Possible Application of Space Technology including GNSS in a healthcare model in Nepal

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Purpose

Sensitizing about the Health needs people in special situations

Inquiring the possibility of using technology to address these needs

Nepal

- Landlocked between two big countries
- One of the poorest countries in the world with an HDI of only 0.548.
- Mountains cover most of the land
- Rural areas lack basic necessities of life including healthcare
- Lack of roads and
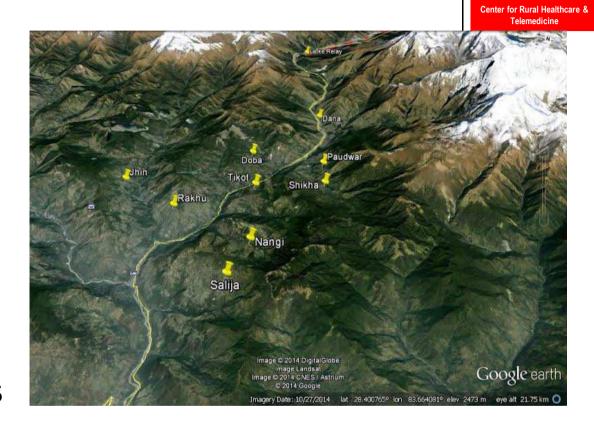- Prone to natural disasters like landslides

Healthcare realities

- Doctor: patient ratio 7: 10,000
- Health care personnel centralized in the capital

  (or migrated to greener pastures)

Sparsely populated

Remote villages in

High mountains

Have other dimensions of healthcare issues

Larger areas of lands are abandoned every year

Schools are getting fewer children

Lesser number of people are getting married

Exodus of population

Healthcare scenario in remote Nepal:

- Difficult geographical terrain
- Demography
  - Villages of 200-300 people
- Present health care system with primary health care centers, health posts and sub-health posts are insufficient
- Health centers with one or no medical personnel and very few facilities
- Long travel time

Are the native people being uprooted from their land?

What does health-rights mean for the people in these remote areas?

Overcoming these realities to provide health service needs

- Political will
- Lots of effort
- Expenditure

Health
Economics is not
Simple Arithmetic

Democracy
should be more
than tyranny of
majority

Why are these sparsely populated areas neglected?

Small 'vote bank' for politicians

Small sample size for researchers

Insignificant benefit for public health experts

Not attractive to for-profit health industries

And….

Of course that Arithmetic of apathy

A resilient healthcare model for sparsely populated mountainous regions of Nepal

- Mobile team of Health workers including Doctors
- "Demystification of Medicine" : training locals to take care of the sick
- Community managed health cooperatives with strong micro-health-insurance component

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and...

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Tele health: wireless network

Exchange of medical information

Grassroot healthworker in village

Central Hospital

Telemedicine:

One of the few
efficient and
effective way to
provide
healthcare
services in the
rural areas.

Benefits:

- Access to basic medical and surgical care services in remote and rural areas

- Availability of specialist consultation – national and international

- Continuing Medical Education for healthcare workers stationed in remote areas

- Better retention of Doctors and HWs

- Data management

- Research

Other appropriate
technology:

DRONES

Along with its human
twin

'POSTMEN'

Medical DRONE

- Numerous applications in medical services in mountainous regions

- However, its operation is challenging in terms of
  - technology,
  - regulations and
  - safety.

GNSS

- Enabling technology for smooth operation of DRONE
  - during the en-route and
  - precise landing phase.

For Regulation and Safety
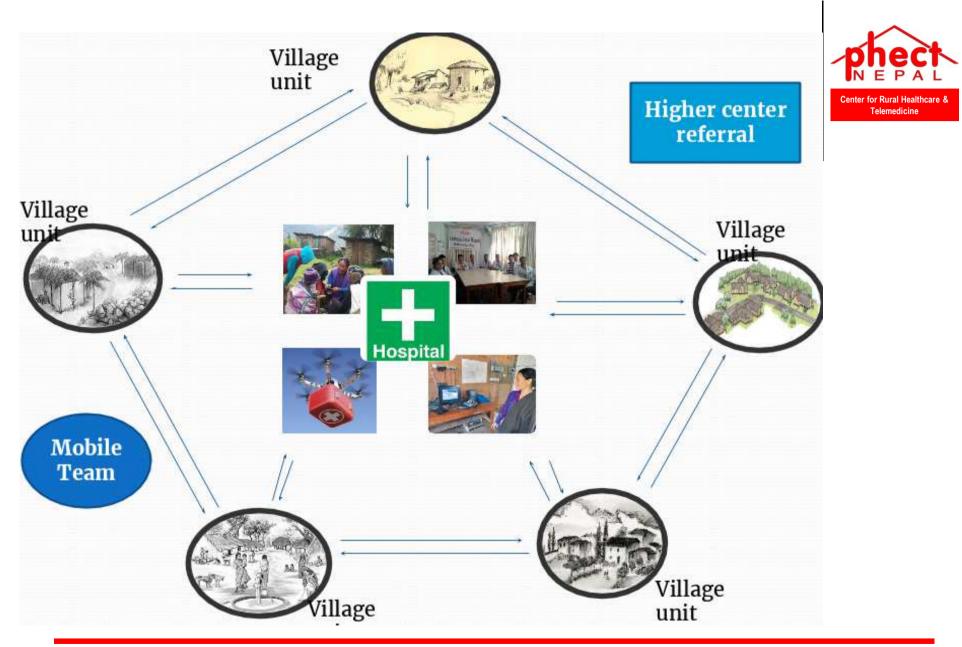
Coordination is required among

- Implementing organization
- 'Line Ministry' (MoHP)
- Civil Aviation Authority
- Home Ministry and
- Ministry of Defense

That demands

Freedom from the

- Fear of the unknown
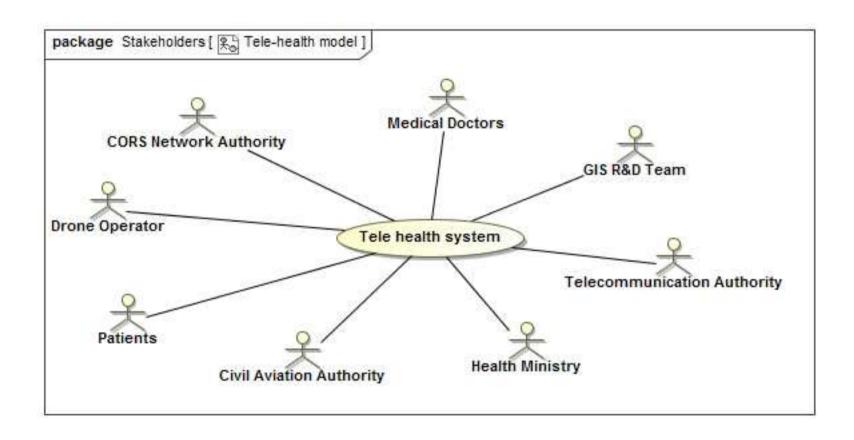- Red Tapism
- Beuraucratic hurdles

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Village unit

Village unit

Higher center referral

Village unit

Mobile Team

Hospital

Village unit

Village unit

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GNSS and Tele-health integration

- ## Tele-epidemiology
- ## Predict disease pattern e.g.seasonal infectious diseases
  - Monitoring chronic deseases
  - Recording medical demography

Identified Stakeholders

THANK YOU!