Zero' project for 18 months from September 2017 in order to leave a robust legacy system in place
WP4 - Myanmar - supporting the country through JEE assessment and National Action Planning in FY 2017-18, providing technical expertise for the areas of the JEE recommendations that PHE might be able subsequently to support in the remaining years of the project
WP5 - Workforce Development – supporting WHO led global health security capacity building, developing and providing training on emergency planning and response (EPR) and development of a network of Emergency Operating Centres to benefit WHO identified weak links in Africa's surveillance and response capability.
WP6 - Africa Region – strengthening and working with national public health institutions and through WHO AFRO and Africa CDC in the territories of Ethiopia and Nigeria for national and regional PH systems development (with country level support provided through staff placements on the one HMG platform in Nigeria and Ethiopia)
WP7 - Monitoring & Evaluation - a robust M&E programme to ensure Benefits Realisation from the effort and funds expended in each of the other WPs, including recommendations for further UK investment/action

Governance

13. There is appropriate Governance in place to effectively oversee the development and delivery of this project. Figure 4 illustrates the key elements, which are:
    a. **GHS Programme Board** – Chaired by the Programme's overall SRO includes the Director of Health Protection and Emergency Response, and containing a range of

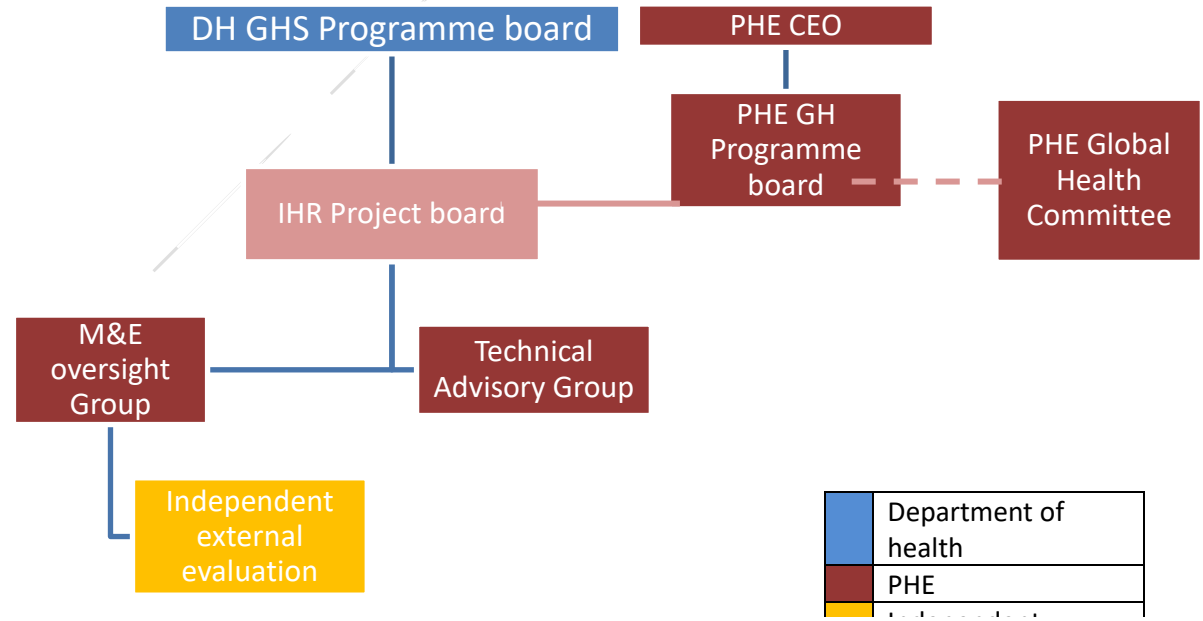
key partners from across DH and also has representation from DFID. The Programme Board holds the Project Lead to account for delivery of the project.

b. **IHR Project Board** – This group is chaired by the Director of Global Public Health and has representation from DH as the customer organisation (Deputy Director GHS, DH Head of Global Health Security Preparedness) and PHE as the supplier organisation (Dir of Global Public Health. Co-opted members include representation from DFID (Stakeholder) and from PHE technical directorates. The Project Board is responsible to PHE's Management Committee and the DH Global Health Security Programme Board for the overall direction and management of the IHR project and assurance that the project remains on course to deliver the desired outcomes to the standard stipulated in the Business Case. The Project Board is responsible for any publicity or dissemination of information regarding the project.

c. **Technical Advisory Group** – the IHR project Technical Advisory Group brings together technical experts from the IHR technical areas, from PHE (NIS, CRCE, ERD, Workforce development), other government departments (DEFRA / APHA) and other agencies and academia to advise on how best to deploy the project resources to achieve the desired outcomes. The TAG will contribute to the project annual work programmes and review progress within the technical areas.

d. **Monitoring and Evaluation Group** – The monitoring and evaluation group will consist of technical experts not directly involved in the project and representation from academia. The group will be responsible for oversight of the project monitoring and evaluation framework (see supporting document 11). The group will monitor key measures in the project logframe and pertinent to the commissioned independent evaluation.

Figure 4: Governance structure



Project management

14. The project management team will consist of a senior technical lead, a consultant in global public health, supported by a project manager and two support officers. The project lead and managers will be directly employed by PHE and accountable to the Director of Global Public Health and the project board. The details roles and responsibilities of the project management team will be outlined in the project implementation document to be delivered following project approval .
15. Managing day to day activities will be developed to those best placed to do so, based on the project objectives and tasks. Country leads, where they exist will be responsible for the oversight of day to day activity required to meet the objectives for that country. Oversight of technical input will be by the appropriate technical directorate within PHE. Thus, the project will employ a matrix management model, coordinating strategic oversight for achieving project deliverables with professional accountability to ensure the highest technical standards and optimum quality.

Bilateral agreement MOUs

16. PHE will develop an MOU with each country or regional institution setting out the progress towards IHR compliance that is anticipated during the project. Quarterly reporting of progress will also be made by the project team to the identified national lead in each of the focal countries.
17. Given that one of the main risks to the project success will be willingness and ability of national systems to work effectively with PHE and other partners in support of IHR compliance, local governance arrangements will be agreed and included in the country level MOU. These arrangements will include reporting channels in the event of difficulties making progress with the project at a country level, with a clear identification of senior officials able to support and resolve any delivery challenges. By developing an internal country governance system in keeping with local governance systems, a sense of shared ownership and accountability will be encouraged. Clear arrangements for conflict resolution that are consistent with PHE and DH standards and expectations will be included in the MoU.
18. MOUs at country level will include a description of performance management processes and clearly define the expectations on both parties, in terms of PHE's performance delivering support against nationally identified priorities and the national commitment to enable and support progress. The exit strategy will, where possible, be described in the MOU, defining the timeline for the reduction in PHE support as national capacity is built.

Assessing impact

Monitoring and Evaluation

19. The M & E plan will be flexible and proportionate and will incorporate a range of methodologies. VFM will be assessed, aligning our approach to other key contributors to IHR strengthening, e.g. World Bank programme.
20. The project will be carefully monitored through its course, using the project logframe. The logframe will be refined as the project is implemented to ensure it encapsulates the key monitoring indicators.
21. Nested country-specific logframes will be developed to underpin the overarching logframe.
22. A key component of the logframe and the monitoring and evaluation process will be the use of the WHO IHR M&E process, primarily the JEE which is central to measuring IHR capabilities and will be a core indicator of this project impact.
23. Additional monitoring will be through annual work programmes and reporting to the GHS programme board.

24. In addition, PHE will commission an independent evaluator to ensure independent monitoring and quality assurance of the project delivery to assess whether the project investments are effectively targeted and able to achieve the desired outcomes.

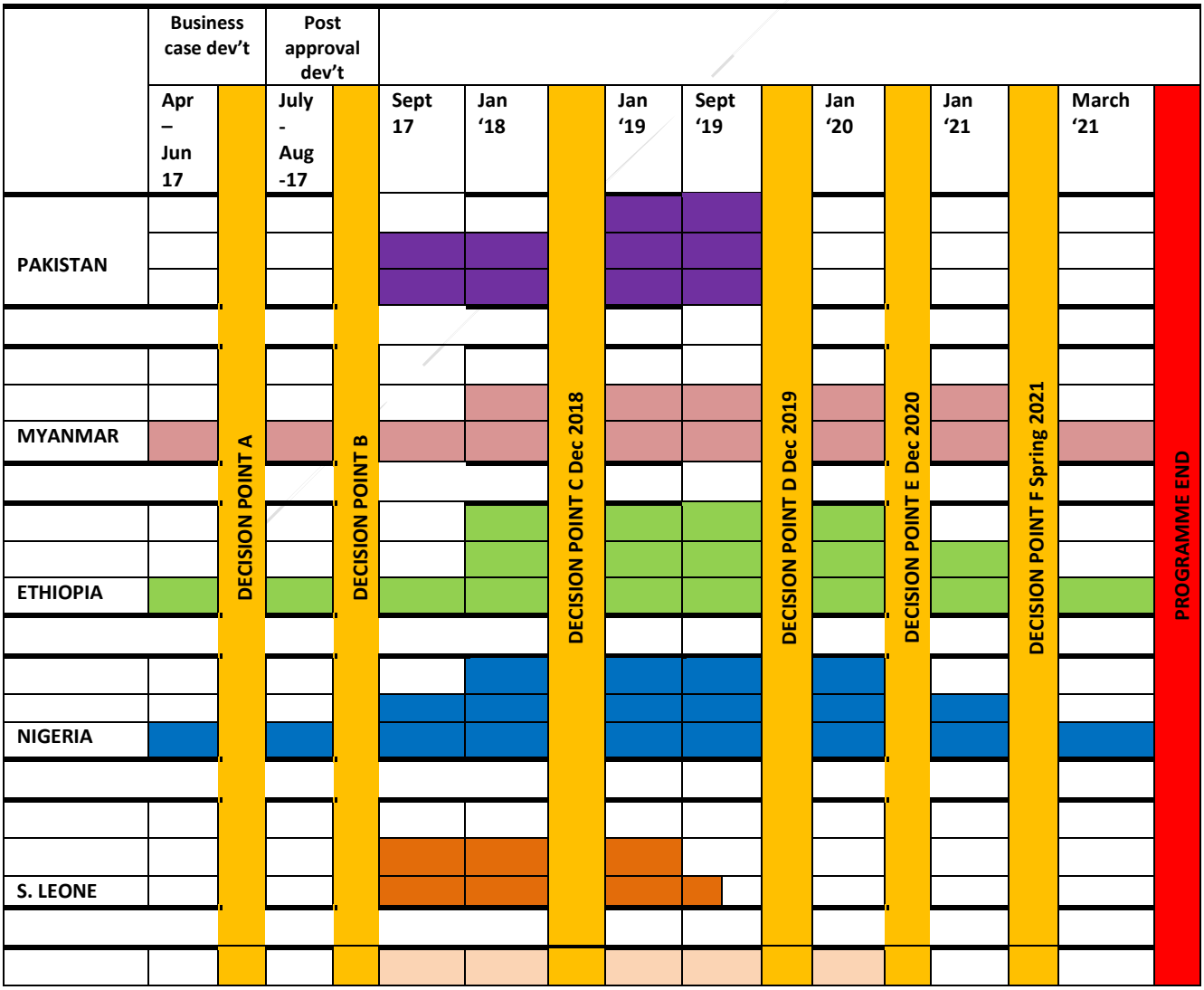
Annual Reviews and Reporting

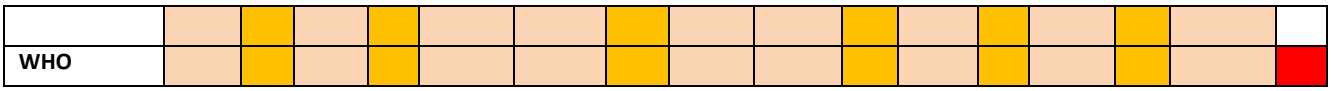
25. The project team will provide quarterly progress and an annual report. In addition, the project board will undertake annual reviews which will measure progress against annual milestones and VFM metrics. It will also look at budget execution and all aspects of implementation arrangements, as well as governance structures. The annual review process will provide recommendations to enhance delivery on activities and milestones that are facing challenges or slower to deliver.

Break clauses

26. A series of break clauses at key decision points of the project (see table 7) will allow for the project to be revised, reviewed or terminated if key objectives are not being achieved or significant changes that alter the assumptions underpinning the theory of change occur.
27. Break clauses are proposed after the first 6 months of project implementation and following key IHR activity such as a JEE report or National Health Security Action Plan. Additional break clauses will be inserted at the end of years 2 and 3 other project.

Table 7: Decision points





LEGEND: Levels of engagement by project phase

Minimum Remote advice; short term visits for meetings or workshops (days); sharing existing resources

Moderate Short-term technical support and capacity development

High Longer term technical support and capacity development

Decision points

Decision point A	June 2017	• Myanmar: JEE completed – clarification of priorities • Ethiopia: Post JEE planning workshop completed; priorities clarified • Nigeria: JEE completed – clarification of priorities; assessment of additional funding from World Bank • Pakistan: DFID extension funding decision • Review proposals from workshop with WHO regional offices
Decision point B	September 2017	• Assessment of progress and clarification of indicators and outcomes • Sierra Leone: continue presence in country post-Resilient Zero • Pakistan IHR supplementary programme from September 2018 onwards • Agree on proceeding with full engagement for Nigeria, Ethiopia, Myanmar
Decision point C	Dec 2018	• Review progress against indicators • Assess VFM of further investment • Review possibility of additional 3rd party funding (especially Pakistan and Sierra Leone) • Begin transition / exit planning for Sierra Leone (exit due March 2019)
Decision point D	Dec 2019	• Review progress against indicators • Assess VFM of further investment • Review possibility of additional 3rd party funding
Decision point E	Dec 2020	• Review progress against indicators • Assess VFM of further investment • Monitoring and evaluation planning • Exit strategy planning for all countries - including securing additional sources of funding/sustainability. • Review possibilities for non-costed extension of work to September 2021
Decision point F	Spring 2021	• Review possibilities for non-costed extension of work to September 2021 • Review progress against indicators • Evaluation in place

Appendix 1: Logframe

Note that country and regional Log Frames will contribute to programme-level Log Frames.

Item	Number	Description	Indicators	Sources	Assumptions
Impact		Improved global health security with strengthened capacity at national, regional and global level	NA	NA	IHR (2005) compliance improves global health security
Purpose		Strengthened all-hazards health protection systems, capacity and procedures to implement the International Health Regulations (2005)	NA	NA	Strategic inputs into health protection systems can strengthen global health security in the absence of comprehensive health system strengthening
Outcome	**1**	**Strengthened system coordination and collaboration in partner countries, Africa region and globally**	TBC: Summary JEE scores	JEE missions	System coordination enables effective use of other inputs to health protection systems. Continued political leadership and IHR alignment of donor funds behind national plans leads and coordination between donors.

Item	Number	Description	Indicators	Sources	Assumptions
Output	1.1	Enhanced inter-sectoral collaborations for all-hazards health protection in four to five target countries.	MoUs at country level, and evidence of functional committees and organisational links documented with meeting minutes or similar reports, joint planning/actions/exercises completed and evaluated. PHE contribution to WHO-led support clearly documented.	JEE mission reports, partner organisation feedback and external evaluations. IHR project team reports.	Donors and partner financing is adequate for workforce, infrastructure and ongoing costs of public health system operations.
Output	1.2	'One Health' capacity improved through inter-sectoral coordination and collaboration at regional level and in target countries.	Evidence of functional 'One Health' committees and organisational links, joint planning/actions exercises done and evaluated. Evidence of PHE contribution clearly documented.	JEE mission reports, partner organisation feedback and external evaluation. OIE Performance of Veterinary Services (PVS) reports if available. IHR project team reports.	
Output	1.3	Functional network of emergency operations centres and emergency response systems capable of addressing potential public health threats established, led by WHO.	Existence of networks, guidelines and SOPs. Evaluation of exercises/simulations or response to events and records of action following these.	Partner organisation documents. IHR project team reports	
Output	1.4	DPHE technical input complement DFID Tackling Deadly Diseases in Africa Programme supported priorities and influence allocation of World Bank funds aligned to national strategies.	Evidence of alignment with national post-JEE action plans and action plans of supranational organisations. Evidence of PHE alignment with other donors (monitored through DH/DFID/PHE/ WHO AFRO monitoring). Evidence of other donors' collaboration with PHE clearly documented.	Partner organisation reports, donor coordination groups at country and regional levels, IHR project team reports and external evaluation.	

Item	Number	Description	Indicators	Sources	Assumptions
Output	1.5	Defined package of technical assistance for antimicrobial resistance shaping national strategy.	Evidence of national plans to address antimicrobial resistance in partner countries and regions with evidence of PHE contribution to design.	JEE mission reports, partner organisation feedbacks and external evaluators. IHR project team.	
Activity	1.1	Technical assistance and example SOPs/ MOUs for inter-sectoral collaboration for health protection in partner countries and supranational regions	NA		Partnerships and multi-sector engagement can be attained and sustained. Funding and management capacity is sufficient. Other health system strengthening activities are complementary to PHE programme.
Activity	1.2	Technical assistance and example SOPS/MOUs for development of 'One Health' networks in partner countries and supranational regions	NA		
Activity	1.3	Technical assistance and example SOPs/MOUs for development of EOC and emergency response systems	NA		
Activity	1.4	Technical assistance to national and regional partners for programme planning for health protection system strengthening.			
Activity	1.5	Technical assistance for antimicrobial resistance plans in partner countries and supranational regions	NA		

Item	Number	Description	Indicators	Sources	Assumptions
Outcome	**2**	**Health protection professional workforce developed in skill-shortage areas (such as laboratory diagnosis and epidemiological surveillance) to have improved capability to detect, prevent and respond to public health threats in partner countries and Africa region.**	Summary JEE scores. Evidence and evaluation of the role of the developed workforce in public health deployments. Health protection workforce plan developed. Defined packages of training delivered. Agreed curricula and training materials delivered. Numbers trained. Measurable improvement in skills/competencies.	JEE missions. Deploying agencies and deployed professionals. Training evaluations. Curricula. Training materials.	Workforce development is necessary for public health system development. Trained workforce retained, which depends on available roles and funding established to recruit and deploy those trained. Workforce resourcing will be sufficient for effective action. Sustained capability can be built through supporting training capacity in partner organisations.
Output	2.1	Workforce needs assessments undertaken and toolkits available for workforce gap analysis.	Workforce needs assessment / gap analysis documents. Evidence of utilisation of these. Evidence of PHE contribution.	Documents from national partner organisations and WHO. IHR project team reports	Workforce needs assessment leads to appropriate workforce strategic planning.
Output	2.2	Workforce strategic plans developed & implemented and toolkits available for workforce strategy development.	Workforce strategy documents. Action plan progress/annual reports. Evidence of PHE contribution clearly documented.	Documents from national partner organisations. IHR project team reports.	Strategic plans have adequate resources, political engagement and leadership for implementation.

Item	Number	Description	Indicators	Sources	Assumptions
Output	2.3	Public health leaders developed and mentored and capacity increased for leadership development	# with training/mentoring (M/F, geography, role). Evaluation of mentoring. Records of training activities undertaken and personal development. Narrative of application of training, including in-turn development of others. Evidence of PHE contribution.	Partner public health mentees feedback. IHR project team reports.	Leadership in national public health professionals drives system and health development and securing of resources appropriate to public health needs.
Output	2.4	Increased number of professionals field-deployable through GOARN, Africa CDC or other bilateral and national systems	Change in # professionals (M/F, geography, role) supported by PHE, now able to be deployed to public health incidents.	Documents/feedback from GOARN, Africa CDC and NPHIs.	Agreement of participants and parent organisations. Resources for deployment.
Output	2.5	Increased number of public health professionals with shortage skills indicated by workforce needs assessments, with training capabilities increased in partner organisations	# trainings delivered for each shortage skill area. # participants (M/F, geography, role) starting and completing each training. # at 1 yr: in role able to utilise training. # co-trainers developed (M/F, geography, role) and delivering training. Participation evaluation of each training.	Partner organisations' reports. Training participant feedback. PHE programme team reports.	Identification of willing participants, availability of participants, timescale in which to deliver further rounds of peer training.
Activity	2.1	Technical assistance for co-development of national needs assessments and toolkits for workforce gap analysis	NA		Partnerships and multi-sector engagement can be attained and sustained. Funding and management capacity is sufficient. Other health system strengthening activities are
Activity	2.2	Technical assistance for co-development of national workforce strategic plans and toolkits for workforce strategic planning	NA		
Activity	2.3	Training/mentoring delivered for leadership development of post-FETP fellows and other public health leaders/future leaders	NA		

Item	Number	Description	Indicators	Sources	Assumptions
Activity	2.4	Training delivered and technical assistance for capacity development for international and national field-deployment of professionals	NA		complementary to PHE programme. Possible to identify candidates for training and mentoring.
Activity	2.5	Co-delivery of targeted training and provision of training materials to meet needs of public health systems development; including where applicable veterinary epidemiology, laboratory techniques and systems, surveillance data interpretation skills, tackling antimicrobial resistance, emergency response systems and operations centres	NA		
Outcome	**3**	**Public health technical systems enhanced and expanded in partner countries and regions**	Summary JEE scores	JEE missions	Technical inputs are most effectively utilised within the context of effective systems with adequate human resources and operational resources.
Output	3.1	Operationalisation of effective emergency preparedness, resilience and response through guideline utilisation in surveillance and laboratory settings.	Evidence of guideline/SOP availability (by type and site/geography). Evidence of guideline/SOP utilisation.	Partner organisation documents and feedback. IHR project team reports.	Guideline utilisation leads to sustained standardised surveillance and laboratory practises that enable resilience/ interoperability and effective response in emergencies.

Item	Number	Description	Indicators	Sources	Assumptions
Output	3.2	Strategy developed and operationalised for surveillance, laboratories and other health protection systems based on risk assessments of threats and capabilities	Strategy documents and operational plans. Alignment of risk assessment and strategic development. Progress/annual reports.	Partner organisation documents. IHR project team reports	Risk-based strategic planning leads to system development for priority needs.
Output	3.3	System performance tested through exercises /simulations and/or events, with after-action reviews done and acted upon.	Number and nature of exercises/simulations or evaluated responses to events and action following these.	Partner organisation reports/feedback. IHR project team reports.	Appropriate system development follows after-action reviews.
Output	3.4	Laboratory systems enhanced and quality assured, with capacity increased for laboratory QA, and laboratory networks strengthened	# (%) of national reference laboratories with international QA accreditation. # national partners with laboratory QA systems # laboratories undertaking QA. Agreements for and descriptions of laboratory network and sample referral pathways, internationally where applicable. Evidence of utilisation of sample referral pathways and implementation of lessons learnt from sample referrals. Evidence of PHE support.	Partner organisation reports/feedback. IHR project team reports	Quality assurance processes can be utilised in laboratory networks to ensure quality diagnostics for public health information and action.
Output	3.5	Strengthened systems for detection and response to chemical-toxicological public health incidents	Availability of guidelines. Response plans. Prioritisation documents. Evidence of links to international networks and expertise. Exercises.	JEE mission reports. Partner agencies' feedback/documents. IHR project team reports.	Chemical-toxicology system developments can be integrated and sustained in an all-hazards health protection system.

Item	Number	Description	Indicators	Sources	Assumptions
Activity	3.1	Technical assistance and example documents for co-development of guidelines and SOPs to support context-specific public health emergency preparedness, resilience and response.	NA		Partnerships and multi-sector engagement can be attained and sustained. Funding and management capacity is sufficient. Other health system strengthening activities are complementary to PHE programme.
Activity	3.2	Technical assistance for epidemiological risk assessment and co-development of strategic plans for surveillance and public health systems	NA		
Activity	3.3	Technical assistance for co-developed and delivered exercises, simulations and after-action reviews	NA		
Activity	3.4	Technical assistance and example documents/SOPs for laboratory networks, systems enhancement and quality assurance	NA		
Activity	3.5	Technical assistance and guidelines/example SOPs for chemical-toxicological public health systems development.			
Outcome	**4**	**Effective cross-government (UK) delivery of international public health system strengthening**	Joint DH/DFID/PHE engagement with WHO HQ and AFRO.	External evaluation. DH/DFID/PHE documents. Feedback from WHO.	Demonstrably effective delivery, organisational learning and management of resources supports sustainable public health system strengthening.
Output	4.1	Timely procurement through government systems	Number (%) of contracts procured within time frames specified in project planning documents	IHR project team	Timeliness is necessary for programme delivery within agreed timelines
Output	4.2	Effective contract management	Number (%) of specified contracted deliverables achieved on time and within budget. Number (%) of contractors with >90% of deliverables met as above.	IHR project team.	Contractors are able to deliver on programme requirements.

Item	Number	Description	Indicators	Sources	Assumptions
Output	4.3	Timely financial reporting, budget forecasting and reconciliation	Indicator in development.	IHR project team reports.	
Output	4.4	Effective robust monitoring and evaluation system	Evaluation of exercises/simulations as an M&E tool; to include evidence of application of findings from after-action reviews.	IHR project team reports. Consider external/academic evaluation.	
Activity	4.1	Procurement of external contracts through UK government procurement systems for delivery of IHR project areas.	NA		
Activity	4.2	Management of external contracts for delivery of IHR project areas.	NA		
Activity	4.3	Financial management	NA		
Activity	4.4	Simulations and exercises undertaken as evaluation	NA		