GHIF: A NEW STREAM OF CAPITAL TO ACCELERATE THE DECLINE IN CHILD MORTALITY

- GHIF is a $108mm investment Fund which held its final close in December 2013
- The objective of the Fund is to provide capital to late stage projects or company’s developing late stage projects, to support final clinical trials and early stage commercialisation
- We target drugs, vaccines, diagnostics and devices in infectious global health diseases which disproportionately impact populations living in the poorest countries in the World
- Our investments primarily take the form of mezzanine finance, but can include preferred equity

Causes of Death in Children Under 5 Years, 2013

- Pneumonia 15%
- MNCH 35%
- Diarrhoea 9%
- Measles 2%
- Malaria 7%
- HIV/AIDS 2%
- Injuries 5%
- Congenital abnormalities and other non-communicable diseases 11%
- Other 14%
THE GLOBAL HEALTH INVESTMENT FUND STRUCTURAL OVERVIEW

The fund was sponsored by the Bill & Melinda Gates Foundation, uniquely endowed by KfW with a cornerstone investment from IFC.

Government’s of Sweden and Canada also partnered via GCC and SIDA.

Key stakeholders have crowded in Industry and Private Investors in a unique partnership.

Global Health Objectives:
- New products
- Lower prices
- Greater volumes
- New markets
- Data gathering

1 The Fund is owned by a new 501(c)(4) charitable organization – The Global Health Investment Corporation – The Managing Member of the Fund.
We are delighted that the GHIF won the 2014 Achievement in Transformational Finance award from the IFC/Financial Times at the end of June. This is among the highest awards given to new development financing models.

In announcing the award, the judges remarked:
“*It would be criminal not to give this award to this pioneering project.*”
OVERVIEW OF GHIF INVESTMENT MANAGEMENT TEAM
GHIF INVESTORS

Active, engaged and passionate
GHIF INVESTORS

- GHIF benefits from a diverse investor base brought together in a single fund for the first time.

- Investors were attracted by the Fund mission, commitment to generating a financial return and the partial capital guarantee.

- The largest investors are all represented in the Investor Advisory Committee.

- The Heads of Research & Development from BMGF, GSK, Merck and Pfizer, and an independent member from Imperial College London are represented on the Scientific Advisory Committee.

- The Charitability Oversight Committee is made up of representatives from BMGF, Grand Challenges Canada, KfW, and SIDA.
GHIF benefits from a partial guarantee from the Bill & Melinda Gates Foundation and SIDA

This enables us to target transactions with a lower risk adjusted IRR than you would traditionally find from a traditional private equity fund

**Illustrative loss protection scenarios**
Assumes $100 million in contributed capital to the Fund

- **Full Repayment and investors receive targeted returns**
  - $100 mm Capital Returned by Fund Investments

- **20% Impairment. Investors are fully repaid**
  - $80 mm Capital Returned by Fund Investments
  - $20 mm Foundation takes First Loss

- **100% Impairment. Investor retains 60% of original investment**
  - $40 mm Investor Loss
  - $40 mm Foundation Loss-Sharing
  - $20 mm Foundation takes First Loss
GHIF PIPELINE

- GHIF is actively seeking potential investment opportunities and will continue to do so over the next 2 years.
- To-date GHIF has reviewed over 70 investment opportunities since its launch.
- The Fund has an active investment pipeline of transactions totalling over $160mm in demand demonstrating the potential of the Global Health sector as an investable asset class.
Tuberculosis (TB) is contagious and airborne; it ranks as the second leading cause of death from a single infectious agent, after the human immunodeficiency virus (HIV).

The TB bacteria usually attack the lungs, but can attack any part of the body such as the kidney, spine, and brain.

8.6 million people fell ill with TB in 2012, including 1.1 million cases among people living with HIV.

In 2012, 1.3 million people died from TB.

410,000 women died from TB in 2012. TB is one of the top killers of women of reproductive age.

An estimated 530,000 children became ill with TB in 2012.

¹Source: WHO (http://www.who.int/tb/publications/factsheet_global.pdf?ua=1)
CASE STUDY: CEPHEID’S GENEXPERT

Although not a perfect solution to the full range of TB diagnostic needs, Xpert MTB/RIF represents a meaningful advance over existing tests and has enjoyed rapid adoption in low- and middle-income countries with heavy TB burdens—thanks in part to active promotion and subsidization from the global health community.

Xpert MTB/RIF: A major advancement in TB diagnostic capabilities...

- High accuracy (>90%)
- Fast result time (two hours)
- Ability to detect RIF-resistance
- Simple sample preparation and test operation

..but Xpert MTB/RIF still falls short of the solution needed by the global health community

- High cost of device and maintenance ($24,300 for device with 5-year warranty/maintenance), with fully loaded installation and annual operation costs estimated to exceed $100,000 even after subsidies
- High COGS ($14) leading to an unsubsidized market price of $16.68
- Requires a stable/uninterrupted power supply
- Requires a temperature-controlled environment

**GENEDRIVE HIGHLIGHTS**

- **Technology:** Polymerase chain reaction, for *MTB* and RIF resistance

- **Sample preparation:**
  - Sputum sample is applied to chemically-treated paper
  - Three discs of paper are punched into test cartridge after drying

- **Device cost:** ~US$1,500

- **Cost per TB assay:** US$8

- **Time to results:** ~1 hour

- **Power source:** 12v battery or other power source

- **Temperature requirements:** Operable above 30°C

- **Technical skills required:** Low-Medium (per UNITAID scale)
Cholera is an acute, bacterial illness caused by infection of the intestine with *Vibrio cholera*

Approximately one in 20 infected persons will have severe disease characterized by profuse watery diarrhea, vomiting, and leg cramps

- Rapid loss of fluids can lead to dehydration and shock
- Without treatment, death can occur within hours

Globally, there are more than 100,000 cholera deaths each year

## ORAL CHOLERA VACCINE LANDSCAPE

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Appearance</th>
<th>Manufacturer</th>
<th>WHO PQ</th>
<th>Current Public Sector Price</th>
<th>Production Capacity</th>
<th>Summary Characteristics</th>
</tr>
</thead>
</table>
| Dukoral    | ![Dukoral Image] | Crucell (Sweden, owned by Johnson & Johnson/Janssen) | Yes (2001) | $5.00 / dose | 4 million doses per year | ▪ Also confers short-term protection against ETEC  
▪ Requires buffer solution (add’l space for storage/transport)  
▪ Time-consuming to administer  
▪ Comparatively expensive |
| Euvichol (target presentation) | ![Euvichol Image] | EuBiologics (South Korea, privately held) | Targeting 2016/2017 | ~$1.70 / dose at launch; | 6 million doses per year; increasing to 25+ million doses per year | ▪ Easy to store, deliver and handle  
▪ Easy to administer  
▪ Less space needed for storage and cold chain transportation |
| Shanchol   | ![Shanchol Image] | Shantha Biotechnics (India, subsidiary of Sanofi) | Yes (2011) | $1.85 / dose | Estimated at 4 million doses per year | ▪ Waste management for glass vials and caps  
▪ More space required compared to plastic container for storage and cold chain transportation |
EUB GLOBAL HEALTH OBJECTIVE: AN IMPROVED PRODUCT WITH GREATER REACH

EuBiologics is working toward a plastic tube presentation of its OCV product, which has a number of advantages over the prevailing glass vial presentation:

- **Lower weight**
- **Smaller volume** (at least 33% less space occupied per dose than Shanchol, allowing for more doses to be delivered within the same volume-constrained cold chain)
- **Less waste** to dispose of

_Euvichol_: Less expensive, easier to transport in the cold chain