Healthcare implications of a rejuvenated southern silk route

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Introduction

Integrating regions, which have diversity in terms of ethnicity, socio-economic composition, levels of urbanization, education, technological sophistication, and primary occupations have been known to have some positive and other negative impacts on healthcare in those regions. The southern silk route covers contiguous areas in China, Myanmar, Bangladesh and India and its revitalization will have an impact on overall healthcare in all these countries in part due to their diversity. Proponents argue that this will provide a much-needed impetus for the beginning of fruitful economic exchanges among these players that will lead to an accelerated development of this region and consequently on improved healthcare access and affordability. Skeptics claim that increase in communicable diseases, introduction of diseases hitherto unknown to the region and an increase in costs is the more likely scenario. Both agree that while increase in bilateral trade and investments in India and China is the likely major outcome, spillover effects will occur in Bangladesh and Myanmar as goods and people traffic intensifies through these regions impacting lifestyles, economic activity, social behavior and the environment.

Currently the $24-billion-plus trade between China and India is primarily conducted by sea, often entailing detours of thousands of kilometers. The Yunnan Development Research Centre estimates that a direct road link between Yunnan and India via Myanmar would allow the journey from Kolkata to Kunming to be made in three or four days. A railroad would reduce it even further to 48 hours. In contrast, for goods to reach by sea it usually takes upwards of 10 days. Recent introduction of direct air-flights will also contribute to this. Improved infrastructure could also transform the northeastern region into a tourist hub. Yunnan's budget for developing cross-border infrastructure was RMB 20 billion ($2.5 billion) in the last five-year plan period (2001-2005).

In recent years, a series of agreements have been signed between India and China. A five-year plan envisages the two-way growth of bilateral trade to $30 billion by 2010 (already exceeded). India wants to make investments in the pharmaceuticals, automobile components, software, and machine tools sectors in China.

In 2005, Yunnan-India trade was worth $124 million, of which $92 million comprised imports from India and $32 million exports from China. Although iron ore dominated India's exports to Yunnan (as to China as a whole), there is a lot of room for expanding trade in agricultural products, chemicals, and pharmaceuticals. Tourism and educational services are other areas of potential cooperation. There are security concerns due to arms and drug trafficking already existing in that region. Increasing legitimate trade may have an effect of reducing the levels of illegal activity.

The healthcare context

When regional integration of this nature occurs there are a number of factors that have the potential to affect the healthcare of the people in that region. The transference of viral infectious diseases such as HIV, and HPAI has been documented in Africa and Latin America where regions have been quickly integrated. There have been increases in the incidences of TB, malaria and in the frequency of Dengue and other uncommon diseases. There is also some evidence that a virus can transform itself in more unpredictable ways as carriers move into unknown terrains. It becomes more difficult to track these carriers as contiguous regions open themselves and they are no longer contained within national boundaries. Strategies of containment that require multi-level cooperation and are aided by the power of the state are more difficult to implement.

As regions integrate the economy seeks efficiencies in finding low cost locations, generating economies of scale and leveraging synergies. Cost savings becomes a philosophy of doing business, which can be deleterious to the environment. Sanitation infrastructure can get stretched due to increased business activity, tourism and people density resulting in an increase in water borne diseases. New kinds of waste products

begin to move into neighborhoods unfamiliar with such waste, thereby causing new health problems.

Regional integration also has a way of creating greater inequities within the regions as some who can take advantage of the opportunities get richer and others are left behind. Fast growing regions with high levels of socio-economic inequity have a way of reducing healthcare access to the underprivileged by making it more unaffordable. In particular primary care can suffer in these situations creating further possibilities of epidemics. Development and increase in wealth in a region can have the effect of inefficient allocation of resources as investments move from primary healthcare into secondary and tertiary care. Health spending gets concentrated on medical treatment and hospital care rather than preventive care.

On the other hand, overall development in the region can have the impact of reducing the levels of extreme poverty and allow for sharing of best practices. An integrated region with proper levels of cooperation can also provide a better mechanism for more effective use of existing treatment regimes and dissemination of best practices in community health. Cooperation in healthcare is likely to be positively impacted by this integration. Availability and affordability of established pharmaceuticals from China and India is likely to be enhanced, as is health education. There is possibility of joint production facilities in the Yunnan area (for generics using Indian expertise) and in India (for vaccines using Chinese expertise made evident by the recent acquisition of children's Japanese encephalitis vaccines from China). The planting of medicinal plants and creating joint R&D programs in herbal medicines of both Indian and Chinese sources can be undertaken. The ability to set up ethical clinical trial facilities in this area to show the efficacy of traditional medicine is also a possibility. So is the possibility of conducting large scale epidemiological studies using the diverse ethnic groups but close genotypes thus documenting the impact of non-disease variables (such as lifestyle and social practices) on morbidity and mortality of certain diseases such as malaria and TB. Such studies have the potential to be exploitative in nature as the validity of informed consent received from subjects in such studies can be questionable. Thus the creation of "ethical" capacity for such trials becomes critical.

The Framework

There are many similarities between Yunnan and India's northeast. The Yunnan has 26 different minority groups and is historically underdeveloped and geographically isolated. People in that region spend around 80% of their healthcare costs on their own with the government picking up the rest. That is similar to India's northeast. Both regions have higher than normal infant mortality rates and mother and child health (MCH) and rural health are priorities. There is sufficient dependence on traditional medicine as a form of first line care although western style medical treatments are growing very fast. Private sector healthcare providers are gaining popularity although there is little evidence that they are in any way more efficient than the public system. Both regions have a high incidence of communicable diseases such as HIV/AIDS, TB, Hepatitis B and in particular drug resistant malarial parasites. Both regions have been funded by International agencies such as the World Bank and the WHO. All these diseases have a strong community and preventive component to their treatment and care. It should be possible to generate synergies and standardize treatment options in these regions.

In this paper we provide an outline of a framework through which we may be able to analyze the healthcare possibilities and problems of a rejuvenated silk route. Table 1 summarizes this framework. Local and international authorities have classified the diseases identified and healthcare categories (Infectious, chronic, reproductive, pediatric, and mental) in the first column as priority areas for the region. This is true of the entire region that is afflicted by similar healthcare issues some of which are likely to get aggravated by a rejuvenated route. Of particular concern is the area of infectious diseases with HIV/AIDS, HPAI (bird flu) and TB being of top priority. This is partly due to the international attention being accorded to them. However, other infectious diseases such as malaria, hepatitis B along with new strains of influenza all of which are more prevalent and becoming drug resistant are of equally serious concern. Increased burden on the existing infrastructure such as sanitation and potable water are likely to increase the frequency and complexity of these diseases. On the positive side however, a rejuvenated route is likely to find more international aid and integrated solutions coming from better

dissemination of information and optimal use of regional resources irrespective of national boundaries. To do this however, agreements and cooperative mechanisms are necessary which will allow for shared decision-making, free flow of information, free flow of medical personnel and equipment and the free flow of medicines. Such agreements have to either be included within larger regional trade agreements or will have to be executed as priority even before such more encompassing agreements are ratified.

Table 1 summarizes the framework. Different types of diseases relevant to the regions under question and whose intensity and/or complexity can change due to regional integration have been identified in column 1. In the next column different types of care have been identified followed by level of care within each type. The next two columns identify problems and possibilities of the efficient and effective delivery of care for each type of disease, and each level of care is identified. Finally the structures and processes discussed above for increasing the effectiveness of care in each category are presented.

The disease categories relevant to the regions are:

1. Infectious diseases:

    a. Vector borne diseases (such as malaria, encephalitis, HPAI etc.) whose increase has been associated in other regions with, decreased resources for surveillance, prevention and control of vector borne diseases; deterioration of the public health infrastructure required to deal with these diseases; unprecedented population growth; uncontrolled urbanization; changes in agricultural practices; deforestation; and increased travel – all of which is likely to happen in a rejuvenated silk route. Further some vector borne diseases are region specific such as “chikungunya” found in India and South-East Asia. The silk route will need to monitor this carefully to see that it is not allowed to spread to Northeast India and onto China.

    b. Respiratory and enteric infections (Cholera, pneumonia, etc.) whose incidence has been associated with increased population

density, poor sanitation, quick urbanization and increased gatherings in closed spaces such as bars and crowded restaurants.

c. Other infections (HIV/AIDS, STD, Hepatitis B, TB) whose incidence has grown with increased trucking, population densities, urbanization and other cultural factors.

2. Chronic diseases (Cancer, Leukemia, Respiratory COPD, Cardio-vascular): Fast rate of urbanization and the use of suspected carcinogens in processed foods has been associated with higher rates of cancer although evidence is not as strong. Cardio-vascular diseases have been associated with modernization and there is evidence of increased incidence in the Northeastern parts of India in the recent times. The same appears to be true of the Yunnan region. In other words, economic growth in both India and China has contributed to increase in lifestyle diseases already. The rejuvenation of the silk route may spread this to the region between the two nations as well.

3. Chronic diseases (diabetes, arthritis, pain, back, neurological, allergy, dermatology): Here too the higher incidence is already being noted and the rejuvenation is likely to spread it to this region as well. It is interesting to note that new "pain management" clinics are growing at a very fast rate in Northeastern India.

4. Reproductive health and pediatric care: sometimes referred to as Mother and Child Health (MCH) are of great importance to both Yunnan and the Northeast where infant mortality rates are higher than the rest of the countries. This is an area where private public partnerships have been known have some success. A rejuvenated silk route with higher incomes may find the growth of such partnerships.

5. Mental Health: As regions integrate and more information comes in from the rest of the world awareness of mental health issues grows. This awareness leads to a demand for mental healthcare and treatment. However, such integration brings in its own stresses and complexities and can lead to an increase in the incidence of depression. The transitory nature of some of a larger portion of the population (tourism and transportation industries) can also lead to new

kinds of mental stresses. Finally the knowledge of availability of new medication can itself create a demand for healthcare. It should also be noted that greater policing of illegal drug traffic in an integrated cross border transportation segment ebbs the flow of illegal drugs. While a very positive benefit it needs to be buttressed by social programs and treatment plans of detoxification and drug withdrawal.

In column 2 of Table 1 the care type and level discussed is:

a) Prevention: social/lifestyle, environment, politico-legal, medical

b) Primary care—or the first line of therapy involving diagnosis, treatment regime and emergency care (if necessary)

c) Secondary and tertiary care: involving specialists at different levels and including surgical and rehabilitation phases if necessary.

For each disease category and each therapeutic stage the "problems and possibilities" of a rejuvenated silk route have been identified. Some actions that may include changes in existing structures and processes have been developed in order to minimize the problems and enhance the possibilities. Political will and mobilization may be necessary to put these into place.

Finally, and not included in Table 1 is the issue of availability of affordable and appropriate medicines and therapy of good quality.

Risks and problems

There is a tangible risk of increase of infectious diseases such as vector borne diseases as well as other such as HIV/AIDS and STD. Diseases such as HPAI will become more difficult to contain in a cross-border situation unless early warning systems with proper surveillance mechanisms are put into place. This will require training of large number of para-medical personnel as well as a system and willingness to freely share information with multi-regional and multi-lateral agencies. A comprehensive response to AIDS needs to be put in place which should include best practices for

prevention, treatment and social and economic impact mitigation; multi-sectoral collaboration, and strategic leadership. Availability of cheap therapeutic options should be put into place and medicines stockpiled and kept available for emergency use. Public policies and socio-medical messages must be synchronized so that confusion in the population can be avoided.

In the case of Avian flu (HPAI) for instance it is apparent that the integration of the regions creates the potential for faster spread and difficulties in implementing control systems. What is needed is the following:

1. Joint efforts to control the spread
2. Exchange of information and control between competent authorities in all regions (exchange of control implies generating trust and developing a power sharing plan)
3. Build cooperation with regional and international organizations (especially multilateral agencies)
4. Get multilateral agencies to see the region as a single unit for funding purposes and thus generate economies of scale
5. Share best practices across regions
6. Collectively develop innovations specifically targeted to the region (for control of chickens and other practices)
7. Pool resources to develop new products such as new vaccines which are more effective in dealing with local strains of the virus
8. Impose quality control across regions. Make sure that fraudulent material does not get through. See in particular the importance in the area of hepatitis B and Leukemia vaccines
9. Develop performance surveillance mechanisms
10. Share resources and capabilities especially:
    a. Laboratory resources
    b. Technical training
    c. Epidemiological studies
    d. Pattern of transmission of viruses – new learning

e. Monitor migratory habits of birds
f. Map virus carrying situation of wild birds such as geese

11. Build risk prevention and early warning and emergency response capacity.

There needs to be the development of some common standards for the treatment of a number of diseases. This is especially true for preventive care such as the use of vaccines. Standards on basic vaccine levels need to be identified. Similarly there is a need for a comprehensive strategy on childhood diseases and environmental health. The entire region needs to be viewed as a single unit of analysis.

In order to develop these common standards a single mechanism for negotiation needs to be created. This may need a change in the mindset of regulators and government officials. This is particularly true for issues such as the availability of potable water, sanitation, respiratory diseases, drainage, effective coordination of cross border illnesses such as AIDS, access to healthcare messages and issues of animal health.

NGOs have an important role to play in the development of proper healthcare practices. This is more marked when regional integration takes place. They become the preferred source for transferring best practices and creating coordinating mechanisms discussed above. NGOs also bring out the contradictions in a number of healthcare policies of the different regions. For instance in trying to improve the impact of HIV/AIDS treatments on intravenous drug users some regions may have a policy of informing authorities of intravenous drug use in order to control illegal drug traffic. There may even be incentives for such information. However, this could go against the best practices of bringing the drug user into a comprehensive HIV/AIDS treatment program.

In general, difficult healthcare programs such as HIV/AIDS control require top down commitment for success as entire governmental bureaucracies of all regions need to be mobilized. There could be a tendency in each government to pass the buck and shirk the responsibility of show of support.

With fast developing economic activity in the region the demands for primary care will increase. Doctors from different regions are likely to flock to these areas. These are likely to be medical practitioners from different medical colleges in different countries. Practitioners of traditional medicine also provide first line care. The Yunnan and India's northeast has a number of such traditions. This makes it difficult to come up with agreed upon best treatment practices. It also leads to further discussions on creating common medical ethics standards and ways to monitor these.

One of the more unusual impacts on healthcare is the level of violence in a society. This relates to domestic violence as well as drug and gang related violence. Regions that have integrated in the past have a history of increased violence after integration. This is true of both domestic and social violence. Already both the Yunnan province and the Northeast suffer from relatively higher levels of violence related healthcare issues. While prevention is the best approach some pooling of resources may be needed for battered women shelters and the availability of proper emergency room care.

Natural disasters are another factor that impact healthcare of a region. The regions in question suffer from periodic natural disasters in the form of cyclones, and flooding and the like. Emergency management systems can be more efficiently utilized if they are shared across regions and if laws allow free movement of goods, people and supplies. The availability of doctors from nearby regions becomes an important factor.

Opportunities and benefits

If the coordination, leveraging of resources, information sharing mechanisms and common treatment practices suggested above are put into place the increased disease risks discussed above can be largely mitigated and the region can enjoy the many health benefits of integration as well. It must be recognized that just connecting the regions physically and allowing increased trade can have a negative impact on healthcare of the region while creating proper mechanisms to share resources and create common guidelines can provide many benefits other than mitigating the ill effects. There can be

many such additional benefits. Successful innovations in healthcare in one region may get more readily diffused as people learn more about them. For instance there has been much use of microfinance in delivering basic healthcare to households in Bangladesh. It is possible that regional integration may increase the demand for duplication of such successes. A similar case is that of rational drug use which is supported strongly by international agencies such as the World Health Organization and which can be implemented if some common guidelines are adopted.

Rational Drug Use integrates two major principles:

1. Use of drugs according to scientific data on efficacy, safety and compliance;
2. Cost-effective use of drugs within the constraints of a given health system

Parameters that are linked to Rational Drug Use are

a) Treatment guidelines
b) Essential Drug list
c) Perception of drug quality
d) Medical education and culture
e) Patient education
f) Prescriber monitoring
g) Incentives for providers and physicians
h) Dispensing rights for physicians

Implementing a common platform for rational drug use could be both efficient and increase affordability of drugs.

Pressure for healthcare privatization is something that accompanies regional integration. Somehow the logic of integration being business efficiency gets translated into an ethos of privatization. This can have major impact on healthcare of the region as different countries are trying to solve their healthcare issues with different levels of privatization. Learning from each other's experience can be of great help.

Another opportunity lies in the fact that in a number of countries healthcare is being offered as part of private-public partnerships. In particular we see the growth of pharmaceutical companies training doctors and opening clinics as part of their Corporate Social Responsibility (CSR) efforts. Bayer and Pfizer have done a lot of this in China and in the Yunnan and this could easily be extended to the region. The firms are interested in having a marketing influence in the entire region. Firms can also be induced to help in improving other environmental conditions that affect healthcare in the region such as

a) Indoor air pollution,
b) Contaminated water,
c) Sanitation,
d) Toxic wastes,
e) Disease vectors,
f) UV radiation,
g) Ecosystem degradation.

The private sector will find it beneficial to have a larger integrated territory within which to develop its corporate social responsibility based healthcare partnerships. This is more efficient for them both in the utilization of equipment donated as well as the visibility it accrues with an impact on a number of national markets.

One of the industry sectors that could benefit a lot from a rejuvenated southern silk route is traditional medicine. Yunnan has 2600 species of medicinal plants, which consists of 65% of the total in China. Chinese traditional medicine has been found to be very effective as adjuvant therapy in cancer and other illnesses. And yet, there have been very few clinical trials conducted on these. The reasons are twofold: one is the cost of clinical trials and the other is the difficulty in consistently extracting the same active material in order to design a proper experiment. India has expertise in both. Some of the Indian traditional medicine companies such as Lupin and Dabur have succeeded in extracting and formulating consistent dosages of traditional medicines. India has also developed expertise in conducting low cost clinical trials. This could be an ideal

opportunity for cooperation brought about by the rejuvenated silk route. There are examples of such collaboration of joint trials with traditional medicine in the area of type 2 diabetes, being carried out currently. Although the plants are from the Yunnan the trials are being conducted in Shanghai. It may be possible to set up trials in the Yunnan itself.

Jointly conducting clinical trials is also an area where a rejuvenated route could enhance opportunities. Many pharmaceutical companies are keen on conducting trials clinical trials "cheaper and quicker". India is a favorite place for the outsourcing of such trials and the industry is booming! However, there is a shortage of principal investigators, trial sites and also subjects at times. Ability to conduct combined trials could be a great opportunity.

Western medicine is growing in China at a very fast rate positioning it to become one of the largest markets for pharmaceuticals in the world. There is a great need for affordable medicines. India and China are both producers of generics at low cost. Further collaboration with them could make trade in the area of pharmaceuticals grow at a very fast rate.

Similarly, the Yunnan has been very successful in the production of lab animals. For the fast growing clinical trial industry in India there is a shortage especially of large animals. The Yunnan has recently developed almost a perfect inbred line of pigs, something of great demand in the area of drug testing. Supply of lab animals to India could become an area of new trade. Joint development of such animals is also a possibility.

Over the counter (OTC) sales of drugs is growing in the region. Some of these drugs are genuinely manufactured in OTC doses. Others are just being sold as over the counter without requisite prescriptions. One of the fastest growing businesses in the Northeast of India and in the Yunnan happens to be in the sale of prescription medicine. Prices are increasing very fast and there is a lot of spurious medicine in the market in the entire region. Pharmacovigilance is needed for the entire region and the rules should be

harmonized. It is also necessary to be able to punish spurious drug distributors wherever they are located in the region. Thus once again a mechanism for coordination of information and authority is necessary.

Terrorism can be injurious to one's health! The region has historically faced tribal conflicts, which have escalated into violence. It is predicted that an increase in trade will initially increase this level of violence unless there is more coordination among the police and border forces in the region.

Pain clinics are mushrooming in the Northeast and in Yunnan. While studies are being conducted on the reason for this, one of the hypotheses being floated is that it is a chronic condition (which businesses like-due to repeat customers) and no clear solution exists. It is also a situation where the combination of western therapeutic regimes and traditional therapies can be combined to provide relief. Some may argue that it is also due to increased stress in fast developing societies and a look for magical cures that is exploited by these clinics. Nevertheless there is likely to be many entrepreneurial ventures in the region growing through the rejuvenation of the silk route where Indian discover the value of traditional therapies and the Chinese discover the value of traditional Indian medicine.

Another growing area of global healthcare business is in Healthcare Information Technology. From medical transcriptions to electronic medical record keeping to new diagnostics allowing for telemedicine the possibilities seem to grow each day. Already there are collaborations between Indian IT firms and Chinese firms in this sector and more possibilities are likely to grow. In a recent joint venture he Chinese partner, Yunnan Sunpa Image Tele Tech Co Ltd, holds 60 percent of the shares in a new company, and India's Sobha Renaissance Information Technology (SRIT) holds the remaining 40 percent. The company will provide telemedicine services worldwide. It is possible that with more trade between Yunnan and India such collaborations will increase.

Finally, the population in China is aging very fast. Care of the elderly has become one of their healthcare priorities. More than half in China of over 50 claim some chronic condition. And yet fields such as elder care and geriatric medicine are not as well developed. There is a shortage of such skills in India as well but an increase in trade between the two countries may result in an increase in transfer of best practices in that area.

Conclusion

This paper has tried to demonstrate that there are numerous healthcare risks to the region post integration. Most of these risks are due to fast development with impact on poverty, extraordinary demands on limited infrastructure, increase in population density and degradation of the environment. Other risks include the easier movement of disease carriers with lack of the power of national boundaries to contain them or even track their movements. However, if proper coordination mechanisms and information sharing systems are put into place with shared enforcement authority, the likelihood of mitigating these risks is high. This could lead to leveraging many synergies and benefiting from a number of advantages in healthcare of such integration. Economies of scale in healthcare can lead to greater affordability and sharing of risks between different countries can also lower costs. Movement of medical professionals, researchers and community health workers is essential to reaping the different benefits of integration. A number of systems, agreements and standardized procedures need to be put into place to make all this happen. For a start a number of memoranda of recognition need to be established allowing professionals from one nation to conduct professional work in contiguous territories. Certain multi- nation task forces also need to be created to tackle critical diseases. Monitoring systems need to be standardized and agreements for sharing of data need to be instituted. Regular programs on sharing best practices need to be instituted. At the apex level there need to be a number of joint policy making bodies dealing with overall policies and programs on specific diseases and on community health programs such as potable water, sanitation, vaccination drives, health education etc. International bodies need to look at the entire integrated region as a single unit for development and for programs instead of regions within a single nation. This will increase the cooperation

and coordination of information and infrastructure. If this is possible the region will reap more benefits of integration in healthcare than suffer its consequences.

TABLE 1: FRAMEWORK FOR THE STUDY OF HEALTHCARE AND REGIONAL INTEGRATION

DISEASE	*Care type*	*Care level*	*Problems due to integration*	*Possibilities due to integration*	*Structures and interventions*
Infectious (e.g. Malaria, Hepatitis B, flu)	***Preventive***	**Social/lifestyle**	Difficult to customize due to increase diversity (e.g. Use of treated mosquito nets) Transient population creates new kinds of problems with existing social norms being violated	More resources are potentially available to be optimally used Better testing facilities and medical messages transmitted; more NGO presence	Create uniform policies but localize implementation
		Environment	Infrastructure overload affects water borne and stagnant pools requiring more treatment with "harmful" chemicals	A larger view of the ecosystem being affected and thus a more rational approach to use of treatments	Integrated approach to prevention and dominance of the eco-system view. Need international agencies to coordinate
		Politico-Legal systems	Lack of harmonization	Cross border coordination	Mechanism for coordination
		Medical Preventives such as vaccines	Cost increase	Availability	Common manufacture and procurement
	Primary	**Diagnostic**	Reduction in Primary Health care centers	Using CSR to open up PHCs, sharing emergency care	Provide integrated incentives to private sector
			New infection-delayed diagnosis and no treatment plan	Sharing of information; standardized treatment plans	Creation of coordination mechanism to share information and resources
			Environmental degradation; overload on sanitation system		Common cross-border penalties
		Treatment	Conflicting treatment plans Availability of medication	Standardize Integrated logistics management	Centralize procurement

DISEASE	***Care type***	***Care level***	***Problems due to integration***	***Possibilities due to integration***	***Structures and interventions***
		Emergency Room care	Shortage of beds and overall capabilities	Integrated capacity management with designated Trauma centers crossing national boundaries	Creation of regional trauma centres
	Secondary and Tertiary care	**Treatment and complications follow-up;**		Specialists network with eHealth partners; designated tertiary care facilities	Hub and spoke system of specialized care
		Surgery and rehabilitation			Mobility and recognition of specialists
Infectious-chronic (HIV/AIDS, HPAI, TB)	***Preventive***	**Social and lifestyle**	Mix of populations and transients make social norms ineffective even if in existence Lack of common educational message Community health programs suffer Difficult to keep track of network of "partners" and contacts		Task force needed as few if any advantages of integration
		Vaccines/other medical preventives	Difficult to keep track of compliance	Multi source availability	Coordinate procurement
		Environmental treatments	Education programs difficult to implement	Multi nation resources	Need to coordinate a common message

DISEASE	*Care type*	*Care level*	*Problems due to integration*	*Possibilities due to integration*	*Structures and interventions*
		Politico-legal systems	Conflicting incentives and punishment schemes with best practices (e.g. Informing on Intravenous drug users)		Need for coordination at the policy level
	Primary	**Diagnostic**	Difficult to encourage/mandate testing Conflicts of interest in coordinating international agency programs	More kits and more efficient utilization	Need to establish common procurement, standards etc.
		Treatment	Variability of treatment as patients move to other nations	Availability of medicines	Need to develop and institute best practices
		Emergency Room Care	Costlier and not available to many	CSR and trust fund resources	Need to get higher utilization and more synergies
	Secondary and tertiary	**Treatment and complications follow-up;**	Only care about "our" people. Chances of foreigners being neglected	Better specialists available	Develop and commonly accepted "triage" system
		Surgery and follow-up		Better specialists	Sharing of care and prioritization
Chronic (cancer, leukemia, respiratory COPD)	***Preventive***	**Social and lifestyle**	Smoking bans difficult to implement Changes in work and eating habits (betel nut and tobacco chewing)	Greater awareness of possible preventive measures especially anti-smoking	Need to develop common and uniform messages
		Environmental	Possibility of toxic wastes and other carcinogens including medical wastes	NGO activity and global activists	Need to implement global standards

DISEASE	***Care type***	***Care level***	***Problems due to integration***	***Possibilities due to integration***	***Structures and interventions***
		Medical preventives	Increased pollution		Need for standardization
		Politico-legal	Pollution laws vary		
	Primary	**Diagnostic**	Multiple systems in place	Best practices exist	Need for standardization
		Treatment	Multiple treatment regimes	Best practices exist Availability of traditional medicine from different countries	Need for coordination
		Emergency care		More resources	Need to develop common triage
	Secondary/tertiary	**Treatment and complication follow-up**		Better specialists	Need to remove barriers of mobility and develop commonly accepted norms
		Surgery and rehabilitation		Better specialists	Hub and spoke structure

DISEASE	***Care type***	***Care level***	***Problems due to integration***	***Possibilities due to integration***	***Structures and interventions***
Chronic (diabetes, arthritis, pain, back, neurological, allergy, dermatology)			Similar to above	Many traditional therapies in different nations	Need to identify best practices using traditional and modern medicine

REFERENCES

WILL BE PROVIDED AFTER THE CONFERENCE