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## **Large-Scale Delivery over Satellite of Tools to Facilitate Tele-Health, Development & Disaster Preparedness**

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### **GVF Resources**

- Non-Profit Satellite-Sector Association (FSS, MSS, BSS)
- 230+ Member Organizations Based Globally
- Members Support Millions of Systems Worldwide
- GVF Enabling Satcom Service Delivery Thru:
  - Facilitation: **Tele-Health Networks to Emergency Notifications**
  - Training: **VSAT Installation and...**
  - Preparedness: **GVF Registry & Installer Database**



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## GVF & GlobalPartnersUnited





**GlobalPartnersUnited**

### Public-Private Alliance by Expertise Domain/GVF Partnership

- **Telehealth & Communities of Practice**
- **Maternal & Child Health**
- **Community-based Health Care Systems Strengthening**
- **Mental Health**
- **Instructional Design, E-and Adult Learning**
- **Public Policy Development**
- **Disability Program, Policy, and (Re)Habilitation**
- **Youth Development**
- **Leadership, Advocacy & Negotiations**
- **Early Childhood, Primary & Special Education**
- **Teacher Training**
- **Literacy and the Media**



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## GVF Partners with Telemedicine.com, Inc

- **Daniel Kurywchak, CEO, Telemedicine.com, Inc.**
  - 17 years with the University of California, Davis Health System
  - Director of Telemedicine Technology
    - Managed
      - Technical Team
      - Distance Education Team
    - Seen over 11,000 patients in 35 specialties
    - Designed Telemedicine Systems
      - 2 Patents in Telemedicine Systems Design
      - POTS to Satellite Communications
  - Director of the Telemedicine Learning Center
    - Developed course curriculum
    - Trained over 800 Clinicians on how to develop their own Telemedicine program
- **Telemedicine.com, Inc.**
  - Telemedicine Custom System Development
  - Medical Peripheral Procurement
  - Telemedicine Installation and Training of Physicians and Technical Staff
  - Telemedicine Support
  - Worldwide Telemedicine Deployments:



## Examples of Telemedicine Technologies: Live Video Based Telemedicine

- Inpatient or outpatient specialty consultation
- Physician supervision of non-MD clinician
- Local clinician learns directly from the supporting physician



## Examples of Telemedicine Technologies: Store and Forward



- Capture still images, video clips, vitals, radiology, etc., which is transmitted to the physician
- Physician reviews at his location and replies with diagnosis and treatment plan

Store-and-forward telemedicine involves acquiring medical data (medical images, biosignals etc.) and then transmitting this data to a doctor or medical specialist at a convenient time for assessment offline. It does not require the presence of both parties at the same time.



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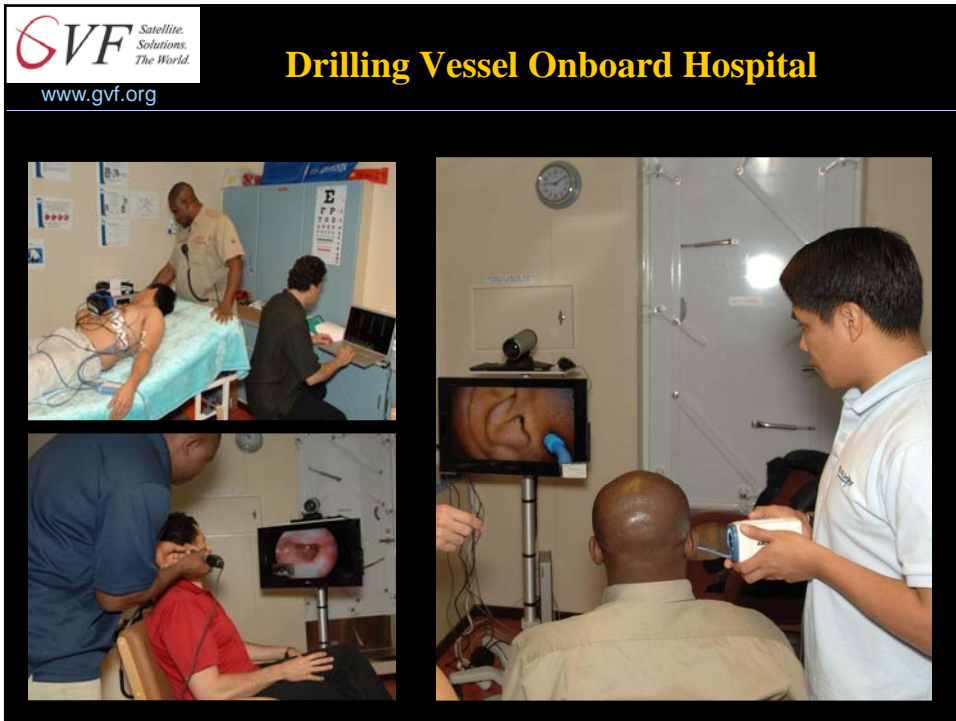
## Potential Locations for Telemedicine

- Rural and urban primary care clinics
- Hospitals
- **Emergency Management Situations/Disaster sites**
- Drilling Vessels
- Mining Operations
- Prisons/Jails/Youth authorities/Parole
- Skilled nursing and sub-acute facilities
- Regional centers/special-needs children
- Home bound patients

## Drilling Vessel

- Reduced costs by reducing the need for staff extraction
- Better productivity healthy staff education programs
- Staff satisfaction for access to health care experts
- Satellite communication from drilling vessel to physicians anywhere worldwide









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**Nigeria**

- 200 bed hospital supporting 4.5 Million people
- 99% Poverty rate



The slide features two images. On the left, a large white satellite dish antenna is mounted on a metal structure outdoors, with a person standing nearby. On the right, a man in a white shirt is standing next to a computer monitor, possibly demonstrating or explaining something to a seated person.





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## China

- 200 expatriates moving from the US to Dalian
  - Staff with pre-existing medical conditions
- Minimal clinical expertise available in Dalian
- Cost of each expat deployment \$300k for 3 years
  - Deployment cost first year \$150k due to initial move
  - Top 2 reasons for deployment failure
    - Access to Quality Healthcare
    - Student Education
  - Telemedicine greatly improves success rate



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## Telemedicine cost savings

	Live TM (132 consults)	Store & Forward TM (9 consults)
Consultations fees saved	61,908	3,699
Spouses travel arrangements	N/A	8,100
Avoided surgery	N/A	93,200
Lost Working days (salary)	75	12
<b>Total:</b>	61,908	104,999
<b>Savings grand total:</b>	<b>\$166,907.00 Out of 132 patients seen</b>	

*Cost savings doesn't include potential savings from avoided surgical procedures or travel expenses associated if the patient was required to visit the physician in person.*



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## THE mHealth Moment *From the mHealth Alliance*

Today there  
are approximately  
**5 billion mobile devices**  
in use around the world

■ **Close to two-thirds of them are in the hands of people living in emerging market economies.**

■ **Mobile phones have the ability to dramatically change the lives of those who use them, including healthcare providers.**



Photos © Datadyne



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## mHealth Strategies



Innovative mHealth projects  
are powering....

- the collection of **health data**,
- **supporting diagnosis and treatment**, and
- **advancing education and research in even the most remote and resource-poor environments.**





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## Haiti

**Satellites Connected  
University of Miami  
with Colleagues at  
Tent Hospital for  
Telemedicine Delivery  
in Haiti 2010**

**Dr. Antonio Marttos Jr  
using the portable  
satellites at the  
University of Miami's  
tent hospital in Port-  
au-Prince, Haiti.**

*Photo courtesy of the  
University of Miami School  
of Medicine.*



**Medscape  
Medical News**



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## Disaster Recovery + Tele-Health

- Financially Sustainable  
Pre-Positioning of...
  - Satcom Systems,
  - Satcom Services
  - Satcom Personnel
- That Can Be Applied in Co-  
ordination with Local Suppliers
- And That Can Be Repurposed to  
Support Medium-Long Term  
Development, including Tele-  
Health Applications











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## Satcom & The Strategic Plan

First 1-24 Hours	First 24 -48 Hours	First 3-30 days++
Disaster inventory rescue Command and Control	Humanitarian calling, Rescue, recovery, news	Restoration Recovery operations
		
Increasing bandwidth requirements as response expands over time		

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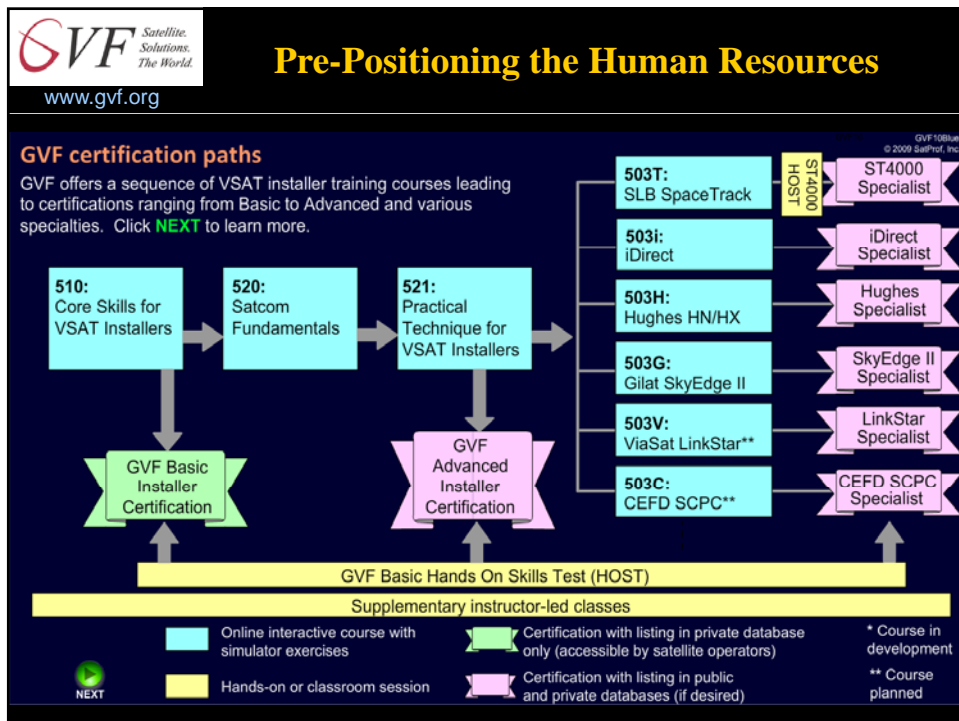
## 'Pre-Positioning': What's Already There

Enterprise	Carriers	Broadband, ISPs	Government
			
<b>DCC</b> Providing data, IP applications and broadband Internet access to corporate customers including banks (for example FBN and Oceanic) and enterprise clients.	<b>Connecting South Africa</b> Bringing telephony and Internet to over 3000 sites in the Northern Province, for communication and business needs	<b>SpaceStream</b> Bringing broadband IP to corporate users, SOHOs, small businesses (SME) and power users throughout South and Sub-Saharan Africa .	<b>Kenya Post</b> Over 600 Tele-centers in Kenya, offering Phone, FAX and Internet services, including integrated Pre-paid voice and Data solution
			

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## The GVF Member Directory as a 'Registry'

- Hundreds of Thousands of 'Pre-positioned' Systems
- Already 'Sustainable' Through Delivery of Services
- Most Are Being Used to Support Development Apps
- Contacts Available Through Searchable Directory
- Designation Is Being Added to Indicate Companies Willing to Stand-by as Pre-positioned System and Service Providers







## Registry Co-ordination: Next Steps

- UN-GVF Agreement Being Implemented
- NetHope-GVF Partnership Being Expanded
- Private Sector Support Being Co-ordinated
- Outreach to Military Responders Underway
- Indicate Your Interest in Participation



**Thank You**

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