GMI – WG1
Political Challenges

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Need for Rapid Detection

- Infectious Diseases continue to pose important threats to humans and animals
- Effective treatment, control and preventive measures usually rely on accurate and timely detection and identification of causative microbial agents
- Current detection and identification technology (e.g. cultivation, biochemical identification, immunological assay, molecular method) suffers from a number of limitations
  - Slow turnarounds
  - Not universally available
  - Difficult to standardize

A new paradigm

- Realtime genomic identification technologies offer a new paradigm that could be very fast, widely available and globally standardized
- Identification of all microorganims through connected databank platform(s) will enable global collaboration, prevention, control and development in this area
- Only through the development of a system that will be used by all countries will the real potential of sequencing in microbiology be realized

Political challenges – Theme 1

Global health diplomacy, WHO International Health Regulations requests all 194 WHO Member States to share relevant data about 'public health events of international concern'.

This could include the sharing of strains over borders

In recent years developing countries have shared pathogenic strains with the global community, and have experienced that benefits from such sharing have accrued to receiving countries, not to sharing countries

If GMI is to become truly global, the issue of sharing of data needs to be resolved in a way that ensures developing country buy-in as well as the protection of national interest for all.

Political challenges – Theme 2

Open access: to make full use of the capacity of WGS, a global and open-access database of genome sequences has to be built.

This will only be possible through close cooperation internationally, across sectors (*e.g.* human, animal, food and environment), as well as, between different stakeholders (*e.g.* commercial and not-for-profit).

Governments, different sectors and stakeholders will need to find ways to collaborate and agree on issues such as standardization, ownership and security of sensitive data.

Political challenges – Theme 3

Ownership of initiative: In a situation where a GMI system were to be developed only between OECD countries, there would most likely not be buy-in from developing countries,

Developing countries need to be involved from the initiation of the process, to ensure the creation of a system with global reach, and international buy-in

We need to learn from some bad past experiences (e.g. the international influenza virus sharing messto be better-prepared for ownership aspects of this initiative.

Political challenges – Theme 4

Sensitivity of metadata:

There would need to be international agreement about how to define tiers of certain metadata, as well as rules to govern the inclusion of such data in a protected, sensible way, including considerations of relevant privacy considerations

This should include consideration of who would have the right to use such data

Political challenges – Theme 5

IPR issues:

There could be an issue related to the sharing of benefits between countries or economic entities resulting from use of genomic data from microbiological investigations supported by GMI

For some companies and some governments there is a perceived need to maintain DNA sequences as a patentable commodity, an open-source data-base could present these parties with IPR issues

Political challenges – Theme 6

Information Technology (IT) and Internet needs: The backbone of the database will have to be robust, such that enormous datasets can be stored, sent across the world and compared in real-time.

This will require a major investment in an IT infrastructure and requires cooperation between the world's leading soft- and hardware engineers – with potential political implications.

Algorithms to handle data in different states of completeness have to be developed, which may require investments by the commercial sector.

What is the link to 'Big Data' political discussions (e.g. G8)