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The role of Public Health England in catalysing the genomic transformation of infectious disease services: policy recommendations

To be read in conjunction with the Executive Summary and recommendation list of the *Pathogen Genomics Into Practice* report*.

The effectiveness and speed with which genomics can transform the management of infectious disease in England depends on the ability of the health system to implement integrated and coordinated strategies to deliver genomics-informed services. Appropriate development is required to ensure the effective delivery of services in the short-term and achieve the full benefits to the public's health in the longer term. Public Health England is expected to play a leading role in developing this vital programme of transformation. The key priority actions that PHE should take now are outlined overleaf.

*The report can be downloaded at www.phgfoundation.org/reports/16857

Leadership by example: PHE should lead by example and utilise their position as experts in the development of pathogen genomics services to:

- **Share expertise** - establish and grow mechanisms for sharing expertise in genomic technology implementation, clinical and epidemiological practice with other health service and user organisations.
- **Establish expert groups** - these can develop standards across laboratory clinical and data practice.
- **Share and co-develop strategy** - in collaboration with other relevant organisations to coordinate strategies for use of genomics to ensure effective integrated delivery.

Relevant recommendations: 1, 2, 11, 12, 15, 16

Delivering a unified data infrastructure solution: multiple approaches are already being taken to find data management solutions for the integration of pathogen genomic and clinical data. To avoid the development of numerous parallel and poorly interoperable systems for pathogen genomics data management across the health system, PHE should consider:

- **Integrated data management** - shift strategic focus and resources towards a single integrated data management approach to store, share and analyse relevant genomic and clinical data, regardless of organism, clinical condition or laboratory of origin.
- **Unified storage and infrastructure** - lead on procuring a unified source of data storage and computational infrastructure that can accommodate the expanding volume of data and demand for computational capacity likely to arise as genomics is implemented across health service organisations.
- **Open data** - plan for an open data release approach and show leadership on resolving ethical and regulatory issues with sharing of clinical and epidemiological metadata within the health service and beyond.
- **Sample and data archiving** - work with researchers and those in frontline service delivery to ensure that biological samples and data are accumulated and archived in a way that makes them usable for the development of new diagnostics and therapeutics by those in both public and private sector research and development organisations.

Relevant recommendations: 13, 17, 18, 19, 20, 22, 23, 24, 29